



ΧΑΡΟΚΟΠΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ  
HAROKOPIO UNIVERSITY



University  
of Exeter

Ελλάδα 2.0  
ΕΘΝΙΚΟ ΣΧΕΔΙΟ ΑΝΑΚΑΜΨΗΣ  
ΚΑΙ ΑΝΘΕΚΤΙΚΟΤΗΤΑΣ



Με τη χρηματοδότηση  
της Ευρωπαϊκής Ένωσης  
NextGenerationEU

# PROGRAMME HANDBOOK

## POSTGRADUATE PROGRAMME

**"MSc in Children's Health & Wellbeing: Exercise, Nutrition & Digital Technologies"**

## CONTENTS

|                                                                                             |    |
|---------------------------------------------------------------------------------------------|----|
| 1. INSTITUTIONAL FRAMEWORK - GENERAL OPERATIONAL ISSUES                                     | 4  |
| General Principles                                                                          | 5  |
| Learning Outcomes                                                                           | 5  |
| Programme Governance Bodies                                                                 | 6  |
| Student Representation in Collective Bodies                                                 | 9  |
| Digital and Physical Infrastructure                                                         | 10 |
| Student Welfare                                                                             | 12 |
| Library and Information Centre                                                              | 13 |
| Student Services Centre                                                                     | 13 |
| Personnel and Student Support Structure "Aikaterini Maridaki-Kassotaki"                     | 14 |
| Student Ombudsman                                                                           | 15 |
| Provisions for Special Groups of Students                                                   | 15 |
| Electronic Services                                                                         | 15 |
| 2. PROGRAMME STRUCTURE AND OPERATION                                                        | 17 |
| Postgraduate Degree                                                                         | 18 |
| Programme Structure, Specialisations and Duration                                           | 18 |
| Requirements for Obtaining the Postgraduate Degree                                          | 19 |
| Student Selection Procedure                                                                 | 20 |
| Registration                                                                                | 24 |
| Rights of Postgraduate Students                                                             | 24 |
| Obligations of Postgraduate Students                                                        | 25 |
| Code of Conduct for Students                                                                | 26 |
| Academic Advisor                                                                            | 27 |
| Mobility of postgraduate students                                                           | 28 |
| Complaints and Objections Mechanism                                                         | 28 |
| Teaching Staff                                                                              | 30 |
| Obligations of Teaching Staff                                                               | 32 |
| Assessment and Examination Procedure                                                        | 33 |
| Dissertation                                                                                | 37 |
| Excellence Awards                                                                           | 39 |
| Grading and Degree Classification                                                           | 40 |
| Completion of Studies                                                                       | 40 |
| Degree Award and Graduation Ceremony                                                        | 41 |
| Tuition Fees and Exemptions                                                                 | 41 |
| Student Evaluation of Modules and Teaching Staff                                            | 43 |
| 3. MODULE OUTLINES                                                                          | 51 |
| UOEHUA001 - Children's Physical Activity and Health                                         | 52 |
| UOEHUA002 - From Infancy to Adolescence: Clinical Nutrition in Practice                     | 59 |
| UOEHUA003 - Children's Mental Health and Wellbeing                                          | 67 |
| UOEHUA004 - Behavioural Science to Promote Better Childhood Nutrition and Physical Activity | 75 |

|                                                                                |     |
|--------------------------------------------------------------------------------|-----|
| UOEHUA005 - Digital Health Ecosystems in Schools and Families                  | 84  |
| HUAUOE006 - Biostatistics, Research Methodology & Ethics                       | 93  |
| HUAUOE007 - Dietary Evaluation and Growth from Embryonic Age to Adulthood      | 98  |
| HUAUOE008 - Introduction to Machine Learning & AI for Health                   | 103 |
| HUAUOE009 - Prevention and Management of Childhood Obesity                     | 109 |
| Key Scientific Journals                                                        | 113 |
| HUAUOE010 - Employability and Entrepreneurship in Healthcare Professions       | 114 |
| HUAUOE011 - Human Health and Sustainable Nutrition: The Mediterranean Paradigm | 122 |
| HUAUOE012 - Sports Nutrition for Young Athletes                                | 127 |
| HUAUOE013 - Advanced Pediatric Clinical Nutrition and Dietetics                | 133 |
| HUAUOE014 - Internet of Things (IoT): Technologies, Systems & Applications     | 138 |
| ANNEX A                                                                        | 145 |
| HUAUOE015 - Dissertation                                                       | 146 |
| Guide to Dissertation Writing                                                  | 154 |
| Technical Specifications                                                       | 154 |
| Abstract                                                                       | 154 |
| Keywords                                                                       | 155 |
| Introduction                                                                   | 155 |
| Aim                                                                            | 155 |
| Methodology                                                                    | 155 |
| Results                                                                        | 156 |
| Discussion                                                                     | 157 |
| Limitations                                                                    | 157 |
| Conclusions                                                                    | 157 |
| References                                                                     | 157 |
| Examples of References                                                         | 158 |
| Appendices                                                                     | 158 |
| 4. ACADEMIC PROFILES OF MODULE LEADERS (listed in alphabetical order)          | 159 |

## **1. INSTITUTIONAL FRAMEWORK - GENERAL OPERATIONAL ISSUES**

## General Principles

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1. The Postgraduate Programme (hereinafter "Programme") entitled "**MSc in Children's Health & Wellbeing: Exercise, Nutrition and Digital Technologies**" is organised by the Department of Nutrition and Dietetics of the School of Health Sciences and Education of Harokopio University, in strategic academic collaboration with the Department of Public Health and Sports Sciences, Medical School of the University of Exeter (UoE), and will operate from the academic year 2027–2028.
2. Upon successful completion of all Programme requirements, the Programme awards a Master of Science degree (MSc) entitled "MSc in Children's Health & Wellbeing: Exercise, Nutrition and Digital Technologies".
3. The Programme offers both **Full-time** and **Part-time** postgraduate studies, delivered entirely in **English** and **fully online**.
4. The Programme is open to graduates of Departments of Higher Education Institutions in Greece or abroad holding a degree in a subject area compatible with the Programme, and in particular, but not exclusively: Nutrition and Dietetics, Medicine, Public Health, Exercise and Sport Sciences, Psychology, Nursing, Health Sciences and Biomedical Sciences, Biological Sciences, Health Informatics, Digital Technologies, and related scientific disciplines.
5. Through a modern fully online educational programme, utilising synchronous and asynchronous distance learning infrastructure, the Programme aims:
  - to provide advanced interdisciplinary postgraduate education in the following fields: children's health and wellbeing; exercise science and physical activity in children and adolescents; nutrition, dietetics and feeding practices in paediatric populations; mental health of children and adolescents; public health approaches to child and adolescent health promotion; digital health technologies for monitoring and supporting children's health; behavioural sciences; and artificial intelligence applications in healthcare;
  - to train students in research methods and actively involve them in high-level research protocols, funded from Programme resources;
  - to generate and promote new knowledge;
  - to establish research and teaching collaborations with academic institutions and other bodies, in Greece and internationally;
  - to promote excellence by awarding prizes to distinguished students;
  - to support the mobility of students and teaching staff to research centres or universities in Greece and abroad for research and conference participation;
  - to promote students' research work at international and national conferences;
  - to provide ongoing support for graduates through the University's Careers Office.

## Learning Outcomes

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1. Upon completion of their studies, graduates of the Programme are expected to:

- demonstrate the ability to understand, interpret and critically evaluate current scientific research in the fields of child and adolescent health, exercise, nutrition, mental health, public health and digital health applications;
- integrate and apply diverse strategies to support the health and wellbeing of individuals, groups and communities;
- recognise the importance of an interdisciplinary approach to contemporary issues of children's and adolescents' health and wellbeing;
- analyse and solve problems through critical collection, synthesis and evaluation of relevant information from various sources, including big data;
- apply evidence-based approaches to the promotion of children's and adolescents' health and wellbeing at individual and population level;
- translate scientific knowledge into practical information and communicate it effectively to the public;
- formulate research questions and propose research protocols with appropriate methodological design;
- acquire the knowledge and skills to respond effectively to the demands of modern, interdisciplinary working environments in child and adolescent health and wellbeing;
- communicate effectively with professional and non-professional stakeholders through various media, and demonstrate advanced digital literacy.

## **Programme Governance Bodies**

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The following bodies are responsible for the organisation and general operation of the Programme:

### **A. The Senate**

1. The Senate of Harokopio University is responsible for all matters of an academic, administrative, organisational and financial nature relating to postgraduate studies. The Senate also exercises any competences relating to postgraduate programmes that are not specifically assigned by law to other bodies.
2. The Senate:
  - approves the establishment of a postgraduate programme or the amendment of its founding decision;
  - approves the extension of the duration of operation of the postgraduate programme;
  - constitutes the Curriculum Committee in the case of inter-departmental, inter-institutional or joint postgraduate programmes;
  - decides on the dissolution of a postgraduate programme offered by Harokopio University.

### **B. The Curriculum Committee**

3. The Curriculum Committee, which consists of seven (7) members (five of which are members of the Coordinating Committee) distributed as follows:

- the Director from Harokopio University (from the Department of Nutrition and Dietetics)
- the co-director from the University of Exeter (from the Department of Public Health and Sports Sciences)
- Three (3) members from Harokopio University (from the Department of Nutrition and Dietetics)
- Two (2) members from the University of Exeter (from the Department of Public Health and Sports Sciences)

Members of the Curriculum Committee shall be Full, Associate or Assistant Professors from the Departments involved in the organisation of the Programme. The chairmanship of the Curriculum Committee is held by the co-directors of the Programme (see paragraph D below). The term of duty of members of the Curriculum Committee is two (2) years.

4. The Curriculum Committee is responsible for the organisation, administration and management of the Programme and in particular:
  - submits recommendations to the Senate for the establishment or amendment of the founding decision of the Programme, as well as for the extension of its duration;
  - constitutes Committees for the evaluation of applications from prospective students and approves their enrolment;
  - assigns teaching duties to the teaching staff of the Programme;
  - constitutes examination committees for the assessment of dissertations and appoints the supervisor for each dissertation;
  - certifies the successful completion of studies for the purpose of awarding the degree;
  - approves the annual report of the Programme, following a recommendation by the Coordinating Committee;
  - may, by decision, delegate the competences referred to in paragraphs 4.ii and 4.iv to the Coordinating Committee;
  - appoints the members of the Coordinating Committee;
  - appoints the Programme Director;
  - exercises any other competence provided for by individual provisions;
  - constitutes auxiliary bodies and/or Committees for the execution of procedures and functions of the Programme.

### **C. The Coordinating Committee**

5. The Coordinating Committee consists of five (5) members distributed as follows:
  - i. the Director from Harokopio University (from the Department of Nutrition and Dietetics)
  - ii. the co-director from the University of Exeter (Department of Public Health and Sports Sciences)
  - iii. Two (2) members from Harokopio University (from the Department of Nutrition and Dietetics)

- iv. One (1) member from the University of Exeter (from the Department of Public Health and Sports Sciences)

Members of the Coordinating Committee are with priority Full or Associate Professors from the Departments involved. The term of duty of members of the Coordinating Committee is two (2) years.

6. The Coordinating Committee is responsible for monitoring and coordinating the operation of the Programme and in particular:

- draws up the initial annual budget of the Programme and any amendments thereto, where the Programme has resources in accordance with Article 84 of Law 4957/2022, and submits a recommendation for its approval to the Research Committee of the Special Account for Research Funds (ELKE);
- draws up the annual report of the Programme and submits a recommendation for its approval to the Curriculum Committee;
- approves the incurrence of expenditure of the Programme;
- approves the award of scholarships, reciprocal or otherwise, in accordance with the provisions of the founding decision and the present Regulation;
- submits recommendations to the Curriculum Committee on the distribution of teaching duties and on the assignment of teaching duties to the categories of teaching staff referred to in Article 83 of Law 4957/2022;
- submits recommendations to the Curriculum Committee on the invitation of Visiting Professors to cover teaching needs of the Programme;
- submits recommendations to the Curriculum Committee regarding the redistribution of modules across academic semesters, as well as matters related to the quality enhancement of the curriculum;
- submits recommendations regarding cases of module repetition, extension of studies, or exclusion of students from the Programme, following an evaluation of their academic progress and the specific circumstances of each case.

The Coordinating Committee shall meet whenever necessary, upon invitation of the Programme Director, provided that at least one member from each partner university is present. Invitations shall be sent electronically to all members at least two (2) weeks prior to the meeting and shall be accompanied by the agenda. In urgent cases, this notice period may be reduced to two (2) days. Meetings may be conducted via videoconference or other electronic means.

#### **D. Programme Direction**

7. The administration and academic oversight of the Programme shall be ensured by the Programme Director and the Co-Director from the University of Exeter.

The Programme Director (from Harokopio University) shall also serve as the administrative director of the Programme. The Programme Director shall be a member of the academic staff of the Department, preferably holding the rank of Professor or Associate Professor, and shall be appointed by decision of the Curriculum Committee for a two-year term of office, which may be renewed without limitation.

The Programme Director shall have the following responsibilities:



- i. chairs the Curriculum Committee and the Coordinating Committee, draws up the agenda and convenes their meetings;
- ii. submits recommendations to the Curriculum Committee on matters relating to the organisation and operation of the Programme;
- iii. submits recommendations to the Coordinating Committee and the other bodies of the Programme and of Harokopio University on matters relating to the effective operation of the Programme;
- iv. serves as the Scientific Officer of the Programme in accordance with Article 234 of Law 4957/2022 (Government Gazette A' 141) and exercises the corresponding competences;
- v. bears responsibility for monitoring the implementation of decisions of the Programme's bodies, the application of the present Regulation, and the execution of the Programme's budget;
- vi. exercises any other competence defined in the founding decision of the Programme. The Programme Director retains the primary academic, administrative and scientific responsibility for the operation of the Programme in accordance with Article 82 of Law 4957/2022.

8. The Co-Director from the University of Exeter supports the international coordination and joint delivery of the Programme, particularly regarding the academic coordination, quality assurance and operational management of the five University of Exeter modules, alignment of academic procedures between the two institutions, and communication with the relevant academic services of the University of Exeter.

These responsibilities are exercised in collaboration with the Programme Director and do not replace or conflict with the statutory responsibilities of the Director under Article 82 of Law 4957/2022.

## **Student Representation in Collective Bodies**

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- Students have the right to participate, through their representatives, in the collective bodies of the Institution. The conditions for candidacy, the composition of the electorate, the preparation of electoral lists, and all other details of the election procedures are governed by Article 42 of Law 4957/2022.
- The exercise of trade union rights by students must not obstruct the normal conduct of any work (educational, administrative, etc.) of the Institution. Meetings, assemblies, events and activities of any kind are permitted only outside teaching hours.

## **Digital and Physical Infrastructure**

- The Programme is delivered entirely online using synchronous and asynchronous educational methods, in accordance with Law 4957/2022, Ministerial Decision 18137/Z1/2023 and the HUA Regulation for Distance Education.
- The educational process is supported by the digital and technological infrastructure of the University and of the Centre for Electronic Governance (KHD), which ensures:
  - secure access to distance learning services;
  - management of educational content;
  - synchronous and asynchronous teaching;
  - electronic communication;
  - and support for the educational process.
- The synchronous distance learning infrastructure of Harokopio University supports the following functions:
  - i. Videoconferencing using software, which ensures real-time audio and visual communication between teaching staff and students with the use of appropriate equipment (computers, cameras, microphones, speakers, headphones).
  - ii. Access to discussion spaces (chat rooms) between teaching staff and students, and among students.
  - iii. Management of educational content, which may include notes, presentations, exercises/activities with corresponding feedback, indicative solutions, as well as multimodal material (video-recorded lectures, provided that the applicable personal data protection legislation is complied with), simulations, interactive educational material using distance learning methodologies, etc.).
- The University provides the following systems for synchronous and asynchronous distance learning:
  - a. Harokopio University provides the Moodle Learning Management System (LMS) platform to all members of the Harokopio University community. Access to the platform services is granted to all users of Harokopio University through their institutional account credentials (xxx@hua.gr). The platform supports the following functions:
    - Management and upload of educational content, such as notes, presentations, scientific articles, video-recorded lectures, multimedia material, assignments, quizzes, and exercises/activities with corresponding feedback.
    - Enrollment of students in courses and notification of registered users via email regarding announcements, deadlines, learning activities, and changes to course content.
    - Support for synchronous and asynchronous distance learning through the integration of videoconferencing and lecture-recording tools.
    - Monitoring of students' learning progress, management of assessments, and provision of detailed participation and activity analytics.
    - Support for collaborative learning through discussion forums, working groups, file sharing, and interactive communication tools.
    - The academic departments of the Institution maintain channels on the YouTube platform containing video-recorded course lectures, in compliance with the applicable personal data protection legislation. Digital content may

also be made available on these channels following consultation with the administrator.

b. Members of the University academic community have access to the Zoom software (<https://zoom.us>) through full-use licenses. This software is also used by the videoconferencing service of GRNET (<https://www.epresence.gr/>). Access to this service is granted to all users of Harokopio University through their institutional account credentials (xxx@hua.gr) or through credentials provided for this purpose to the Secretariats of all University Departments. The software supports the following functions:

- Video lecture services with controlled access and the possibility of recording lectures.
- Access to discussion spaces through the use of live chat during videoconferences.
- The ability to use an electronic whiteboard during videoconferences.
- The digital services and infrastructure of the Programme comply with requirements for:
  - cybersecurity;
  - personal data protection (GDPR);
  - user authentication;
  - and accessibility, in accordance with national and European legislation and the HUA Regulation for Distance Education.
- The Department has modern educational and research facilities, laboratories and equipment supporting the educational and research activities of the Programme, including a recently renovated teaching room with state-of-the-art projection and audio systems supporting videoconferencing and distance learning.
- Through Attica Regional funded operational support programmes, the Department of Nutrition and Dietetics has acquired innovative state-of-the-art equipment to support the research activities of faculty members, laboratory teaching staff, and postgraduate students. The Department's research infrastructure includes, among others, an advanced Dual-Energy X-ray Absorptiometry (DEXA) system. In addition, a fully equipped Exercise Physiology and Ergometry Laboratory is in operation, while a fully equipped kitchen is available for the implementation of nutritional interventions.
- The Department also maintains a fully equipped computer laboratory with installed statistical analysis and dietary intake assessment software, operating on a 12-hour daily basis to support the educational and research needs of students.

## Student Welfare

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- Postgraduate students are entitled to healthcare, free meals and transport assistance. In particular:

- Medical, pharmaceutical, and hospital care: Students who do not have any other medical or hospital insurance coverage are entitled to full medical, pharmaceutical, and hospital care within the National Health System (NHS), with the relevant expenses covered by the National Organization for Healthcare Services Provision (EOPYY), in accordance with Article 33 of Law 4368/2016 (Government Gazette A' 83), solely through the use of their Social Security Registration Number (AMKA). The terms, conditions, and procedures governing the provision of such healthcare are determined by a joint decision of the Ministers of Finance, Education, Religious Affairs and Sports, and Health.
- Meals: By joint decision of the Ministers of Finance and Education, Religious Affairs and Sports, as provided for in paragraph 3 of Article 284 of Law 4957/2022 (Government Gazette A' 141), the terms, conditions, and procedures for the provision of free meals to students are determined, based on their personal and family financial situation and place of residence. The University operates a Student Restaurant where all members of the University Community may dine either free of charge or for a small fee. The restaurant operates throughout the year, except during July and August.
- Transportation support: Students of the Institution are provided with transportation assistance and the necessary means for their cultural development and recreation throughout the year. The terms, conditions, procedures, and all other matters related to these benefits are determined by a joint decision of the Ministers of Finance, Infrastructure, Transport and Networks, Education, Religious Affairs and Sports, and Culture and Tourism. More specific regulations and procedures are determined in accordance with the applicable legislation.
- Leave granted to working students: By joint decision of the Ministers of Education, Religious Affairs and Sports and Labour and Social Insurance, the mandatory granting of leave to working students during examination periods is regulated, in order to facilitate their preparation for and participation in examinations. More specific relevant regulations and procedures are determined in accordance with the applicable legislation. Special groups: The University ensures the installation and maintenance of infrastructure necessary for the access and mobility of students with special needs. University services and teaching staff provide support and assistance to ensure their unimpeded participation in academic life.
- Regulations and support services for special groups of students: The University ensures the installation and maintenance of infrastructure necessary for the mobility of special groups of students. The services of the Institution and the teaching staff provide support, facilitation, and assistance to students belonging to special groups, in order to ensure their uninterrupted participation in academic activities and their quality of life within the University premises.
- Sports, culture, and leisure activities: The University encourages and supports, through its available infrastructure, means, and resources, the participation of students and other members of the university community in cultural and sports activities, as well as in recreational, leisure, and personal development activities.

## Library and Information Centre

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- At Harokopio University, a Library and Information Centre operates in order to meet the academic community's needs for scientific information resources. In particular, for students, user training seminars are organized, while reading rooms, computers for searching printed or electronic material, and lockers for storing personal belongings are provided. In addition, facilities for self-service borrowing and photocopying of material that cannot be borrowed are available, always in compliance with the applicable copyright legislation. Part of the Library and Information Centre services may also be provided remotely, should circumstances require it.
- For information on the Library's operation and services, students should visit its website (<https://library.hua.gr/>) or contact the library staff.

## Student Services Centre

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- The University operates a Student Support Unit, whose mission is to support students throughout their academic journey, facilitate the continuation of their studies, and assist their transition into the labour market. The Student Support Unit forms part of the Directorate of Academic Affairs and Personnel, operates at departmental level, and is organised into three (3) offices.
- The Student Support Unit provides:
  - **Student Welfare Services**, through the Student Welfare Office, which is responsible for matters relating to student meals, housing allowances, the provision and distribution of educational materials, support for student sports activities, the issuance of the European Health Insurance Card (EHIC), and other forms of financial assistance that may be available, including scholarships and grants.
  - **The Studies and Career Liaison Office**, which supports students in their transition to the labour market by providing individual and group career counselling services to students and graduates. The Office offers guidance and information regarding the continuation of studies through formal educational programmes of the University or through lifelong learning and professional development programmes offered by the University's Centre for Lifelong Learning (KEDIVIM). It also organises seminars, lectures, counselling workshops, entrepreneurship activities, career and innovation events, and social engagement initiatives. Furthermore, it promotes innovative student ideas that may be developed into professional or social ventures, facilitates links between students and other University structures, particularly the Technology Transfer and Innovation Unit, supports prospective doctoral candidates in identifying companies for the completion of industrial doctorates, provides information on scholarships and bequests available to students, and monitors and disseminates information regarding employment opportunities in both the public and private sectors, nationally and internationally, through its website.

- **The Internship Office**, which centrally organises and coordinates student internships across the University, whether compulsory or optional, and provides relevant guidance and support to participating students.
- **The Erasmus Office** supports the University in its collaboration with international higher education institutions and in ensuring opportunities for student mobility for study and traineeship purposes for students enrolled in all three cycles of higher education (undergraduate, postgraduate and doctoral studies).

## Personnel and Student Support Structure "Aikaterini Maridaki-Kassotaki"

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- The main purpose of this Support Structure is to provide organised support on matters related to academic life and daily functioning that require psychological and pedagogical reinforcement.
- The Structure comprises:
  - a) The Centre for Psychological and Counselling Support, which provides free counselling and psychological support to the active student population of all Departments of the University and, more generally, offers counselling support by all appropriate means to all members of the academic community, aiming at their smoother adjustment to academic life. The activities of The Centre for Psychological and Counselling Support are supported by members of the Teaching and Research Staff and Laboratory Teaching Staff of the Higher Education Institution, or permanent staff specialized in psychiatry, psychology, social work, or holders of equivalent academic qualifications.
  - b) The Centre for Equality Assurance and Enhancement, which contributes to the promotion, safeguarding, and strengthening of: (i) equality at all levels of operation and in all processes of academic life, (ii) equal access and meaningful participation of members of the academic community, as well as awareness-raising on issues of equal inclusion and attendance within the University environment, and (iii) compliance with legality within the framework of academic freedom, the prevention of maladministration phenomena, and the safeguarding of the proper functioning of the Institution.

## Student Ombudsman

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- At Harokopio University, the institution of the “Student Ombudsperson” operates, whose responsibilities include:
  - mediating between students and faculty members or administrative services of the Institution,
  - safeguarding legality within the framework of academic freedom,
  - addressing incidents of maladministration in matters concerning students, and



- ensuring the proper functioning of the Institution.
- The Student Ombudsman has no competence in matters of examinations and student grading. The Ombudsman investigates cases, on his/her own initiative or following a student report, and mediates with the competent bodies of the Institution for their resolution.

## Provisions for Special Groups of Students

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- At Harokopio University, the institution of the “Faculty Advisor for Students with Disabilities and/or Specific Learning Differences (SpLDs)” operates. The role of the Faculty Advisor is to facilitate the participation of students with Students with Disabilities and/or Specific Learning Differences (SpLDs), in all aspects of academic life, as well as to provide information and support to these students and to members of the academic community on matters related to studies, equal integration, and attendance within the University environment.

## Electronic Services

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- Students are provided upon registration with a username and password granting them access to all electronic services offered by the University and the State. The University’s Information Technology and Network Center (ITNC) is responsible for registering students in the University user directory and subsequently creating a password, which is communicated electronically to the student. The use of the username and password is strictly personal.
- University students have access to various categories of services, including:
  - basic electronic services (email, website hosting, creation and storage of files and data in cloud computing environments),
  - e-learning services (Moodle LMS),
  - services providing access to electronic resources,
  - use of software applications provided by the University to all members of the academic community.
- Students are required to comply with the terms of use of electronic services and applications, as specified in the Operating Regulations of the Information Technology and Network Center and published on the University website. In cases where a user engages in activities that are not compliant with the applicable legal framework governing the proper use of electronic services and the regulations of the ITNC, the ITNC may proceed immediately with the deactivation of the user’s account.
- The “Student Information System” application enables each postgraduate student to monitor their academic progress (course grades, grade point average, etc.) and to

electronically submit requests for documents (e.g. official transcripts). In addition, students register for the current semester through this system.

- Within the framework of providing **asynchronous distance learning services**, the Moodle LMS asynchronous e-learning platform has been installed and operates at the Information Technology and Network Center of Harokopio University. All lecturers' presentations, questionnaires, self-assessment tests, assignments, and course informational material are uploaded to the platform. Through the electronic classroom, postgraduate students may communicate with the instructor regarding issues related to the specific course.



## **2. PROGRAMME STRUCTURE AND OPERATION**

## Postgraduate Degree

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- The Programme awards a Master of Science degree (MSc) at Level 7, in accordance with the National Qualifications Framework and the European Qualifications Framework, entitled "MSc in Children's Health & Wellbeing: Exercise, Nutrition and Digital Technologies".

## Programme Structure, Specialisations and Duration

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- The Programme offers both Full-time and Part-time postgraduate studies.
- The duration of studies for the award of the MSc is defined as follows:
  - For **full-time study**: minimum three (3) semesters / one and a half (1.5) years; maximum five (5) semesters / two and a half (2.5) years.
  - For **part-time study**: minimum six (6) semesters / three (3) years; maximum eight (8) semesters / four (4) years.

- The Postgraduate Programme offers the possibility of part-time study for students who wish to pursue it.
- The structure of the Full-time Programme is as follows:

Semester 1: Four (4) compulsory modules, two (2) of which are delivered with academic contribution from the University of Exeter and two (2) of which are delivered with academic contribution from Harokopio University.

Semester 2: Two (2) compulsory modules, one (1) of which is delivered with academic contribution from the University of Exeter and one (1) of which is delivered with academic contribution from Harokopio University, and two (2) optional modules.

Semester 3: Two (2) optional modules and the completion of the Master's Dissertation.

- The structure of the Part-time Programme is as follows:

Year 1 of Study (Semesters 1 and 2):

- Two (2) compulsory modules delivered with academic contribution from the University of Exeter.
- Two (2) compulsory modules delivered with academic contribution from Harokopio University.

Year 2 of Study (Semesters 3 and 4):

- Two (2) compulsory modules, one delivered with academic contribution from the University of Exeter and one delivered with academic contribution from Harokopio University.
- Two (2) optional modules selected from the approved list of optional modules.

Year 3 of Study (Semesters 5 and 6):

- Two (2) optional modules selected from the approved list of optional modules.
  - Completion of the Master's Dissertation.
- 
- Students who exceed the maximum period of study shall be withdrawn from the Programme by decision of the Curriculum Committee following the recommendation of the Coordinating Committee.
  - By way of exception, in cases of serious and duly documented circumstances, particularly health-related reasons or other objective difficulties that substantially affect a student's ability to progress normally through the Programme, an extension of the period of study may be granted following a reasoned decision of the Coordinating Committee. In such cases, no additional tuition fees shall be charged beyond the total tuition fee applicable to the Programme (€9,000 or €16,000, as applicable). Specifically, where a student is required to interrupt their studies during a semester for a serious reason, they may, subject to approval by the Coordinating Committee, resume the same semester at a later date without being required to pay tuition fees again for that semester, while remaining liable for the tuition fees of subsequent semesters.
  - In addition, by way of exception, the Coordinating Committee may approve the repetition of a module or an extension of studies in cases where a student has failed a module assessment on three (3) occasions, following consideration of the student's overall academic performance. In such cases, the student shall be required to pay a module repetition fee of six hundred and fifty euros (€650) per module. Of this amount, thirty per cent (30%) shall be allocated to the Special Account for Research Funds (ELKE) of Harokopio University, while the remaining amount shall be allocated to the partner university delivering the module being repeated.
  - Teaching and learning activities within the Programme are delivered entirely through distance learning. The Programme adopts a blended learning approach, combining synchronous and asynchronous online learning (with asynchronous learning not exceeding 25% of the total ECTS credits), independent study, collaborative learning activities, seminars, case-based learning, and supervised research. The Department provides the necessary technical infrastructure to support both synchronous and asynchronous online teaching and learning. The distance learning methods and technologies employed are based on the University's digital infrastructure and are supported by the University's Centre for e-Governance (KED), as set out in the relevant Regulations for Distance Education.
  - The official language of the Programme is English. The Dissertation is also written in English.

## Requirements for Obtaining the Postgraduate Degree

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- The award of the MSc degree requires:
  - successful completion of all modules specified in the programme of studies;
  - completion of a Research Dissertation or a Review Dissertation under the supervision of the appointed supervisor.
- Upon successful completion of the programme, the Programme awards ninety (90) ECTS credits.

## Student Selection Procedure

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1. Each academic year, a call for applications for admission to the Postgraduate Programme is published on the official website of the Programme and the collaborating Institutions. The call may also be disseminated through relevant Ministries, Public Law Entities, Private Law Entities, professional bodies, scientific societies, academic networks, and international educational platforms, with the aim of broadly informing and attracting candidates from Greece and abroad.
2. Interested applicants are entitled to submit an application for admission to the Postgraduate Programme within one (1) month from the publication of the call. Applications and the required supporting documents are submitted electronically to the Secretariat of the Postgraduate Programme. Applications not accompanied by the required certificates and supporting documents shall not be considered during the selection process.
3. Postgraduate Programmes of Harokopio University accept holders of a first-cycle higher education degree awarded by a Higher Education Institution in Greece or an equivalent degree from a foreign institution, provided that the qualification is included in the National Register of Recognised Degree Types and has been issued by a foreign institution included in the National Register of Recognised Foreign Higher Education Institutions or in the list of foreign institutions awarding degrees through franchise agreements with private entities in Greece, on the condition that the entirety of the studies has been completed abroad or at a public Greek Higher Education Institution.
4. The Programme shall admit a minimum of twenty-five (25) and a maximum of one hundred (100) students per intake. The number of available places announced each year is determined following consideration of:
  - i. the capacity of the academic staff and the Institution to effectively support the Postgraduate Programme,
  - ii. the teaching obligations of the academic staff for the satisfactory delivery of undergraduate programmes,
  - iii. the Institution's obligations regarding the smooth implementation of research programmes,
  - iv. the scientific interest of the Programme, and
  - v. the country's needs for specialised scientific personnel.

5. Members of the categories of Special Educational Staff, Laboratory Teaching Staff, and Special Technical Laboratory Staff, who meet the admission requirements and criteria established by the Regulations, may, upon application, be admitted as supernumerary students, limited to one per year and per Postgraduate Programme, provided that the Programme is organised by the Department in which they serve and is relevant to the subject of their degree and professional duties within the Institution.
6. In order to ensure objectivity in the candidate selection process, a Selection Committee is appointed by decision of the Curriculum Committee. The Committee consists of:
  - ii. Two (2) members from Harokopio University (Department of Nutrition and Dietetics), and
  - iii. Two (2) members from the University of Exeter (Department of Public Health and Sport Sciences).

Applications and supporting documents are submitted to the Selection Committee. The responsibilities of the Committee include:

- i. verifying the timely submission of applications,
- ii. reviewing and evaluating all submitted certificates and supporting documents,
- iii. assessing English language proficiency. Adequate knowledge of the English language is demonstrated through one of the internationally recognised qualifications specified by the Programme.
  - These tests valid for 2 years prior to the start of the programme:
    - IELTS Academic (including IELTS Academic Online and IELTS One Skill Retake): overall score of 6.5, with no individual component score below 6.0.
    - TOEFL iBT (including Home Edition, Paper Edition and MyBest scores), for tests taken before 21 January 2026: overall score of 90, with a minimum score of 21 in each component (Writing, Listening, Reading and Speaking).
    - TOEFL iBT (including Home Edition, Paper Edition and MyBest scores), for tests taken on or after 21 January 2026: overall score of 4.5, with no individual component score below 4.
    - Pearson Test of English Academic (PTE Academic): overall score of 67, with no communicative skill score below 64.
    - LanguageCert International ESOL SELT: B2 Communicator, with a minimum score of 39 in each component (Speaking, Writing, Listening and Reading).
    - LanguageCert Academic (Test Centre): overall score of 70, with no individual skill score below 65.
    - INTO Pre-session English: overall score of 65, with no component score below 60.
    - Heriot-Watt Pre-session English: overall score of 60%, with no skill score below 55%.
    - University of Portsmouth Pre-session English: two assessments with scores of 60 or above and two assessments with scores of 65 or above.
    - Study Group Academic English Skills: minimum overall score of 70%, with no individual skill score below 60%.
    - Skills for English SELT: B2 Pass with Merit.

- Duolingo English Test (tests taken up to 30 June 2024): overall score of 120, with at least 120 in Literacy, 110 in Conversation, 125 in Comprehension, and 95 in Production.
  - Duolingo English Test (tests taken on or after 1 July 2024): overall score of 120, with no Integrated Subscore below 110.
- iv. These tests are valid for 7 years prior to the start of the programme:
- A Level or AS Level English Language: Grade D
  - GCSE English Language / Cambridge GCE O Level / Cambridge Overseas O Level (syllabus codes 1120 or 1123): Grade C/4
  - IGCSE English as a First Language: Grade C
  - IGCSE English as a Second Language: Grade B
  - Cambridge Pre-U Literature in English (Principal Subject): P2
  - Cambridge English: Advanced (CAE) or Proficiency (CPE): overall score of 176, with no individual component score below 169
  - Botswana General Certificate of Secondary Education (BTGCSE): Grades 3–6 (Pass); Grade C
  - Caribbean Secondary Education Certificate (CSEC): Grade III
  - European Baccalaureate L1: 6.0
  - European Baccalaureate L2: 7.0
  - European Baccalaureate L3: 7.0
  - French Baccalauréat: Grade 12
  - German Abitur (Leistungskurs / Leistungsfach only): Grade 11
  - Baccalauréat Français International (BFI): Grade 10
  - Hong Kong Diploma of Secondary Education (HKDSE) English Language (Core): Level 4 overall
  - Indian Standard XII English (ISC, CBSE, Maharashtra, Tamil Nadu, Andhra Pradesh, Delhi, Goa, Karnataka, Kerala Boards): 70%
  - Indian Standard XII English (West Bengal Board): 60%
  - International Baccalaureate (IB) Standard Level, English as a First Language (Language A: Literature / Language A: Language and Literature): Grade 4
  - International Baccalaureate (IB) Higher Level, English as a First Language (Language A: Literature / Language A: Language and Literature): Grade 4
  - International Baccalaureate (IB) Standard Level, English Language B: Grade 6
  - International Baccalaureate (IB) Higher Level, English Language B: Grade 5
  - Irish Leaving Certificate: S5
  - Kenya Certificate of Secondary Education: Grade C (4)
  - Malaysian SPM English (1119/O Level paper only, prior to 2021): Grade C
  - Malaysian SPM CEFR-aligned English (from 2021 onwards): Overall B2, with B2 in all individual components
  - Norwegian Vitnemål – Videregående Opplæring: Overall grade 4
  - NCUK English for Academic Purposes (EAP): Grade B overall, with at least Grade C in each component
  - Ontario Secondary School Diploma (OSSD): 75%
  - Canadian Year 12 Secondary School Certificate / High School Diploma (excluding Quebec): Grade C (75%)

- Singapore-Cambridge O Level English: Grade C
- Singapore Integrated Programme Secondary 4 English Language / Language Arts: Grade C
- South African National Senior Certificate / South African Matriculation Certificate: Level 4
- Trinity ISE III (SELT version only): Merit in Writing and Pass in all other components
- Uganda National Examinations Board Certificate of Education (UCE): Grades 3–6 (Pass); Grade C
- United States High School Graduation Diploma: Grade C (75%)
- Zimbabwe GCE O Level English: Grade C
- Zimbabwe GCE Advanced Level English (ZIMSEC): Grade D

v. These tests are valid without restriction:

- West African Examinations Council (WAEC) Senior School Certificate Examination (SSCE) English Language, achieved at the first sitting: Grade C5
- Nigeria National Examinations Council (NECO) Senior School Certificate Examination (SSCE) English Language, achieved at the first sitting: Grade C5.

Students who have completed a previous undergraduate or postgraduate degree programme that was taught and assessed entirely in English may be exempted from the above requirement, subject to approval by the Curriculum Committee. Native speakers of English are also exempt from this requirement.

iv. organising any written and/or oral assessment procedures,

v. ranking candidates based on the combined evaluation of assessment results and candidate qualifications.

7. The final evaluation takes into account:

- the degree classification and/or grades in relevant courses,
- relevant professional and research experience,
- scientific publications and conference presentations.

The above evaluation criteria may be modified by decision of the Curriculum Committee prior to the publication of the annual call for applications.

8. The Selection Committee completes the evaluation process within September and submits its recommendations (ranking list and any additional obligations for specific students to attend undergraduate courses) to the Curriculum Committee for approval and ratification. The list of successful applicants is published in September.

9. Successful applicants may submit, together with their registration application, a request for exemption from tuition fees in accordance with Law 4957/2022, as applicable. Applications not accompanied by the legally required supporting documentation shall not be considered by the Selection Committee. Applicants receiving scholarships from other sources are not eligible for tuition fee exemption.

10. Registration of successful applicants takes place within September.



## Registration

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- Student status is acquired upon enrolment in the Programme. Attendance is compulsory for all students, meaning enrolment and participation in all compulsory and optional compulsory modules as required by the programme of studies.
- Registration is compulsory and must be completed before the deadline shown in the academic activities calendar. Full-time students enrol each semester; part-time students enrol each year. Failure to register by the deadline results in inability to attend the current semester. In this case, continuation of studies requires a decision by the Coordinating Committee.

## Rights of Postgraduate Students

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- Postgraduate students of the Programme are members of the University Community. Mutual respect between teaching staff and students is a fundamental prerequisite for successful learning, teaching and research.
- The primary right of students is the right to learning.
- Upon enrolment in the Programme, postgraduate students are entitled to:
  - to be informed in a timely and adequate manner about all matters concerning their academic life,
  - to freely express their views on educational and other matters within the framework of academic freedom and with due respect for the rules of academic ethics,
  - to evaluate the educational work, the quality and effectiveness of administrative services, and the actions of the Institution's administration, as provided by law,
  - to be served by the administrative services of the Institution in a timely and effective manner,
  - to make use of the Institution's facilities in accordance with its regulations,
  - to enjoy the social and other benefits deriving from their status as students of Harokopio University,
  - to submit reports and requests to the competent bodies of the Institution regarding matters that directly concern them, such as grade review/reassessment requests and the revision of decisions relating to disciplinary matters and issues concerning the student community to which they belong,



- to be represented in the collective bodies and committees of the Institution, as provided by the applicable legislative framework, the Organisation, the Internal Regulations, and the decisions of the Institution, and to participate actively in all activities of the academic community,
  - to participate in student associations or other organisations and clubs operating within the framework of the Institution, in compliance with the Institution's regulations,
  - to participate in remunerated activities of the Institution,
  - to apply for and obtain exemption from tuition fees, in accordance with the terms and procedures established by the applicable provisions during the relevant academic year,
  - to receive scholarships, whether merit-based or non-merit-based, under the terms and conditions defined in each case,
  - to gain access to digital services or educational platforms of collaborating institutions, in accordance with the applicable academic and technical specifications, and
  - to formally certify additional (non-compulsory) skills acquired during their studies, which are not included in the final degree classification and may be recorded in the Diploma Supplement.
- Each postgraduate student has the right to request, once, a suspension of studies for a period not exceeding two (2) consecutive semesters for full-time students or one (1) year for part-time students. The period of suspension is not counted towards the maximum permitted duration of studies. No additional tuition fees are charged during suspension. Suspension is granted by decision of the Curriculum Committee following a recommendation from the Coordinating Committee.
- Students wishing to withdraw from the Programme must submit a written declaration to the Programme Director. Student status ceases by decision of the Curriculum Committee. In all cases of withdrawal, tuition fees already paid are not refunded.

## Obligations of Postgraduate Students

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- Upon enrolment, postgraduate students accept the following obligations:
  - the operational rules of the Programme as set out in the present Regulation and decisions of Programme bodies, and acknowledge the right of the Curriculum Committee to decide on their withdrawal in the event of definitive failure;
  - to stay informed about the programme of studies and the academic calendar;
  - the obligations set by each module leader regarding the teaching and assessment management of their module;
  - financial obligations, and acknowledge the right of the Curriculum Committee to decide on their withdrawal in the event of non-compliance.
  - to contribute to the good reputation of the Institution through their academic, cultural and collective activities.
- Participation in all educational activities is compulsory. Attendance issues are addressed initially by the module leader and subsequently by the Programme Director and the

Coordinating Committee. Classes scheduled on public holidays may, at the discretion of the instructor, be rescheduled and conducted on a different date.

- In both the full-time and part-time study modes, only students who have successfully completed and submitted the compulsory coursework and educational activities specified in the approved module descriptor of the respective module shall be eligible to participate in the module assessment.
- In the event of incomplete completion and submission of the compulsory coursework and learning activities in one (1) module, the Coordinating Committee of the MSc Programme may permit a single opportunity either to repeat the module from the beginning or to complete the outstanding module requirements through an alternative arrangement determined on a case-by-case basis by the Coordinating Committee, following a recommendation from the Module Leader.

Where repetition of a module is approved, the student shall be required to pay a module repetition fee of six hundred and fifty euros (€650) per module. Of this amount, thirty per cent (30%) shall be allocated to the Special Account for Research Funds (ELKE) of Harokopio University, while the remaining amount shall be allocated to the partner university delivering the module being repeated.

In the event of incomplete completion and submission of the compulsory coursework and learning activities in more than one module, the Programme Director shall inform the Coordinating Committee, which shall submit a recommendation to the Curriculum Committee either for the student to repeat the relevant modules or for the student's exclusion from the MSc Programme.

## Code of Conduct for Students

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- A fundamental rule of academic ethics for students is the avoidance of plagiarism in the preparation of assignments undertaken during their studies. Plagiarism constitutes a direct violation of the applicable intellectual property legislation, and its detection entails serious disciplinary offences and sanctions for students who commit such misconduct.
- The following are strictly prohibited:
  - the use of third parties' intellectual works and their presentation by students as their own;
  - the presentation of work completed collaboratively with other students as individual work;
  - the submission, in whole or in part, of work that was completed for previous academic or research requirements as fulfilment of different or new academic or research requirements;
  - any form of copying or collaboration with third parties during any examination procedure, as well as the use of aids, notes or electronic devices, unless explicitly permitted by the examiner;
- The use of Artificial Intelligence (AI) tools is permitted exclusively for supportive and educational purposes, in accordance with the instructions of the course coordinator and

the principles of academic ethics. Students are required to explicitly declare the use of AI tools in the assignments they submit. The use of AI for the generation or submission of work presented as exclusively personal original work without appropriate acknowledgement or approval is not permitted, nor is any use that violates the rules of academic integrity.

- Audio recording, video recording or photography of teaching staff's lectures by students is prohibited except with the written consent of the lecturer and all students present.

## Academic Advisor

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1. The Academic Advisor provides guidance and support to students throughout their programme of studies. The main responsibilities of the Academic Advisor are:
  - (a) to provide advisory support to students in order to help them complete their studies in the most rational and effective manner,
  - (b) to propose solutions to problems that may arise and to refer students to the appropriate University support structures depending on the nature of the issue or difficulty encountered (e.g. family, psychological, financial, or health-related matters), and
  - (c) to provide advice and recommendations regarding the student's future academic and professional career development.
2. Advisors are appointed, for each student, by the Curriculum Committee following a recommendation from the Coordinating Committee, within one (1) month of their enrolment. Academic Advisors may be members of academic or laboratory teaching staff of the Department.
3. The number of Programme students is equally distributed among the academic and laboratory teaching staff members of the Department and assignment is made on a randomised basis.
4. The Academic Advisor assigned to each student remains the same until the completion of studies. The responsibilities of the Academic Advisor include, indicatively:
  - i. provides information on the operation and organisation of the Postgraduate Programme and the available facilities,
  - ii. informs students about the course content, proposes more effective study methods, and may recommend attendance of undergraduate courses where considered necessary to address learning gaps,
  - iii. advises students on the selection of the direction of their postgraduate dissertation so that it aligns with their personal interests and future aspirations and can be completed within the prescribed period of study,
  - iv. discusses issues relating to the student's relationship with teaching staff, administrative personnel, or fellow students,
  - v. provides information regarding mobility opportunities for studies or internships in Greece or abroad,
  - vi. provides information regarding opportunities for further doctoral studies at the Department or at another Higher Education Institution in Greece or abroad,

- vii. discusses issues related to professional career prospects, and
  - viii. informs students about the services provided by Harokopio University to support their studies.
5. The Academic Advisor collaborates with the Coordinating Committee, teaching staff, administrative personnel and OMEA on issues arising in the course of their duties, always following the University's personal data management policy.
  6. Upon appointment, the Academic Advisor contacts their assigned students and provides their contact details and preferred means of communication. Consultations may be held at the student's request or at the initiative of the Academic Advisor, individually or in groups on matters of common interest. Consultations are conducted remotely. The Academic Advisor ensures at least one (1) consultation per semester with each assigned student. Following a consultation, if issues concerning the Programme's general operation arise, the Academic Advisor prepares a brief report submitted to the Programme Director.

## **Mobility of postgraduate students**

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- Within the framework of the international academic collaboration of the MSc Programme, optional mobility opportunities may be offered to students exclusively in relation to the preparation of the Dissertation.
- Participation in mobility activities is optional and does not constitute a prerequisite for the successful completion of the MSc Programme, which is delivered entirely online.
- The specific terms of participation, the duration of mobility, and the procedures for academic recognition shall be determined by the competent bodies of the MSc Programme and the applicable interinstitutional cooperation agreements in force.

## **Complaints and Objections Mechanism**

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1. The Postgraduate Programme applies a Regulation for the Operation of the Student Complaints and Appeals Management Mechanism. This mechanism contributes to the identification and resolution of issues arising during the operation of the Programme, seeks to evaluate and analyse their root causes, and aims at the continuous improvement of the overall academic experience of students. The mechanism does not replace or substitute the operation of other bodies or services of the Institution (e.g. Disciplinary Bodies, the Student Ombudsperson, the “Aikaterini Maridaki-Kassotaki” Student Support Structure, etc.).
2. A “Complaint” is defined as the dissatisfaction that a student may express regarding the quality of the academic and administrative services provided within the framework of the Programme’s operation. Dissatisfaction must be expressed personally by the student, either in writing or orally, and may not be submitted on behalf of a third party. An “Appeal”

is defined as a written statement of objection or doubt submitted by a student regarding a pending or problematic resolution of an issue affecting them.

3. The competent authority responsible for monitoring and ensuring the proper implementation of the Regulation is the Director of the Programme. In cases where the Director considers that the issue exceeds their authority, it may be referred to the Coordinating Committee of the Programme.
4. Throughout all stages of the procedure, all involved parties are obliged to ensure the protection and confidentiality of personal data, in accordance with the applicable legislation in force at the time.
5. The Complaints and Appeals Management Mechanism operates through the following stages:

**Stage 1:** Resolution of the Complaint is initially sought through direct remote dialogue and discussion between the involved parties. The discussion may also take place in the presence of the Academic Advisor. Following the discussion, if the proposed solution is satisfactory to both parties, the matter is considered resolved and no further action is required. If the issue is not resolved, Stage 2 is followed.

**Stage 2:**

- The Complaint or Appeal is submitted in writing to the Secretariat of the Programme within a reasonable period from the occurrence of the issue. The submitted form must clearly and accurately describe the factual circumstances of the case, as well as any attempts made to resolve the matter during Stage 1. The form may be accompanied by supporting documentation and is formally registered by the Secretariat of the Programme.
  - The Secretariat of the Programme forwards the Complaint or Appeal, together with any supporting documentation, to the Director of the Programme, who undertakes the appropriate actions for its investigation and resolution. Depending on the nature of the matter, the Director may invite the student to present their views. The Director informs the Coordinating Committee of the Programme regarding the manner in which the Complaint or Appeal was addressed.
  - The Coordinating Committee of the Programme may refer the matter to, or request the assistance of, another competent body or service of the Institution if it considers that the issue exceeds its authority or requires different handling.
  - An Appeal submitted by a student may either be accepted or rejected. In the event of rejection, the resubmission of an Appeal concerning the same matter is not permitted.
  - If the student continues to object to the outcome of the resolution process, they may submit a written request to the competent body of the Institution for further review.
6. Upon completion of the procedure, the student is informed in writing by the Secretariat of the Programme regarding the final decision on the matter. A third party may also be granted the right to receive information concerning a resolved case, following submission of a request, provided that they can demonstrably establish a legitimate legal interest.

## Teaching Staff

- Teaching duties in the Programme are assigned by decision of the Curriculum Committee, following a recommendation from the Coordinating Committee, to the following categories of teaching staff:
  - members of the academic staff, special educational staff, laboratory teaching staff, and special technical laboratory staff of the participating Departments or of other Departments of the same or another Higher Education Institution or Military Higher Education Institution, with additional employment beyond their statutory obligations, where the Postgraduate Programme charges tuition fees,
  - emeritus professors or retired members of academic staff of the participating Departments or other Departments of the same or another Higher Education Institution,
  - affiliated professors,
  - appointed lecturers,
  - visiting professors or visiting researchers,
  - researchers and specialised functional scientists of research and technological bodies under Article 13A of Law 4310/2014 (Government Gazette A' 258) or of other research centres and institutes in Greece or abroad,
  - scientists and professionals of recognised standing possessing specialised knowledge and relevant experience in the scientific field of the Postgraduate Programme.
- 2. All teaching staff must hold a doctoral degree, unless their subject area is of exceptional and indisputable distinctiveness for which doctoral research is not possible or customary.
- 3. Members of academic staff, special educational staff, laboratory teaching staff, and special technical laboratory staff of the Department may participate in Postgraduate Programmes only provided that they fulfil their minimum statutory teaching obligations. Exclusive employment of academic staff members in postgraduate programmes of the Department or School is not permitted.
- 4. The Curriculum Committee, following a recommendation of the Coordinating Committee, appoints for each course up to two responsible instructors from among members of academic staff or laboratory teaching staff of the Department or other Departments of the Institution, emeritus professors of the Department, visiting professors of the Department or other Departments of the Institution, affiliated professors, or appointed lecturers, where required by the subject matter of the course. The course coordinator is responsible for:
  - organising the course content and lectures,
  - organising, updating, and providing educational material, including material uploaded to the Moodle platform,
  - supervising/guiding postgraduate student assignments within the framework of the course and evaluating students,
  - submitting to the Coordinating Committee a proposal regarding the list of course lectures and instructors, accompanied by a short curriculum vitae for instructors who are not members of the Department's teaching staff.
- 5. The Coordinating Committee examines the list of instructors and submits recommendations to the Curriculum Committee regarding teaching assignments, taking into account teaching, research, and specialised professional experience. Where deemed appropriate, the Coordinating Committee may recommend the publication of a call for expressions of



interest for the recruitment of specialised scientists. The call is published on the Department's website. The selection of instructors is carried out by the Curriculum Committees of the two universities. Based on the minutes of the selection committee, the Coordinating Committee recommends to the Curriculum Committee the assignment of teaching for all or part of a course. Teaching assignments are approved by decision of the Curriculum Committee, in accordance with the applicable legislation.

6. In appointing module leaders and teaching staff, the Coordinating Committee takes into account student evaluations.
7. By decision of the Curriculum Committee, following a recommendation by the Director of the Postgraduate Programme, distinguished scientists from abroad holding positions or qualifications equivalent to those of professor or researcher at a research centre, artists, or scientists of recognised standing with specialised knowledge or relevant experience in the field of the Postgraduate Programme may be invited as visiting scholars in order to meet the educational needs of the Programme. Invitations to visiting scholars from abroad may only be made where teaching duties are assigned to them, in accordance with the procedures and provisions specified in the Postgraduate Studies Regulations and applicable to the assignment of teaching duties to members of academic staff of the Institution.
8. The right to supervise postgraduate dissertations is granted to members of academic staff and laboratory teaching staff, emeritus professors or retired members of academic staff of the participating Departments or other Departments of the same or another Higher Education Institution, affiliated professors, appointed lecturers, visiting professors, or visiting researchers of the collaborating universities, provided that they hold a doctoral degree. By decision of the competent body of the Postgraduate Programme, dissertation supervision may also be assigned to members of academic staff and laboratory teaching staff of the Department who have not undertaken teaching duties within the Programme.
9. All categories of teaching staff may be remunerated exclusively from the resources of the Postgraduate Programme. Payment of remuneration or any other benefit from the state budget or the public investment programme is not permitted. The amount of remuneration for each instructor is determined by decision of the Curriculum Committee following a recommendation of the Coordinating Committee. In particular, instructors who are members of academic staff may receive additional remuneration for work offered to the Postgraduate Programme, provided that they fulfil their minimum statutory obligations, as defined in paragraph 2 of Article 155 of Law 4957/2022 (Government Gazette A' 141). The same provision applies analogously to members of special educational staff, laboratory teaching staff, and special technical laboratory staff, provided that they fulfil their minimum statutory obligations.

## Obligations of Teaching Staff

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- Each member of teaching staff in the Programme has the obligation:
  - i. Understand the fundamental principle that the Programme places the developing professional and academic identity of the student at its centre, and to respect each student without prejudice or discrimination.

- ii. Uphold the value and integrity of scientific inquiry and research, clearly defining and promoting appropriate pathways for the acquisition of scientific knowledge.
- iii. Continuously expand their own knowledge and remain up to date with developments in their field of expertise in order to provide students with interdisciplinary, contemporary, and research-informed education.
- iv. Be approachable and cooperative with postgraduate students and share their knowledge and experience in an equitable and inclusive manner.
- v. Provide a clear module plan, including learning objectives, guidance, reading materials, and appropriately developed content in accordance with international academic standards, ensuring that the curriculum adequately addresses the scientific requirements of the subject area.
- vi. Communicate the results of examinations, coursework, practical assignments, and other assessments within fifteen (15) days of their completion and provide students with access to their assessed work following marking.
- vii. Assume primary responsibility for approving and supervising the research topic of each postgraduate student under their supervision and make every reasonable effort to support the successful completion of the research project, irrespective of other academic commitments.
- viii. Inform the Programme Director promptly if, for any reason, they are unable to continue supervising a student, so that alternative supervisory arrangements may be made.
- ix. Participate in and support the educational and research quality assurance and evaluation procedures established by the MSc Programme.
- x. Make themselves available to students for whom they serve as Academic Advisors and, where appropriate, refer students to the relevant University services or Programme bodies when issues arise that fall outside their remit.
- xi. Module Leaders are responsible for maintaining records of student engagement and participation in their modules and for informing the Programme Administration and the Programme Director in a timely manner of cases of insufficient engagement and participation by students. Module Leaders shall submit the relevant records at the end of each academic semester for full-time students or at the end of each academic year for part-time students, as applicable.

## Assessment and Examination Procedure

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- There are three examination periods at Harokopio University postgraduate programmes: the winter semester period, the spring semester period, and September, unless otherwise provided in the founding decision. No teaching activities shall take place during these examination periods.



- The winter examination period begins within the second fortnight of January; the spring examination period within the first fortnight of June; and the September period at the beginning of September. All three periods last from two (2) to four (4) consecutive weeks. Where the start date of a postgraduate programme's modules differs significantly from the standard academic year, examination period dates may be adjusted accordingly.
- Module assessments are conducted during the examination period of the Autumn or Spring Semester for students enrolled in the Full-Time Study Mode, and during the Spring Semester examination period for students enrolled in the Part-Time Study Mode. Reassessment opportunities are offered either during the September examination period or during the semester in which the module is next delivered, in accordance with the academic calendar and the decisions of the MSc Programme.
- Overall responsibility for the orderly conduct of examinations lies with the Programme Director, who, supported by the Programme Secretariat, Department Head of Secretariat and teaching staff, ensures the timely appointment of invigilators and the necessary conditions for the integrity of examinations.
- The examination timetable is drawn up by the Programme Director and published by the Programme Secretariat at least two (2) weeks before the start of examinations, indicating dates and times.
- In the event of an examination being unable to proceed for any reason, the Department President and Secretariat are notified and a replacement date is arranged within the examination period.
- The examination procedure is the responsibility of the module leader and is communicated to students at the start of the module. Examination questions are set by the relevant teaching staff; in their absence, questions are set by another academic staff member selected by the Curriculum Committee.
- Examinations may be conducted through a combination of the following methods:
  - a. written assignment and/or exercises;
  - b. oral or written examination using distance methods.
- All information relating to module examinations, including details regarding students' online access and connection procedures, shall be communicated through the respective module area on the Moodle Learning Management System (LMS). Students are responsible for enrolling in their modules in order to receive all relevant information concerning both the delivery of teaching and the conduct of examinations.
- Participation in remote examinations shall take place electronically through videoconferencing systems that ensure user authentication through the Harokopio University user directory and comply with basic security requirements concerning content management. The University shall take all reasonable measures to ensure the uninterrupted operation of such systems under conditions of high demand.
- Access to all the above platforms shall be provided through the institutional credentials assigned to students and teaching staff within the Harokopio University domain (xxx@hua.gr). Students are required to maintain visual contact with the examiner and/or

invigilator throughout the examination and must have a functioning camera, speakers, and microphone available for use.

- In addition to logging in through their institutional account, students shall be required, prior to the commencement of the examination, to verify their identity via video by presenting their student identification card. Strict adherence to the scheduled examination start time shall apply.
- The invigilation of students participating in remote examinations shall be conducted through continuous visual monitoring by examiners and invigilators. It is recommended that, in addition to the examiner, at least one invigilator be present. Students must remain continuously connected to both the internet and the remote examination platform and maintain uninterrupted visual contact with the examiner and/or invigilator throughout the examination.
- The duration of any written examination shall not exceed three (3) hours under any circumstances. Examinations shall be conducted under the responsibility of the relevant lecturer.
- Remote oral examinations may be supported by, or combined with, the use of asynchronous learning platforms, such as the institutional Moodle LMS. By way of example, the Moodle “Quiz” tool enables the use of closed-ended questions (e.g., multiple-choice, true/false questions) as well as open-ended questions. Equivalent tools supporting multiple-choice, list-based, checkbox, and essay-type questions may also be used, provided that they allow student authentication through institutional credentials.
- Special arrangements shall be made for the assessment of students with Special Educational Needs (SEN). Students who, upon enrolment, submit official documentation issued by a competent public authority certifying the nature of their disability and recommending an appropriate examination method shall be assessed accordingly.
- The use of plagiarism-detection software, such as Turnitin, is strongly encouraged for the evaluation of assignments and open-ended examination questions. The development and use of extensive question banks from which examination questions may be randomly selected is also recommended. Such measures contribute significantly to ensuring the integrity and reliability of examinations, the protection of personal data, and the equal treatment of students.
- In the event of disruption to a student's connection due to force majeure or technical difficulties, a supplementary oral examination may be arranged at a later date at the discretion of the lecturer responsible for the module.
- In the event of a technical failure on the examiner's side (for example, a widespread malfunction of the synchronous or asynchronous learning platform), the examination may be rescheduled under the responsibility of the lecturer.
- Assessment through written assignments and/or practical exercises may be supplemented by an oral presentation of the submitted work. Assignments may either be announced and assigned during the teaching period or be issued on the day of the examination. In such cases, students shall be required to upload their work to Moodle within a reasonable timeframe specified by the lecturer, ranging from a few hours to a one-day project submission period.

- Protection of Personal Data:

Students' personal data shall be retained only for the period strictly necessary to ensure student identification and to safeguard the integrity and reliability of examinations. Consequently, oral examinations shall under no circumstances be recorded. The Module Leader shall maintain a separate register containing only the information strictly necessary for identification purposes, namely the student's full name, registration number, and institutional account used to access the examination. This register, together with students' examination scripts and assessment records, shall be retained by the Module Leader until the finalisation of grades and, in any event, for a period of twelve (12) months. Upon expiry of this period, the register and examination materials shall cease to have any legal or academic validity and shall be securely destroyed, unless they are required in connection with pending criminal, disciplinary, administrative, or other legal proceedings.

It should be noted that personal data are also collected and processed during examinations conducted in person for the purposes of student identification. Accordingly, in the context of remote examinations, the collection and processing of personal data shall be organised, limited, and assessed for compliance with data protection legislation in a manner analogous to in-person examinations, while taking into account the additional requirements necessary to ensure academic integrity, reliability, and the protection of individual rights in a digital environment. In light of the above, the University has determined that methods requiring the recording, storage, or processing of students' image data during examinations shall not be used, as such methods are considered to raise greater concerns regarding personal data protection than the benefits they may provide in safeguarding examination integrity and reliability.

- Reliability and Integrity of Examinations:

The identity verification and invigilation of students participating in remote written examinations shall be conducted through continuous visual monitoring by an adequate number of invigilators, each responsible for supervising a small group of students. Each invigilator shall verify the identity of students by requiring the presentation of their student identification card and shall subsequently supervise them continuously throughout the examination. Where a student loses internet connectivity or visual contact with the invigilator is interrupted, the examiner may, at their discretion, terminate the examination attempt and require the student to undertake a new examination at a predetermined time. The simultaneous use of mobile phones during examinations is strictly prohibited. The presence or use of a second computer or electronic device within the examination environment is likewise prohibited. The reliability of remote examinations may be enhanced through measures such as providing students with only the time strictly necessary to complete the assessment, requiring submission of assessment materials through Moodle within a predefined period, and releasing examination questions in stages where appropriate. During oral examinations, the lecturer shall ensure that they are not alone with the student being examined. The recording, publication, posting on websites, disclosure to third parties, transmission, or distribution by any means of all or part of the examination process is strictly prohibited and shall constitute a serious disciplinary offence.

- Assessment and grading in each module are the sole responsibility of the Module Leader and shall be conducted independently of all other modules. The final grade awarded in a module shall be based on an objective evaluation of the student's performance in the specific module. Final module grades shall be determined through an overall assessment

of student achievement across designated assessment components (e.g., assignments, examinations, presentations), in accordance with the assessment criteria communicated by the lecturer at the beginning of the teaching period and clearly published within the virtual learning environment.

- The minimum passing grade for any module shall be 6.0 on a scale of 0–10. In the event of failure, the provisions governing reassessment opportunities and module repetition, as set out in these Regulations, shall apply.

Failure shall be deemed to include any of the following:

- a final module grade below 6.0 (out of 10);
  - failure to complete the required module obligations (assignments, presentations, or other compulsory activities) during the teaching period in which the module is offered;
  - failure to participate in the module examination.
- Within fifteen (15) days of the completion of a module examination, the examiner shall publish the results through the virtual learning environment. Following the publication of results, students may review their examination scripts within five (5) days, at a date and time specified by the Module Leader. Within fifteen (15) days of the completion of the examination, the examiner shall submit and finalise grades in the University's student records system.
  - Appeals concerning module grades may be submitted within fifteen (15) days of the publication of results. Appeals shall be considered by a committee appointed by the Coordinating Committee. Any re-marking or grade revision shall be undertaken only following a decision of the Curriculum Committee.
  - In the event of failure in a module assessment, a postgraduate student shall be entitled to up to two (2) additional assessment attempts for the relevant module, in accordance with the academic calendar and the procedures of the MSc Programme.

Where a student fails to successfully complete a module after three (3) attempts in total, the case shall be reviewed by the Coordinating Committee of the MSc Programme following a recommendation from the Module Leader. Having considered the student's overall academic performance and progression, the Curriculum Committee may decide either:

(a) to recommend the student's withdrawal from the Programme following academic review; or

(b) to approve, on an exceptional basis, the repetition of the module.

Where permission is granted to repeat a module, the student shall be required to pay a module repetition fee of six hundred and fifty euros (€650) per module. Of this amount, thirty per cent (30%) shall be allocated to the Special Account for Research Funds (ELKE) of Harokopio University, while the remaining amount shall be allocated to the collaborating university responsible for delivering the repeated module.

## Dissertation

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- Completion of a dissertation is compulsory. The dissertation is completed individually and constitutes an independent, systematic scientific approach to and analysis of a topic, drawing on available technology and existing literature and applying knowledge and skills acquired during the course of studies.
- The language of the dissertation is English.
- The Programme provides for two types of dissertation:
  - **Research Dissertation:** A Research Dissertation constitutes an original piece of research. During the preparation of a research-based dissertation, students are required to undertake the analysis of primary or secondary data. Holders of an MSc degree awarded on the basis of a Research Dissertation are eligible to apply for admission to a doctoral programme leading to the award of a Doctoral Degree (PhD).
  - **Review Dissertation:** A Review Dissertation consists of an extensive and critical review of the literature on a scientific topic of significant interest, or another substantial scholarly work, but it is not regarded as an original research contribution. Holders of an MSc degree awarded on the basis of a Review Dissertation are not eligible for admission to a doctoral programme leading to the award of a Doctoral Degree (PhD), unless they satisfy the requirements specified in the Regulations Governing Doctoral Studies.
- The dissertation supervisor must be a member of the teaching staff of the MSc Programme, academic staff or laboratory teaching staff of the Department of Nutrition and Dietetics Science of Harokopio University or a member of the academic staff of the Department of Public Health and Sport Sciences, Medical School, at University of Exeter. By decision of the Curriculum Committee, the supervision of Master's dissertations may be entrusted to members of the academic staff and laboratory teaching staff of the participating Departments, even if they have not been assigned teaching duties within the MSc Programme. The supervisor serves as a member of the three-member examination committee. The other two members of the examination committee may be: (a) members of academic staff, special educational staff, or laboratory teaching staff of the Department or of other Departments of the same or another Higher Education Institution or Military Higher Education Institution, (b) emeritus professors or retired members of academic staff of the Department or other Departments of the same or another Higher Education Institution, (c) visiting professors, (d) researchers and specialised functional scientists of research and technological bodies under Article 13A of Law 4310/2014 (Government Gazette A' 258) or other research centres and institutes in Greece or abroad. The members of the committee must possess the same or a related scientific specialisation to the subject area of the Programme.
- The Coordinating Committee and the supervisor are responsible for monitoring the progress of the student's dissertation.
- Research activities conducted as part of the MSc Dissertations may be supported by national and European funding schemes, competitive research grants, and resources



generated from the Programme's tuition fees, with the objective of strengthening students' research capacity, academic development, and engagement with high-quality research.

- Before the end of the first semester, or the first academic year for full-time and part-time students respectively, all members of academic staff and laboratory teaching staff of the Department submit their research interests and/or proposed dissertation topics to the Secretariat of the Postgraduate Programme, which then circulates them to students of each specialisation pathway. Members of academic staff and laboratory teaching staff present their research interests and proposed dissertation topics to postgraduate students on a predetermined date.
- Applications from students are submitted by the end of May of Year 1 (full-time) or the end of February of Year 2 (part-time) to the Coordinating Committee. The application, co-signed by the proposed supervisor, states the proposed dissertation title, the proposed supervisor and three-member committee, and includes a summary of the proposed work. Final assignment of dissertations is made by the Curriculum Committee following a recommendation from the Coordinating Committee.
- Each member of academic staff or laboratory teaching staff may supervise up to three dissertations per study cycle and programme mode (full-time/part-time).
- The preparation of the dissertation must comply with the Research Regulations of Harokopio University. In addition, research protocols involving experiments on humans or laboratory animals must receive approval from the Research Ethics and Deontology Committee of the University.
- Dissertation Writing: Following the completion of data collection and analysis, the dissertation is written in English. The dissertation must clearly and specifically present the research problem, the nature and significance of the study, the review of existing literature, the methodology applied, the research findings, discussion of the findings, and recommendations for further investigation of the topic. Detailed guidelines for dissertation preparation are provided in Annex A of the Programme Handbook.
- Public Presentation and Examination of the Dissertation:
  - Upon completion of the dissertation and with the approval of the supervisor, the student submits copies of the dissertation to the members of the three-member examination committee and submits to the Secretariat of the Postgraduate Programme an application accompanied by an abstract of the dissertation and a short curriculum vitae. Students are entitled to defend their dissertation provided that they have fulfilled their financial obligations and successfully completed all courses.
  - The public defence of the dissertation is scheduled by the supervisor within the dates specified in the Academic Activities Calendar. The Secretariat announces the event electronically to the academic community.
  - Final evaluation and assessment of the dissertation are conducted by the three-member examination committee. Evaluation is based on the following criteria:
    - (a) the completeness and quality of the content,
    - (b) the degree of understanding of the topic and response to its requirements,
    - (c) its positioning in relation to current technology and international literature, and
    - (d) the successful public defence and examination.

- The dissertation grade is awarded as an integer and is calculated as the average of the examiners' grades. Approval requires the positive vote of at least two (2) members of the examination committee. The minimum passing grade for the dissertation is 6.0 out of 10.
  - In the event that the dissertation is rejected, the Coordinating Committee sets a new evaluation date at least three (3) months after the initial examination. During this period, the student is required to make any revisions requested by the examination committee.
- The postgraduate dissertation constitutes the original work of the student. Copyright of the dissertation is jointly and equally shared between the postgraduate student, the supervisor, and the collaborating universities.
- The student is required to submit one (1) electronic copy of the approved dissertation, incorporating any corrections requested by the examination committee, to the Institutional Repository of the Library and Information Centre of Harokopio University. Submission to the Library requires the written consent of the supervisor. Postgraduate dissertations are uploaded to the University Library website.
- The Postgraduate Programme reserves the right to publish students' dissertations on the Department website and/or in openly accessible digital repositories in which the Department participates.

## Excellence Awards

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- The Programme awards excellence prizes to postgraduate students achieving the highest grades. Specifically:
  - Full-time Programme: four (4) excellence awards for students achieving the highest grades in the 1st semester, and four (4) excellence awards for students achieving the highest grades in the 2nd semester.
  - Part-time Programme: four (4) excellence awards for students achieving the highest grades in Year 1, and four (4) excellence awards for students achieving the highest grades in Year 2. Only students who have passed all examined modules in the February or June examination periods are included in the ranking, provided they have also passed all modules of previous semesters/years.
- Excellence awards are accompanied by monetary prizes determined by the Coordinating Committee.
- The conditions for the award of excellence prizes are determined by decision of the Curriculum Committee following a recommendation from the Coordinating Committee.



## Grading and Degree Classification

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- The final degree grade results from the student's grades in modules, the Dissertation, and all activities provided for in the programme, weighted according to the weighting coefficient of each academic activity. The minimum passing grade is six (6). Assessment is based on a ten-point scale (with one decimal place accuracy) according to the following grading scale:  
Excellent: 8.45 – 10.0  
Very Good: 6.95 – 8.44  
Good: 6.0 – 6.94
- Following completion of the taught component, examination of the dissertation and fulfilment of any other obligations, the student receives the postgraduate degree. The degree grade is calculated as the weighted mean of module grades and the dissertation grade according to the following formula:

$$B\Pi = \frac{\sum_{i=1}^n a_i BM_i}{\sum_{i=1}^n a_i}$$

where  $B\Pi$  = degree grade,  $n$  = number of modules including the dissertation,  $a_i$  = weighting coefficient of each module/dissertation, and  $BM$  = module/dissertation grade.

## Completion of Studies

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- Students complete their studies and are conferred their degree when: (a) they have successfully passed all modules required by the programme of studies and have accumulated 90 ECTS credits; (b) they have submitted their dissertation to the Library incorporating the corrections of the supervisor and the three-member examination committee.
- The date of conferral of the degree is defined as the date of completion of the dissertation examination of the examination period in which the student participated.
- Students who have completed their studies in accordance with the above are entitled to a certificate of completion of studies.

## Degree Award and Graduation Ceremony

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- The Master of Science degree (MSc) is a public document whose form is determined by decision of the Senate. The degree is awarded within three (3) months of the successful completion of studies, at a special graduation ceremony before the Rectoral Authorities and the Department Head or their legal deputies.
- The graduation ceremony is held following the conclusion of the June, September and January/February examination periods. The date is decided by the Rectoral Authorities and is posted on the University website at least three (3) weeks in advance.
- To participate in the graduation ceremony and receive the MSc degree, graduates submit a graduation application to the Programme Secretariat at dates announced by the Secretariat. Graduates must have resolved any pending obligations by the application date.
- Participation in the graduation ceremony may be conducted either in person at the premises of Harokopio University or remotely through certified digital platforms, particularly for international students or in cases of justified inability to attend in person, in accordance with the applicable regulations, procedures, and decisions of the MSc Programme and the University.
- During the graduation ceremony, graduates shall be called forward in alphabetical order.
- The graduation ceremony is not a constitutive condition of the successful completion of studies. For special reasons, upon application to the Programme Secretariat examined by the Coordinating Committee, a graduate may request the award of the MSc without participating in the graduation ceremony, provided they have submitted a graduation application and have resolved any pending obligations.
- The MSc degree is drawn up in English. The graduate receives the degree on parchment, two (2) certified copies and two (2) official academic transcripts.
- The postgraduate programme issues a Diploma Supplement in English in accordance with Article 15 of Law 3374/2005. The Diploma Supplement records additional (non-compulsory) skills acquired by the student during their studies which are not reflected in the final grade.

## Tuition Fees and Exemptions

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1. The tuition fees for the Programme are as follows:
  - **€9,000 per student for the entire Programme** for students classified as **EU/Greece students**, in both the Full-Time and Part-Time Study Modes. Tuition fees shall be payable as follows:

### Full-Time Study Mode:

- €3,000 at the beginning of Semester 1;
- €3,000 at the beginning of Semester 2;
- €3,000 at the beginning of Semester 3.

**Part-Time Study Mode:**

- €3,000 at the beginning of Year 1;
- €3,000 at the beginning of Year 2;
- €3,000 at the beginning of Year 3.
- **€16,000 per student for the entire Programme for International Students (non-EU students)**, in both the Full-Time and Part-Time Study Modes. Tuition fees shall be payable as follows:

**Full-Time Study Mode:**

- €5,500 at the beginning of Semester 1;
- €5,500 at the beginning of Semester 2;
- €5,000 at the beginning of Semester 3.

**Part-Time Study Mode:**

- €5,500 at the beginning of Year 1;
- €5,500 at the beginning of Year 2;
- €5,000 at the beginning of Year 3.

Any bank charges, transfer fees, currency conversion costs, or other transaction-related expenses shall be borne exclusively by the student.

Under no circumstances shall tuition fees already paid be refunded in the event of a student's withdrawal, exclusion, or removal from the Programme.

2. Any deposit paid to secure a place in the Programme, where applicable, is non-refundable following the student's acceptance of the offer, except in cases where the Postgraduate Programme does not operate.
3. In the event of an approved suspension of studies, tuition fees already paid may be transferred to a subsequent academic year, subject to a decision of the Coordinating Committee of the Postgraduate Programme.
4. In cases of non-compliance with financial obligations, the student shall be removed from the Postgraduate Programme. In special cases, the Coordinating Committee may, following a student's request, extend the tuition payment period.
5. Up to thirty per cent (30%) of the total number of students admitted to the MSc Programme may be exempted from the obligation to pay tuition fees, in accordance with the provisions of Article 86 of Law 4957/2022. This provision applies only to Greek citizens.
6. Applications for tuition fee exemptions shall be submitted following the completion of the student selection process for the MSc Programme. The eligibility criteria and procedures for granting tuition fee exemptions shall be determined in accordance with the provisions of the applicable legislation. Students who receive a scholarship from another source shall not be eligible for a tuition fee exemption under this provision. Likewise, students who have already benefited from a tuition fee exemption in another postgraduate programme in which they are concurrently enrolled or in which they have previously been enrolled shall not be eligible for an exemption.

7. In cases where a student is granted an extension of studies beyond the standard duration of the Programme for reasons other than those explicitly exempted under these Regulations, an additional continuation fee for continued enrolment and/or dissertation completion may be imposed, subject to a decision of the competent bodies of the MSc Programme.
8. Tuition fees include access to educational materials, digital learning platforms, student support services, and participation in the educational activities of the MSc Programme. Expenses related to travel, accommodation, equipment, or participation in optional activities are not covered by the tuition fees.
9. Tuition fees may be revised for future student cohorts by decision of the competent bodies of the MSc Programme, in accordance with the applicable legislation.

## Student Evaluation of Modules and Teaching Staff

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- Postgraduate students are invited to evaluate: teaching staff; module content and organisation; support of the educational process through appropriate audiovisual means and new technologies; the relationship between teaching staff and students; the examination and assessment procedure; and the connection of teaching with the latest research findings.
- Evaluation is conducted through questionnaires distributed to students before the end of module teaching via a specially designed platform and completed anonymously.
- Processing of questionnaires is the responsibility of the Internal Evaluation Group of the Department, and results are communicated to the Department Head, the Programme Director and module teaching staff via coded response sheets.
- The Programme Director and the Coordinating Committee are responsible for working with teaching staff to draw up recommendations for improving the educational services provided, where required, based on student evaluations.
- At the end of the Coordinating Committee's term of duty, the outgoing Programme Director draws up a detailed report on the Programme's research and educational work and other activities, with the aim of improving the quality of studies, better utilisation of human resources, optimisation of existing infrastructure and socially beneficial use of the Programme's available resources. The report is submitted to the relevant Department.

## Programme Overview

| No   | Module Title                                                  | Managed by | Term/Year | Type       | ECTS |
|------|---------------------------------------------------------------|------------|-----------|------------|------|
| 1    | Children's Physical Activity and Health                       | UoE        | 1         | Compulsory | 7.5  |
| 2    | From Infancy to Adolescence: Clinical Nutrition in Practice   | UoE        | 1         | Compulsory | 7.5  |
| 3    | Biostatistics, Research Methodology & Ethics                  | HUA        | 1         | Compulsory | 7.5  |
| 4    | Dietary Evaluation and Growth from Embryonic Age to Adulthood | HUA        | 1         | Compulsory | 7.5  |
| 5    | Children's Mental Health and Wellbeing                        | UoE        | 2         | Compulsory | 7.5  |
| 6    | Introduction to Machine Learning & AI for Health              | HUA        | 2         | Compulsory | 7.5  |
| 7-8  | Optional modules (2 chosen from Term 2 pool)                  | HUA/UoE    | 2         | Optional   | 15   |
| 9-10 | Optional modules (2 chosen from Term 3 pool)                  | HUA/UoE    | 3         | Optional   | 15   |
| —    | MSc Dissertation / Thesis                                     | HUA        | 3         | Compulsory | 15   |

\*At least one optional module must be chosen from UoE.

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## Full-Time Mode – Study Schedule (18 months)

| Term 1 Modules           |                                                               | Hours | ECTS    |
|--------------------------|---------------------------------------------------------------|-------|---------|
| UOEHUA001                | Children's Physical Activity and Health                       | 3     | 7.5     |
| UOEHUA002                | From Infancy to Adolescence: Clinical Nutrition in Practice   | 3     | 7.5     |
| HUAUOE006                | Biostatistics, Research Methodology & Ethics                  | 3     | 7.5     |
| HUAUOE007                | Dietary Evaluation and Growth from Embryonic Age to Adulthood | 3     | 7.5     |
| Total Credits for Term 1 |                                                               |       | 30 ECTS |

| Term 2 Modules                             |                                                  | Hours | ECTS    |
|--------------------------------------------|--------------------------------------------------|-------|---------|
| UOEHUA003                                  | Children's Mental Health and Wellbeing           | 3     | 7.5     |
| HUAUOE008                                  | Introduction to Machine Learning & AI for Health | 3     | 7.5     |
| 2 optional Modules chosen from Term 2 Pool |                                                  | 6     | 15      |
| Total Credits for Term 2                   |                                                  |       | 30 ECTS |

### Optional Modules – Term 2 Pool (students select 2 from 4)

| Modules   |                                                                    | Hours | ECTS |
|-----------|--------------------------------------------------------------------|-------|------|
| HUAUOE009 | Prevention and Management of Childhood Obesity                     | 3     | 7.5  |
| HUAUOE010 | Employability and Entrepreneurship in Healthcare Professions       | 3     | 7.5  |
| HUAUOE011 | Human Health and Sustainable Nutrition: The Mediterranean Paradigm | 3     | 7.5  |

| Modules   |                                                                                 | Hours | ECTS |
|-----------|---------------------------------------------------------------------------------|-------|------|
| UOEHUA004 | Behavioural Science to Promote Better Childhood Nutrition and Physical Activity | 3     | 7.5  |

| Term 3 Modules                             |                     | Hours | ECTS    |
|--------------------------------------------|---------------------|-------|---------|
| HUAUOE015                                  | Dissertation/Thesis |       | 15      |
| 2 optional Modules chosen form Term 3 Pool |                     | 6     | 15      |
| Total Credits for Term 3                   |                     |       | 30 ECTS |

#### Optional Modules – Term 3 Pool (students select 2 from 4)

| Modules   |                                                                | Hours | ECTS |
|-----------|----------------------------------------------------------------|-------|------|
| HUAUOE012 | Sports Nutrition for Young Athletes                            | 3     | 7.5  |
| HUAUOE013 | Advanced Pediatric Clinical Nutrition and Dietetics            | 3     | 7.5  |
| HUAUOE014 | Internet of Things (IoT): Technologies, Systems & Applications | 3     | 7.5  |
| UOEHUA005 | Digital Health Ecosystems in Schools and Families              | 3     | 7.5  |

#### Part-Time Mode – Study Schedule (3 years)

| Year 1 Modules |                                                             | Hours | ECTS |
|----------------|-------------------------------------------------------------|-------|------|
| UOEHUA001      | Children's Physical Activity and Health                     | 3     | 7.5  |
| UOEHUA002      | From Infancy to Adolescence: Clinical Nutrition in Practice | 3     | 7.5  |
| HUAUOE006      | Biostatistics, Research Methodology & Ethics                | 3     | 7.5  |



| Year 1 Modules           |                                                               | Hours | ECTS    |
|--------------------------|---------------------------------------------------------------|-------|---------|
| HUAUOE007                | Dietary Evaluation and Growth from Embryonic Age to Adulthood | 3     | 7.5     |
| Total Credits for Year 1 |                                                               |       | 30 ECTS |

| Year 2 Modules                             |                                                  | Hours | ECTS    |
|--------------------------------------------|--------------------------------------------------|-------|---------|
| UOEHUA003                                  | Children's Mental Health and Wellbeing           | 3     | 7.5     |
| HUAUOE008                                  | Introduction to Machine Learning & AI for Health | 3     | 7.5     |
| 2 optional Modules chosen from Term 2 Pool |                                                  | 6     | 15      |
| Total Credits for Year 2                   |                                                  |       | 30 ECTS |

#### Optional Modules – Term 2 Pool (students select 2 from 4)

| Modules   |                                                                                 | Hours | ECTS |
|-----------|---------------------------------------------------------------------------------|-------|------|
| HUAUOE009 | Prevention and Management of Childhood Obesity                                  | 3     | 7.5  |
| HUAUOE010 | Employability and Entrepreneurship in Healthcare Professions                    | 3     | 7.5  |
| HUAUOE011 | Human Health and Sustainable Nutrition: The Mediterranean Paradigm              | 3     | 7.5  |
| UOEHUA004 | Behavioural Science to Promote Better Childhood Nutrition and Physical Activity | 3     | 7.5  |

| Year 3 Modules |                     | Hours | ECTS |
|----------------|---------------------|-------|------|
| HUAUOE015      | Dissertation/Thesis |       | 15   |

| Year 3 Modules                             | Hours | ECTS    |
|--------------------------------------------|-------|---------|
| 2 optional Modules chosen form Term 3 Pool | 6     | 15      |
| Total Credits for Year 3                   |       | 30 ECTS |

### Optional Modules – Term 3 Pool (students select 2 from 4)

| Modules                                                                  | Hours | ECTS |
|--------------------------------------------------------------------------|-------|------|
| HUAUOE012 Sports Nutrition for Young Athletes                            | 3     | 7.5  |
| HUAUOE013 Advanced Pediatric Clinical Nutrition and Dietetics            | 3     | 7.5  |
| HUAUOE014 Internet of Things (IoT): Technologies, Systems & Applications | 3     | 7.5  |
| UOEHUA005 Digital Health Ecosystems in Schools and Families              | 3     | 7.5  |



### **3. MODULE OUTLINES**

## UOEHUA001 - Children's Physical Activity and Health

### 1. GENERAL

|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                          |          |                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------|
| SCHOOL                                                                                                                                                                                                                                                          | University of Exeter Medical School                                                                                                                                                                                                                                                      |          |                                                                                      |
| ACADEMIC UNIT                                                                                                                                                                                                                                                   | Department of Public Health and Sport Sciences                                                                                                                                                                                                                                           |          |                                                                                      |
| LEVEL OF STUDIES                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                             |          |                                                                                      |
| COURSE CODE                                                                                                                                                                                                                                                     | UOEHUA001                                                                                                                                                                                                                                                                                | SEMESTER | 1 <sup>st</sup> Semester of Full-Time (FT)<br>1 <sup>st</sup> Year of Part-Time (PT) |
| COURSE TITLE                                                                                                                                                                                                                                                    | Children’s Physical Activity and Health                                                                                                                                                                                                                                                  |          |                                                                                      |
| INDEPENDENT TEACHING ACTIVITIES<br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> | WEEKLY TEACHING HOURS                                                                                                                                                                                                                                                                    | CREDITS  |                                                                                      |
| Lectures                                                                                                                                                                                                                                                        | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month                                                                                                                                                                                                                                    | 7.5      |                                                                                      |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                       |                                                                                                                                                                                                                                                                                          |          |                                                                                      |
| COURSE TYPE<br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | The course provides specialised knowledge in exercise physiology, growth and maturation, physical activity promotion and exercise prescription in children and adolescents.                                                                                                              |          |                                                                                      |
| PREREQUISITE COURSES                                                                                                                                                                                                                                            | None                                                                                                                                                                                                                                                                                     |          |                                                                                      |
| LANGUAGE OF INSTRUCTION AND OF ASSESSMENT                                                                                                                                                                                                                       | English                                                                                                                                                                                                                                                                                  |          |                                                                                      |
| MODE OF TEACHING<br><i>in-person (%)<br/>synchronous distance learning (%)<br/>asynchronous distance learning (%)<br/>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                                     | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%): 20%<br><br>Synchronous teaching is delivered through an approved teleconference platform, while asynchronous learning is delivered through the university learning management system. |          |                                                                                      |
| AVAILABILITY TO ERASMUS STUDENTS                                                                                                                                                                                                                                | Yes.                                                                                                                                                                                                                                                                                     |          |                                                                                      |
| COURSE WEBSITE (URL)                                                                                                                                                                                                                                            | HUA Digital Learning Platform (Moodle).                                                                                                                                                                                                                                                  |          |                                                                                      |

### 2. LEARNING OUTCOMES

#### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Brief Guide for drafting Learning Outcomes

Knowledge

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Explain physiological and developmental characteristics of children and adolescents relevant to exercise participation.</li> <li>• Describe the health benefits of physical activity during childhood and adolescence.</li> <li>• Analyse the role of physical activity in the prevention of obesity and chronic diseases.</li> <li>• Evaluate current international physical activity guidelines for youth populations.</li> </ul>                                                                                                                |                                                                                                                                                                                                                                                                                                                                          |
| <b>Skills</b> <ul style="list-style-type: none"> <li>• Design evidence-based exercise programmes for children and adolescents.</li> <li>• Interpret scientific literature related to physical activity, fitness and health in youth.</li> <li>• Apply appropriate assessment methods for physical fitness and physical activity in children.</li> </ul>                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                          |
| <b>Competences</b> <ul style="list-style-type: none"> <li>• Integrate exercise science principles with nutrition and public health strategies.</li> <li>• Develop interventions promoting physical activity in school and community settings.</li> <li>• Communicate scientific knowledge effectively to multidisciplinary audiences.</li> </ul>                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                          |
| Learning outcomes correspond to Level 7 of the European Qualifications Framework (EQF).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                          |
| <b>General Competences</b><br>Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                          |
| Search, analysis and synthesis of data and information, with the use of the necessary technology<br>Adaptability to new situations<br>Decision-making<br>Working independently<br>Team work<br>Working in an international environment<br>Working in an interdisciplinary environment<br>Production of new research ideas                                                                                                                                                                                                                                                                   | Project planning and management<br>Respect for difference and multiculturalism<br>Respect for the natural environment<br>Showing social, professional and ethical responsibility and sensitivity to gender issues<br>Criticism and self-criticism<br>Production of free, creative and inductive thinking<br>... ..<br>Other...<br>... .. |
| Search, analysis and synthesis of data and information with the use of necessary technologies<br>Adaptability to new situations<br>Decision-making<br>Working independently<br>Team work<br>Working in an international environment<br>Working in an interdisciplinary environment<br>Production of new research ideas<br>Project planning and management<br>Respect for difference and multiculturalism<br>Respect for the natural environment<br>Showing social, professional and ethical responsibility<br>Criticism and self-criticism<br>Production of creative and inductive thinking |                                                                                                                                                                                                                                                                                                                                          |

### 3. COURSE SYLLABUS

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| This course introduces students to the scientific foundations of exercise participation and performance in children and adolescents and explores how physical activity contributes to health and disease prevention.<br>Key topics include<br>Week 1: <ul style="list-style-type: none"> <li>• Introduction to youth physical activity</li> <li>• Importance of exercise during childhood</li> <li>• Epidemiology of physical inactivity</li> </ul> Week 2: <ul style="list-style-type: none"> <li>• Growth and maturation</li> <li>• Growth patterns</li> <li>• Biological vs chronological age</li> </ul> Week 3: <ul style="list-style-type: none"> <li>• Physiological responses to exercise</li> </ul> |
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|                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Cardiovascular responses</li> <li>• Metabolic responses</li> </ul>                                                         |
| Week 4:                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• Neuromuscular development</li> <li>• Motor development</li> <li>• Coordination and strength</li> </ul>                     |
| Week 5:                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• Aerobic fitness in youth</li> <li>• Measurement methods</li> <li>• VO<sub>2</sub>max development</li> </ul>                |
| Week 6:                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• Strength training in children</li> <li>• Resistance training guidelines</li> <li>• Safety considerations</li> </ul>        |
| Week 7:                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• Physical activity guidelines</li> <li>• WHO recommendations</li> <li>• International policies</li> </ul>                   |
| Week 8:                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• Measurement of physical activity</li> <li>• Accelerometers</li> <li>• Questionnaires</li> <li>• Fitness testing</li> </ul> |
| Week 9:                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• Exercise and obesity prevention</li> <li>• Lifestyle interventions</li> <li>• Behaviour change strategies</li> </ul>       |
| Week 10:                                                                                                                                                            |
| <ul style="list-style-type: none"> <li>• Exercise and mental health</li> <li>• Psychological benefits of physical activity</li> <li>• Wellbeing in youth</li> </ul> |
| Week 11:                                                                                                                                                            |
| <ul style="list-style-type: none"> <li>• Physical literacy</li> <li>• Motor competence</li> <li>• Long-term athlete development</li> </ul>                          |
| Week 12:                                                                                                                                                            |
| <ul style="list-style-type: none"> <li>• Exercise prescription</li> <li>• Designing youth exercise programmes</li> </ul>                                            |
| Week 13:                                                                                                                                                            |
| <ul style="list-style-type: none"> <li>• Applied case studies</li> <li>• School-based interventions</li> <li>• Community programmes</li> </ul>                      |

#### 4. TEACHING AND LEARNING METHODS - ASSESSMENT

|                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>MODE OF TEACHING</b><br/><i>Face-to-face, distance learning, etc.</i></p> | <p>Distance learning using a combination of synchronous and asynchronous teaching.</p> <p>Teaching includes:</p> <ul style="list-style-type: none"> <li>• live online lectures</li> <li>• recorded lectures</li> <li>• interactive discussion sessions</li> <li>• case-based learning</li> <li>• independent study</li> </ul> <p>These activities are supported through the university's digital platforms for teleconferencing and asynchronous learning.</p> |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Communication with students is conducted through: <ul style="list-style-type: none"> <li>• weekly synchronous sessions</li> <li>• course discussion forums</li> <li>• email communication</li> <li>• scheduled virtual office hours</li> <li>• announcements on the digital learning platform</li> </ul>                                                                                                                                                                                                                                                |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------|----------------------|----|--------------------------------|---|----------------------------|----|--------------------|----|----------------------------|----|--------------------|----|------------------|----|--------------|-----------|
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, x.a.</i>                                                                                                                                                                                                                                                                                                                                     | Student interaction is supported through: <ul style="list-style-type: none"> <li>• group discussion during live sessions</li> <li>• collaborative assignments</li> <li>• online discussion forums</li> <li>• digital collaborative tools</li> </ul>                                                                                                                                                                                                                                                                                                     |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                                                                                                                                                                                                                                                                                                                                                              | ICT tools used in the course include:<br>Teleconference platform (Microsoft Teams)<br>Asynchronous learning platform (Moodle)<br>Collaborative digital tools<br>Online assessment systems                                                                                                                                                                                                                                                                                                                                                               |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Students are required to have: <ul style="list-style-type: none"> <li>• computer or tablet</li> <li>• reliable internet connection</li> <li>• webcam and microphone</li> <li>• access to university digital learning platforms</li> </ul>                                                                                                                                                                                                                                                                                                               |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | All assignments are checked using Turnitin or equivalent plagiarism detection software.<br>Academic misconduct may lead to disciplinary procedures according to university regulations.                                                                                                                                                                                                                                                                                                                                                                 |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br>(1) The use of Artificial Intelligence is prohibited in all circumstances<br>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor<br>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature<br>(4) Students are free to use Artificial Intelligence                                                                                                                                                 | The use of Artificial Intelligence tools is allowed only when clearly acknowledged and properly referenced.<br>Students remain responsible for the originality and accuracy of their work.                                                                                                                                                                                                                                                                                                                                                              |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| <b>ORGANISATION OF TEACHING</b><br><i>The mode and methods of teaching are described in detail.<br/>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.<br/><br/>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.</i>                       | <table border="1"> <thead> <tr> <th>Activity</th><th>Semester workload</th></tr> </thead> <tbody> <tr> <td>Synchronous lectures</td><td>31</td></tr> <tr> <td>Asynchronous recorded lectures</td><td>8</td></tr> <tr> <td>Study of lecture materials</td><td>60</td></tr> <tr> <td>Literature reading</td><td>30</td></tr> <tr> <td>Preparation of assignments</td><td>35</td></tr> <tr> <td>Assignment writing</td><td>20</td></tr> <tr> <td>Exam preparation</td><td>16</td></tr> <tr> <td>Course total</td><td>200 hours</td></tr> </tbody> </table> | Activity | Semester workload | Synchronous lectures | 31 | Asynchronous recorded lectures | 8 | Study of lecture materials | 60 | Literature reading | 30 | Preparation of assignments | 35 | Assignment writing | 20 | Exam preparation | 16 | Course total | 200 hours |
| Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Semester workload                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Synchronous lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Asynchronous recorded lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Study of lecture materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Literature reading                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Preparation of assignments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Assignment writing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Exam preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Course total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 200 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| <b>STUDENT ASSESSMENT</b><br><i>Description of the assessment method<br/><br/>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other<br/><br/>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i> | <b>Description of the assessment method</b><br>Assessment of the course is designed to evaluate students' ability to critically analyse scientific evidence, apply theoretical knowledge to practical contexts, and communicate scientific information effectively.<br><br>The assessment strategy combines formative and summative assessment methods and includes written analytical work, application-based assignments and recorded presentations. All assessment is conducted in English.                                                          |          |                   |                      |    |                                |   |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |

|                                                                            | <p>The assessment approach emphasises critical thinking, evidence-based reasoning and applied knowledge, rather than factual recall.</p> <p><b>Assessment methods include:</b></p> <ul style="list-style-type: none"> <li>• analytical written report</li> <li>• literature review</li> <li>• recorded oral presentation</li> <li>• critical evaluation of scientific literature</li> <li>• problem-solving tasks</li> <li>• participation in online learning activities</li> </ul> <table border="1"> <thead> <tr> <th>Assessments</th><th>Weight</th></tr> </thead> <tbody> <tr> <td>Applied scientific report (journal article format) + recorded presentation</td><td>70%</td></tr> <tr> <td>Applied case study / data interpretation task</td><td>30%</td></tr> </tbody> </table> <p><b>Description of assessment tasks</b></p> <p><b>Applied scientific report and presentation (70%)</b><br/>Students prepare a <b>scientific report in journal-article format (2000 words)</b> describing an evidence-based physical activity or exercise programme for children or adolescents.<br/>The report includes:</p> <ul style="list-style-type: none"> <li>• Abstract</li> <li>• Introduction</li> <li>• Methods / programme design</li> <li>• Expected outcomes</li> <li>• Discussion</li> <li>• References</li> </ul> <p>Students also submit a <b>10-minute recorded presentation</b> summarising the key elements of the project and explaining the scientific rationale for the proposed intervention.</p> <p><b>Applied case study / data interpretation task (30%)</b><br/>Students complete a short, applied task analysing a real-world scenario related to physical activity, exercise or health in children and adolescents.<br/>The task may involve:</p> <ul style="list-style-type: none"> <li>• interpretation of physical activity or fitness data</li> <li>• analysis of a youth sport or health intervention scenario</li> <li>• development of evidence-based recommendations.</li> </ul> <p>Submission format:<br/>1000-word structured analysis report.</p> <p><b>Evaluation criteria</b><br/>Student performance is evaluated according to the following criteria:</p> <ul style="list-style-type: none"> <li>• quality and relevance of scientific literature</li> <li>• critical analysis and evaluation of evidence</li> </ul> | Assessments | Weight | Applied scientific report (journal article format) + recorded presentation | 70% | Applied case study / data interpretation task | 30% |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------|----------------------------------------------------------------------------|-----|-----------------------------------------------|-----|
| Assessments                                                                | Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |        |                                                                            |     |                                               |     |
| Applied scientific report (journal article format) + recorded presentation | 70%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |        |                                                                            |     |                                               |     |
| Applied case study / data interpretation task                              | 30%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |        |                                                                            |     |                                               |     |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>• application of knowledge to programme design</li> <li>• interpretation of data or case study</li> <li>• clarity and structure of written work</li> <li>• quality of presentation and communication.</li> </ul> <p><b>Accessibility of evaluation criteria</b></p> <p>Detailed assessment guidelines, marking rubrics and submission instructions are made available to students through the course digital learning platform at the beginning of the semester.</p> <p>Students receive written feedback following submission of each assessment.</p> |
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## 5. RECOMMENDED BIBLIOGRAPHY

- Suggested bibliography:

*The following textbooks and guidelines provide an overview of the scientific principles and applied practices related to exercise, physical activity and health in children and adolescents. Additional scientific articles will be provided throughout the course.*

### Physical Activity Guidelines

- World Health Organization (WHO)  
Global Guidelines on Physical Activity and Sedentary Behaviour (2020)  
<https://www.who.int/publications/i/item/9789240015128>
- American College of Sports Medicine (ACSM)  
ACSM's Guidelines for Exercise Testing and Prescription (11th edition)  
<https://www.acsm.org>
- U.S. Department of Health and Human Services  
Physical Activity Guidelines for Americans (2nd edition)  
<https://health.gov/our-work/nutrition-physical-activity/physical-activity-guidelines>
- International Society for Physical Activity and Health (ISPAH)
- Global Physical Activity Guidelines and advocacy resources  
<https://www.ispah.org>

### Youth Exercise and Athlete Development Guidelines

- International Olympic Committee (IOC)  
IOC Consensus Statement on Youth Athletic Development  
<https://bjsm.bmj.com/content/49/13/843>
- National Strength and Conditioning Association (NSCA)  
Position Statement on Youth Resistance Training  
<https://www.nscs.com>
- UK Chief Medical Officers  
Physical Activity Guidelines for Children and Young People  
<https://www.gov.uk/government/publications/physical-activity-guidelines-uk-chief-medical-officers-report>
- Canadian Society for Exercise Physiology (CSEP)  
Canadian 24-Hour Movement Guidelines for Children and Youth  
<https://csepguidelines.ca>

### Public Health and Physical Activity Surveillance

- Active Healthy Kids Global Alliance (AHKGA)  
Global Matrix Report Cards on Physical Activity for Children and Youth  
<https://activehealthykids.org>
- Global Observatory for Physical Activity (GoPA!)  
Global physical activity country profiles and surveillance data  
<https://www.globalphysicalactivityobservatory.com>
- OECD – Health and Physical Activity Indicators  
<https://www.oecd.org/health>

### Physical Activity Measurement

- ActiGraph Research Tools  
Accelerometer-based physical activity measurement  
<https://actigraphcorp.com>

- Global Physical Activity Questionnaire (GPAQ)  
WHO physical activity measurement tool  
<https://www.who.int/teams/noncommunicable-diseases/surveillance/systems-tools/gpaq>
- International Physical Activity Questionnaire (IPAQ)  
<https://sites.google.com/view/ipaq>

#### **Fitness and Health Assessment**

- EUROFIT Fitness Testing Battery  
European youth physical fitness testing protocol  
<https://www.coe.int/en/web/sport/eurofit>
- ALPHA Fitness Test Battery  
<https://www.healthevidence.org>
- FitnessGram / Cooper Institute  
School-based youth fitness assessment  
<https://fitnessgram.net>

#### **Youth Development and Sport Pathways**

- Long-Term Athlete Development (LTAD)  
Sport Canada model  
<https://sportforlife.ca>
- UK Youth Physical Development Model  
<https://www.uksca.org.uk>

#### **Behaviour Change and Intervention Tools**

- WHO Health Promoting Schools Framework  
<https://www.who.int/health-topics/health-promoting-schools>
- CDC Youth Physical Activity Toolkit  
<https://www.cdc.gov/healthyschools/physicalactivity>
- Global Action Plan on Physical Activity (WHO)  
<https://www.who.int/publications/i/item/9789241514187>

#### **Books**

- Armstrong, N., & Van Mechelen, W. (2023). *Oxford Textbook of Children's Sport and Exercise Medicine (4th ed.)*. Oxford University Press.
- Malina, R. M., Bouchard, C., & Bar-Or, O. (2004). *Growth, Maturation and Physical Activity (2nd ed.)*. Human Kinetics.
- Faigenbaum, A. D., & Myer, G. D. (2020). *Youth Resistance Training: Concepts and Applications*. Human Kinetics.
- Lloyd, R. S., & Oliver, J. L. (2019). *Strength and Conditioning for Young Athletes: Science and Application*. Routledge.
- Rowland, T. W. (2017). *Children's Exercise Physiology (2nd ed.)*. Human Kinetics.

#### **Students should consult:**

- PubMed – <https://pubmed.ncbi.nlm.nih.gov>
- SPORTDiscus – <https://www.ebsco.com>
- Web of Science – <https://www.webofscience.com>
- Scopus – <https://www.scopus.com>

## UOEHUA002 - From Infancy to Adolescence: Clinical Nutrition in Practice

### 1. GENERAL

|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                          |          |                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------|
| SCHOOL                                                                                                                                                                                                                                                          | University of Exeter Medical School                                                                                                                                                                                                                                                      |          |                                                              |
| ACADEMIC UNIT                                                                                                                                                                                                                                                   | Department of Public Health and Sport Sciences                                                                                                                                                                                                                                           |          |                                                              |
| LEVEL OF STUDIES                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                             |          |                                                              |
| COURSE CODE                                                                                                                                                                                                                                                     | UOEHUA002                                                                                                                                                                                                                                                                                | SEMESTER | 1st Semester of Full-Time (FT)<br>1st Year of Part-Time (PT) |
| COURSE TITLE                                                                                                                                                                                                                                                    | From Infancy to Adolescence: Clinical Nutrition in Practice                                                                                                                                                                                                                              |          |                                                              |
| INDEPENDENT TEACHING ACTIVITIES<br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> | WEEKLY TEACHING HOURS                                                                                                                                                                                                                                                                    | CREDITS  |                                                              |
| Lectures                                                                                                                                                                                                                                                        | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month                                                                                                                                                                                                                                    | 7.5      |                                                              |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                       |                                                                                                                                                                                                                                                                                          |          |                                                              |
| COURSE TYPE<br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | The course provides general knowledge in paediatric clinical nutrition, including growth and development, nutritional assessment, and the role of nutrition in supporting health and clinical outcomes in children and adolescents.                                                      |          |                                                              |
| PREREQUISITE COURSES                                                                                                                                                                                                                                            | None                                                                                                                                                                                                                                                                                     |          |                                                              |
| LANGUAGE OF INSTRUCTION AND OF ASSESSMENT                                                                                                                                                                                                                       | English                                                                                                                                                                                                                                                                                  |          |                                                              |
| MODE OF TEACHING<br><i>in-person (%)<br/>synchronous distance learning (%)<br/>asynchronous distance learning (%)<br/>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                                     | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%): 20%<br><br>Synchronous teaching is delivered through an approved teleconference platform, while asynchronous learning is delivered through the university learning management system. |          |                                                              |
| AVAILABILITY TO ERASMUS STUDENTS                                                                                                                                                                                                                                | Yes.                                                                                                                                                                                                                                                                                     |          |                                                              |
| COURSE WEBSITE (URL)                                                                                                                                                                                                                                            | HUA Digital Learning Platform (Moodle).                                                                                                                                                                                                                                                  |          |                                                              |

### 2. LEARNING OUTCOMES

#### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Brief Guide for drafting Learning Outcomes

#### Knowledge

- **Explain** the relationship between nutrition, growth, and development from infancy through to young adulthood, including key physiological and developmental determinants of healthy growth.
- **Describe** methods for nutritional screening and assessment in children and adolescents, including anthropometric, dietary, and clinical measures.
- **Analyse** the role of nutrition in the prevention of chronic conditions in childhood and adolescence, including obesity and cardiometabolic risk.
- **Evaluate** current international nutrition guidelines for infants, children and youth populations (for the prevention and/or treatment of chronic conditions).
- **Critically appraise** nutritional challenges and requirements in paediatric conditions, including feeding difficulties (e.g. fussy eating), neurodevelopmental conditions (e.g. ASD), food allergies and intolerances, respiratory conditions (e.g. cystic fibrosis) and other relevant conditions.

#### Skills

- **Apply** appropriate nutritional screening and assessment tools to evaluate nutritional status in children and adolescents.
- **Interpret** scientific literature related to paediatric clinical nutrition and its impact on growth, health, and disease outcomes.
- **Design** evidence-based nutritional strategies and interventions to support healthy growth and manage common paediatric conditions.

#### Competences

- **Integrate** clinical nutrition principles with multidisciplinary approaches to support the health and wellbeing of children and adolescents.
- **Develop** nutrition-focused interventions for the prevention and management of paediatric health conditions in clinical and community settings.
- **Communicate** complex nutritional concepts effectively to children, families, and multidisciplinary teams.

#### General Competences

*Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?*

Search, analysis and synthesis of data and information,  
with the use of the necessary technology

Adaptability to new situations

Decision-making

Working independently

Team work

Working in an international environment

Working in an interdisciplinary environment

Production of new research ideas

Project planning and management

Respect for difference and multiculturalism

Respect for the natural environment

Showing social, professional and ethical responsibility and  
sensitivity to gender issues

Criticism and self-criticism

Production of free, creative and inductive thinking

....

Other...

....

Search, analysis and synthesis of data and information with the use of necessary technologies

Adaptability to new situations

Decision-making

Working independently

Team work

Working in an international environment

Working in an interdisciplinary environment

Production of new research ideas

Project planning and management

Respect for difference and multiculturalism

Respect for the natural environment

Showing social, professional and ethical responsibility

Criticism and self-criticism

Production of creative and inductive thinking

### 3. COURSE SYLLABUS

This course introduces students to the scientific foundations of exercise participation and performance in children and adolescents and explores how physical activity contributes to health and disease prevention.

Key topics include

**Week 1 — Nutrition in Pregnancy and Early Life**

- Maternal nutrition and foetal development
- Early nutritional programming and developmental origins of health and disease (DOHaD)

**Week 2 — Nutrition in Infancy**

- Breastfeeding, formula feeding, and complementary feeding
- Nutritional requirements and growth in infancy

**Week 3 — Nutrition in Childhood**

- Dietary requirements and healthy eating patterns
- Establishing eating behaviours and dietary habits

**Week 4 — Nutrition in Adolescence and Young Adulthood**

- Puberty, growth spurts, and nutritional needs
- Lifestyle influences and risk behaviours

**Week 5 — Nutritional Screening and Assessment in Paediatrics**

- Growth monitoring (growth charts, z-scores, BMI-for-age)
- Dietary assessment methods, clinical indicators and applied behaviour change

**Week 6 — Body Composition and Nutritional Status**

- Methods of assessing body composition (e.g. skinfolds, BIA, DXA)
- Identification of undernutrition and overnutrition

**Week 7 — Paediatric Obesity and Weight Management**

- Aetiology and epidemiology of childhood obesity
- Evidence-based weight management and behavioural strategies

**Week 8 — Nutrition for Prevention of Chronic Conditions**

- Cardiometabolic health and early risk factors
- Role of diet in long-term disease prevention

**Week 9 — Nutrition in Feeding Difficulties and Fussy Eating**

- Development of feeding behaviours (e.g. children with ASD)
- Management strategies for feeding difficulties

**Week 10 — Nutrition and Bone Health**

- Key nutrients (calcium, vitamin D, protein)
- Peak bone mass and long-term implications

**Week 11 — Nutrition in Allergic Conditions and Intolerances**

- Aetiology, pathophysiology and epidemiology
- Nutritional management of food intolerances, allergies and coeliac disease

**Week 12 — Nutrition in Gastrointestinal Diseases**

- Aetiology, pathophysiology, medical treatment and epidemiology
- Nutritional management

**Week 13 — Nutrition in Complex Clinical Conditions**

- Aetiology, pathophysiology, medical treatment and epidemiology
- Nutrition in paediatric oncology



**Week 14 — Applied Case Studies in Paediatric Clinical Nutrition**

- Integrated case-based discussions
- Multidisciplinary approaches to nutrition care

**4. TEACHING AND LEARNING METHODS - ASSESSMENT**

| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i>                                                                                                                                                                                                                                                                                                           | Distance learning using a combination of synchronous and asynchronous teaching.<br>Teaching includes: <ul style="list-style-type: none"> <li>• live online lectures</li> <li>• recorded lectures</li> <li>• interactive discussion sessions</li> <li>• case-based learning</li> <li>• independent study</li> </ul> These activities are supported through the university's digital platforms for teleconferencing and asynchronous learning. |          |                   |                      |    |                                |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------|----------------------|----|--------------------------------|----|
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                                                                                                                                                                                                      | Communication with students is conducted through: <ul style="list-style-type: none"> <li>• weekly synchronous sessions</li> <li>• course discussion forums</li> <li>• email communication</li> <li>• scheduled virtual office hours</li> <li>• announcements on the digital learning platform</li> </ul>                                                                                                                                     |          |                   |                      |    |                                |    |
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, x.a.</i>                                                                                                                                                                                     | Student interaction is supported through: <ul style="list-style-type: none"> <li>• group discussion during live sessions</li> <li>• collaborative assignments</li> <li>• online discussion forums</li> <li>• digital collaborative tools</li> </ul>                                                                                                                                                                                          |          |                   |                      |    |                                |    |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                                                                                                                                                                                                              | ICT tools used in the course include:<br>Teleconference platform (Microsoft Teams)<br>Asynchronous learning platform (Moodle)<br>Collaborative digital tools<br>Online assessment systems                                                                                                                                                                                                                                                    |          |                   |                      |    |                                |    |
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                                                                                                                                                                                                       | Students are required to have: <ul style="list-style-type: none"> <li>• computer or tablet</li> <li>• reliable internet connection</li> <li>• webcam and microphone</li> <li>• access to university digital learning platforms</li> </ul>                                                                                                                                                                                                    |          |                   |                      |    |                                |    |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                                                                                                                                                                                                              | All assignments are checked using Turnitin or equivalent plagiarism detection software.<br>Academic misconduct may lead to disciplinary procedures according to university regulations.                                                                                                                                                                                                                                                      |          |                   |                      |    |                                |    |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br>(1) The use of Artificial Intelligence is prohibited in all circumstances<br>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor<br>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature<br>(4) Students are free to use Artificial Intelligence | The use of Artificial Intelligence tools is allowed only when clearly acknowledged and properly referenced.<br>Students remain responsible for the originality and accuracy of their work.                                                                                                                                                                                                                                                   |          |                   |                      |    |                                |    |
| <b>ORGANISATION OF TEACHING</b><br>The mode and methods of teaching are described in detail.<br>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art                                                                                                                                        | <table> <tr> <th>Activity</th><th>Semester workload</th></tr> <tr> <td>Synchronous lectures</td><td>13</td></tr> <tr> <td>Asynchronous recorded lectures</td><td>26</td></tr> </table>                                                                                                                                                                                                                                                       | Activity | Semester workload | Synchronous lectures | 13 | Asynchronous recorded lectures | 26 |
| Activity                                                                                                                                                                                                                                                                                                                                                                          | Semester workload                                                                                                                                                                                                                                                                                                                                                                                                                            |          |                   |                      |    |                                |    |
| Synchronous lectures                                                                                                                                                                                                                                                                                                                                                              | 13                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                   |                      |    |                                |    |
| Asynchronous recorded lectures                                                                                                                                                                                                                                                                                                                                                    | 26                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                   |                      |    |                                |    |



| workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.                                                                                                                                                                                                | Study of lecture materials                                                                                                                                                                                                                                                                                                       | 60          |        |                                                                            |     |                                                                    |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------|----------------------------------------------------------------------------|-----|--------------------------------------------------------------------|-----|
|                                                                                                                                                                                                                                                                                           | Literature reading                                                                                                                                                                                                                                                                                                               | 30          |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           | Preparation of assignments                                                                                                                                                                                                                                                                                                       | 35          |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           | Assignment writing                                                                                                                                                                                                                                                                                                               | 20          |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           | Exam preparation                                                                                                                                                                                                                                                                                                                 | 16          |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           | Course total                                                                                                                                                                                                                                                                                                                     | 200 hours   |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.                                                                                                                                      | <b>STUDENT ASSESSMENT</b>                                                                                                                                                                                                                                                                                                        |             |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           | Description of the assessment method                                                                                                                                                                                                                                                                                             |             |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           | Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other |             |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           | Specifically-defined evaluation criteria are given, and if and where they are accessible to students.                                                                                                                                                                                                                            |             |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| <b>Description of the assessment method</b>                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| Assessment of the course is designed to evaluate students’ ability to critically analyse scientific evidence, apply theoretical knowledge to practical contexts, and communicate scientific information effectively.                                                                      |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| The assessment strategy combines formative and summative assessment methods and includes written analytical work, application-based assignments and recorded presentations. All assessment is conducted in English.                                                                       |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| The assessment approach emphasises critical thinking, evidence-based reasoning and applied knowledge, rather than factual recall.                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| <b>Assessment methods include:</b>                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| <ul style="list-style-type: none"><li>• analytical written report</li><li>• literature review</li><li>• recorded oral presentation</li><li>• critical evaluation of scientific literature</li><li>• problem-solving tasks</li><li>• participation in online learning activities</li></ul> |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| <table><tr><th>Assessments</th><th>Weight</th></tr><tr><td>Applied scientific report (journal article format) + recorded presentation</td><td>70%</td></tr><tr><td>Applied clinical case study / Assessment, Nutrition Care Plan task</td><td>30%</td></tr></table>                       |                                                                                                                                                                                                                                                                                                                                  | Assessments | Weight | Applied scientific report (journal article format) + recorded presentation | 70% | Applied clinical case study / Assessment, Nutrition Care Plan task | 30% |
| Assessments                                                                                                                                                                                                                                                                               | Weight                                                                                                                                                                                                                                                                                                                           |             |        |                                                                            |     |                                                                    |     |
| Applied scientific report (journal article format) + recorded presentation                                                                                                                                                                                                                | 70%                                                                                                                                                                                                                                                                                                                              |             |        |                                                                            |     |                                                                    |     |
| Applied clinical case study / Assessment, Nutrition Care Plan task                                                                                                                                                                                                                        | 30%                                                                                                                                                                                                                                                                                                                              |             |        |                                                                            |     |                                                                    |     |
| <b>Description of assessment tasks</b>                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| <b>Applied scientific report and presentation (70%)</b>                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| Students prepare a <b>scientific report in journal-article format (2000 words)</b> describing an evidence-based nutrition intervention for either prevention or management of a chronic condition in children or adolescents.                                                             |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| The report includes:                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| <ul style="list-style-type: none"><li>• Abstract</li><li>• Introduction</li><li>• Methods / programme design</li><li>• Expected outcomes</li><li>• Discussion</li><li>• References</li></ul>                                                                                              |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| Students also submit a <b>10-minute recorded presentation</b> summarising the key elements of the project and explaining the scientific rationale for the proposed intervention.                                                                                                          |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |
| <b>Applied case study / data interpretation task (30%)</b>                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                  |             |        |                                                                            |     |                                                                    |     |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Students complete a short, applied task analysing a real-world scenario related to nutritional assessment and management of a chronic condition in a single case study involving a child, adolescent or young adult.</p> <p>The task may involve:</p> <ul style="list-style-type: none"> <li>• Appropriate nutritional status assessment</li> <li>• Evidenced base diagnosis</li> <li>• Evidence-based nutritional recommendations and/or intervention.</li> </ul> <p>Submission format:<br/>1000-word structured analysis report.</p> <p><b>Evaluation criteria</b><br/>Student performance is evaluated according to the following criteria:</p> <ul style="list-style-type: none"> <li>• quality and relevance of scientific literature</li> <li>• critical analysis and evaluation of evidence</li> <li>• application of knowledge to programme design</li> <li>• interpretation of data or case study</li> <li>• clarity and structure of written work</li> <li>• quality of presentation and communication.</li> </ul> <p><b>Accessibility of evaluation criteria</b><br/>Detailed assessment guidelines, marking rubrics and submission instructions are made available to students through the course digital learning platform at the beginning of the semester.<br/>Students receive written feedback following submission of each assessment.</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 5. RECOMMENDED BIBLIOGRAPHY

- Suggested bibliography:

*The following textbooks and guidelines provide an overview of the scientific principles and applied practices related to exercise, physical activity and health in children and adolescents. Additional scientific articles will be provided throughout the course.*

### Nutritional Guidelines and Reference Standards

- **World Health Organization (WHO)**  
Guideline: Updates on the Management of Severe Acute Malnutrition in Infants and Children (2013)  
<https://www.who.int/publications/i/item/9789241506328>
- **World Health Organization (WHO)**  
Child Growth Standards (2006) & Growth Reference (5–19 years)  
<https://www.who.int/tools/child-growth-standards>
- **Scientific Advisory Committee on Nutrition (SACN)**  
Dietary Reference Values for Energy (2011) and Children (various reports)  
<https://www.gov.uk/government/collections/sacn-reports>
- **European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN)**  
Position papers and clinical guidelines (infant feeding, micronutrients, clinical conditions)  
<https://www.espghan.org>
- **National Institute for Health and Care Excellence (NICE)**  
Nutrition support for adults and children; obesity and related guidelines, <https://www.nice.org.uk>

### Energy Requirements, Dietary Reference Values and body composition references

- Wells, J. C. K. (2006). Measuring body composition. *Archives of Disease in Childhood*, 91(7), 612–617.
- Wells, J. C. K., Williams, J. E., Chomtho, S., et al. (2012). Body-composition reference data for simple and reference techniques and a 4-component model: a new UK reference child. *American Journal of Clinical Nutrition*, 96(6), 1316–1326.
- Wells, J. C. K., Davies, P. S. W., Fewtrell, M. S., & Cole, T. J. (2019). Body composition reference charts for UK infants and children aged 6 weeks to 5 years. *European Journal of Clinical Nutrition*, 74, 141–148.
- Wells, J. C. K. (2019). Body composition of children with moderate and severe undernutrition and after treatment: a narrative review. *BMC Medicine*, 17, 215.
- Henry, C. J. K. (2005). Basal metabolic rate studies in humans: measurement and development of new equations *Public Health Nutrition*, 8(7A), 1133–1152
- **Scientific Advisory Committee on Nutrition (SACN)**  
Dietary Reference Values for Energy (2011)  
○ <https://www.gov.uk/government/publications/sacn-dietary-reference-values-for-energy>
- **Institute of Medicine (IOM)**  
Dietary Reference Intakes (DRIs) for Energy, Macronutrients and Micronutrients  
<https://www.nationalacademies.org>
- **FAO/WHO/UNU**  
Human Energy Requirements Report (2004)  
<https://www.fao.org>

### Infant, Child and Adolescent Nutrition

- **Worldwide Dietary Guidelines FAO**  
<https://www.fao.org/nutrition/education/dietary-guidelines/regions/en/>
- **Public Health England / UK Government**  
The Eatwell Guide and Infant Feeding Guidance  
<https://www.gov.uk/government/publications/the-eatwell-guide>
- **UNICEF UK Baby Friendly Initiative**  
Infant feeding and breastfeeding standards  
<https://www.unicef.org.uk/babyfriendly>
- **British Dietetic Association (BDA)**  
Food Fact Sheets and paediatric nutrition resources  
<https://www.bda.uk.com>
- **American Academy of Pediatrics (AAP)**  
Pediatric nutrition guidance and policy statements  
<https://www.aap.org>

### Nutritional Screening and Assessment

- **Royal College of Paediatrics and Child Health (RCPCH)**  
UK-WHO Growth Charts and guidance  
<https://www.rcpch.ac.uk>
- **British Association for Parenteral and Enteral Nutrition (BAPEN)**  
Paediatric Malnutrition Screening Tool (PYMS)  
<https://www.bapen.org.uk>
- **European Society for Clinical Nutrition and Metabolism (ESPEN)**  
Guidelines on clinical nutrition and hydration in paediatrics  
<https://www.espen.org>

### Obesity and Chronic Disease Prevention

- **World Health Organization (WHO)**  
Report of the Commission on Ending Childhood Obesity (2016)  
<https://www.who.int/publications/i/item/9789241510066>
- **National Institute for Health and Care Excellence (NICE)**  
Obesity: Identification, assessment and management (CG189)  
<https://www.nice.org.uk/guidance/cg189>

- **Centres for Disease Control and Prevention (CDC)**  
Childhood obesity and healthy weight resources  
<https://www.cdc.gov/obesity>

#### Clinical Conditions in Paediatric Nutrition

- **European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN)**  
Guidelines on coeliac disease, food allergy, and GI conditions  
<https://www.espghan.org>
- **Cystic Fibrosis Trust (UK)**  
Nutritional management of cystic fibrosis  
<https://www.cysticfibrosis.org.uk>
- **International Society of Paediatric Oncology (SIOP)**  
Supportive care and nutrition in paediatric oncology  
<https://siop-online.org>
- **British Society for Allergy & Clinical Immunology (BSACI)**  
Guidelines for food allergy management  
<https://www.bsaci.org>

#### Bone Health and Micronutrients

- **Scientific Advisory Committee on Nutrition (SACN)**  
Vitamin D and Health Report (2016)  
<https://www.gov.uk/government/publications/sacn-vitamin-d-and-health-report>
- **International Osteoporosis Foundation (IOF)**  
Bone health resources across the lifecourse  
<https://www.osteoporosis.foundation>

#### Behaviour, Feeding and Neurodevelopment

- **National Autistic Society (UK)**  
Eating behaviours and nutrition in autism  
<https://www.autism.org.uk>
- **NHS UK**  
Fussy eating and feeding advice for children  
<https://www.nhs.uk>

#### Books

- Koletzko, B., et al. (2021). *Pediatric Nutrition in Practice* (3rd ed.). Karger.
- Shaw, V. (2020). *Clinical Paediatric Dietetics* (5th ed.). Wiley-Blackwell.
- Corkins, M. R. (Ed.). (2015). *The ASPEN Pediatric Nutrition Support Core Curriculum* (2nd ed.). ASPEN.
- Agostoni, C., & Brunetti, L. (2019). *Nutrition in Childhood*. Springer.
- Suskind, D. L., & Duggan, C. (2014). *Pediatric Nutrition*. PMPH USA.

#### Students should consult:

- PubMed – <https://pubmed.ncbi.nlm.nih.gov>
- SPORTDiscus – <https://www.ebsco.com>
- Web of Science – <https://www.webofscience.com>
- Scopus – <https://www.scopus.com>

## UOEHUA003 - Children's Mental Health and Wellbeing

### 1. GENERAL

|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------|
| SCHOOL                                                                                                                                                                                                                                                          | University of Exeter Medical School                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |                                                                                      |
| ACADEMIC UNIT                                                                                                                                                                                                                                                   | Department of Public Health and Sport Sciences                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                                                                                      |
| LEVEL OF STUDIES                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                                                                                      |
| COURSE CODE                                                                                                                                                                                                                                                     | UOEHUA003                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SEMESTER | 2 <sup>nd</sup> Semester of Full-Time (FT)<br>2 <sup>nd</sup> Year of Part-Time (PT) |
| COURSE TITLE                                                                                                                                                                                                                                                    | Children’s Mental Health and Wellbeing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                                                                                      |
| INDEPENDENT TEACHING ACTIVITIES<br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> | WEEKLY TEACHING HOURS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | CREDITS  |                                                                                      |
| Lectures                                                                                                                                                                                                                                                        | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 7.5      |                                                                                      |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |                                                                                      |
| COURSE TYPE<br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | This course provides students with an advanced understanding of the mental health and wellbeing challenges faced by children and adolescents in contemporary society. The module critically examines psychological, educational, developmental, social and public health perspectives related to child and adolescent mental health, while exploring evidence-based interventions, prevention strategies and wellbeing promotion approaches across schools, families, communities and digital environments. The module integrates theory, policy, research and practice, with emphasis on real-world applications and interdisciplinary approaches to supporting children and young people. |          |                                                                                      |
| PREREQUISITE COURSES                                                                                                                                                                                                                                            | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                                                                                      |
| LANGUAGE OF INSTRUCTION AND OF ASSESSMENT                                                                                                                                                                                                                       | English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                                                                                      |
| MODE OF TEACHING<br><i>in-person (%)<br/>synchronous distance learning (%)<br/>asynchronous distance learning (%)<br/>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                                     | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%): 20%<br><br>Synchronous teaching is delivered through an approved teleconference platform, while asynchronous learning is delivered through the university learning management system.                                                                                                                                                                                                                                                                                                                                                                                                    |          |                                                                                      |
| AVAILABILITY TO ERASMUS STUDENTS                                                                                                                                                                                                                                | Yes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                                                                                      |
| COURSE WEBSITE (URL)                                                                                                                                                                                                                                            | HUA Digital Learning Platform (Moodle).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                                                                                      |

### 2. LEARNING OUTCOMES

#### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Brief Guide for drafting Learning Outcomes

## Knowledge

On successful completion of this course students will be able to:

- Critically evaluate current evidence relating to children and young people's mental health and wellbeing.
- Demonstrate understanding of developmental, psychological, educational, social and environmental determinants of mental health.
- Critically examine theoretical frameworks underpinning mental health and wellbeing in childhood and adolescence.
- Evaluate current intervention models, prevention strategies and models of care used to support children and adolescents.
- Understand the role of schools, families, communities and digital environments in influencing mental health outcomes.
- Critically evaluate research methodologies and ethical considerations relevant to child and adolescent mental health research.

## Skills

Students will be able to:

- Critically analyse complex mental health challenges affecting children and adolescents.
- Apply theoretical and evidence-based approaches to the design of mental health and wellbeing interventions.
- Interpret research evidence, policy documents and intervention studies.
- Develop critical arguments relating to prevention, resilience and mental health promotion.
- Design practical and ethical mental health support approaches within educational and public health contexts.

## Competences

Students will be able to:

- Apply interdisciplinary perspectives to child and adolescent mental health challenges.
- Critically evaluate school-based and community-based wellbeing interventions.
- Demonstrate professional and ethical awareness when discussing sensitive mental health topics.
- Integrate policy, research and practice perspectives into mental health promotion strategies.
- Communicate evidence-based mental health concepts effectively in academic and professional contexts.

Learning outcomes correspond to Level 7 of the European Qualifications Framework (EQF).

## General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?

Search, analysis and synthesis of data and information, with the use of the necessary technology  
Adaptability to new situations  
Decision-making  
Working independently  
Team work  
Working in an international environment  
Working in an interdisciplinary environment  
Production of new research ideas

Project planning and management  
Respect for difference and multiculturalism  
Respect for the natural environment  
Showing social, professional and ethical responsibility and sensitivity to gender issues  
Criticism and self-criticism  
Production of free, creative and inductive thinking  
... ..  
Other...  
... ..

The course aims to promote:

- Critical thinking
- Independent learning
- Interdisciplinary collaboration

- Ethical and professional responsibility
- Problem solving
- Research literacy
- Evidence-based decision making
- Respect for diversity and inclusion
- Sensitivity to vulnerable populations
- Creative and analytical thinking
- Project planning and intervention design

### 3. COURSE SYLLABUS

The course introduces students to the major mental health and wellbeing issues affecting children and young people in contemporary society. Topics are adapted from the Exeter ERP008 module structure and updated for an international and digital health-oriented MSc environment.

#### Indicative Weekly Topics

##### Lecture 1 – Introduction to Children's Mental Health and Wellbeing

- Definitions of mental health and wellbeing
- Epidemiology and global trends
- Developmental perspectives
- Public health significance

##### Lecture 2 – Theories of Wellbeing

- Psychological wellbeing theories
- Positive psychology
- Hedonic and eudaimonic wellbeing
- Developmental wellbeing models

##### Lecture 3 – Internalising and Emotional Difficulties

- Anxiety disorders
- Depression
- Emotional dysregulation
- Risk and protective factors

##### Lecture 4 – School Mental Health and Whole-School Approaches

- School climate and wellbeing
- Social-emotional learning
- Whole-school mental health frameworks
- Educational policy approaches

##### Lecture 5 – Adverse Childhood Experiences and Trauma

- ACEs and toxic stress
- Trauma-informed care
- Neurodevelopmental impacts of trauma
- Resilience frameworks

##### Lecture 6 – Externalising and Behavioural Difficulties

- ADHD and behavioural disorders
- Conduct problems
- Emotional regulation
- Family and social influences

##### Lecture 7 – Early Intervention and Prevention

- Early identification
- Prevention science
- Community and family interventions
- Multi-agency support systems

##### Lecture 8 – Developmental Wellbeing and Resilience

- Protective factors
- Self-esteem and coping
- Social connectedness
- Developmental resilience pathways



**Lecture 9 – Positive Psychology in Childhood and Adolescence**

- Strengths-based approaches
- Flourishing and wellbeing promotion
- Gratitude and mindfulness interventions
- School-based positive psychology

**Lecture 10 – Technology and Mental Health**

- Social media and wellbeing
- Digital risks and opportunities
- Gaming and screen time
- Digital wellbeing interventions

**Lecture 11 – Self-Harm and Risk Behaviours**

- Self-harm in adolescence
- Suicide prevention
- Safeguarding
- Crisis intervention pathways

**Lecture 12 – Migrants, Diversity and Mental Health**

- Cultural influences on mental health
- Migration and trauma
- Health inequalities
- Inclusion and equity

**Lecture 13 – Mental Health in a Changing World**

- Climate anxiety
- Social change and uncertainty
- Future challenges in youth mental health
- Digital and AI-supported mental health systems

**4. TEACHING AND LEARNING METHODS - ASSESSMENT**

|                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i>                                                                                                                       | Distance learning using a combination of synchronous and asynchronous teaching.<br>Teaching includes: <ul style="list-style-type: none"> <li>• live online lectures</li> <li>• recorded lectures</li> <li>• interactive discussion sessions</li> <li>• case-based learning</li> <li>• workshops</li> <li>• guided independent study</li> </ul> These activities are supported through the university's digital platforms for teleconferencing and asynchronous learning. |
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                  | Communication with students is conducted through: <ul style="list-style-type: none"> <li>• weekly synchronous sessions</li> <li>• course discussion forums</li> <li>• email communication</li> <li>• scheduled virtual office hours</li> <li>• announcements on the digital learning platform</li> </ul>                                                                                                                                                                 |
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, x.a.</i> | Student interaction is supported through: <ul style="list-style-type: none"> <li>• group discussion during live sessions</li> <li>• collaborative assignments</li> <li>• online discussion forums</li> <li>• digital collaborative tools</li> </ul>                                                                                                                                                                                                                      |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                          | ICT tools used in the course include: <ul style="list-style-type: none"> <li>• Teleconference platform (Microsoft Teams)</li> <li>• Asynchronous learning platform (Moodle)</li> <li>• Collaborative digital tools</li> <li>• Online assessment systems</li> </ul>                                                                                                                                                                                                       |



| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Students are required to have: <ul style="list-style-type: none"> <li>• computer or tablet</li> <li>• reliable internet connection</li> <li>• webcam and microphone</li> <li>• access to university digital learning platforms</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------|-----------------------------------------------------|-----|-------------------------------------------------|-----|----------------------------|----|--------------------|----|----------------------------|----|--------------------|----|------------------|----|--------------|-----------|
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | All assignments are checked using Turnitin or equivalent plagiarism detection software.<br>Academic misconduct may lead to disciplinary procedures according to university regulations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br>(1) The use of Artificial Intelligence is prohibited in all circumstances<br>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor<br>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature<br>(4) Students are free to use Artificial Intelligence                                                                                                                                      | The use of Artificial Intelligence tools is allowed only when clearly acknowledged and properly referenced.<br>Students remain responsible for the originality, accuracy and academic integrity of their work.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| <b>ORGANISATION OF TEACHING</b><br>The mode and methods of teaching are described in detail.<br>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.<br><br>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.                      | <table border="1"> <thead> <tr> <th>Activity</th><th>Semester workload</th></tr> </thead> <tbody> <tr> <td>Synchronous lectures</td><td>31</td></tr> <tr> <td>Asynchronous recorded lectures</td><td>8</td></tr> <tr> <td>Study of lecture materials</td><td>60</td></tr> <tr> <td>Literature reading</td><td>30</td></tr> <tr> <td>Preparation of assignments</td><td>35</td></tr> <tr> <td>Assignment writing</td><td>20</td></tr> <tr> <td>Exam preparation</td><td>16</td></tr> <tr> <td>Course total</td><td>200 hours</td></tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Activity    | Semester workload | Synchronous lectures                                | 31  | Asynchronous recorded lectures                  | 8   | Study of lecture materials | 60 | Literature reading | 30 | Preparation of assignments | 35 | Assignment writing | 20 | Exam preparation | 16 | Course total | 200 hours |
| Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Semester workload                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Synchronous lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Asynchronous recorded lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Study of lecture materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Literature reading                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Preparation of assignments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Assignment writing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Exam preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Course total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 200 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| <b>STUDENT ASSESSMENT</b><br>Description of the assessment method<br><br>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other<br><br>Specifically-defined evaluation criteria are given, and if and where they are accessible to students. | Assessment of the course is designed to evaluate students' ability to critically analyse scientific evidence, apply theoretical knowledge to practical mental health contexts, and communicate scientific and professional information effectively.<br>The assessment strategy combines formative and summative assessment methods and includes written analytical work, application-based assignments and recorded presentations. All assessments are conducted in English.<br>The assessment approach emphasises critical thinking, evidence-based reasoning and applied understanding rather than factual recall.<br>Assessment methods include: <ul style="list-style-type: none"> <li>• analytical written report</li> <li>• literature review</li> <li>• recorded oral presentation</li> <li>• critical evaluation of scientific literature</li> <li>• problem-solving tasks</li> <li>• participation in online learning activities</li> </ul> <table border="1"> <thead> <tr> <th>Assessments</th><th>Weight</th></tr> </thead> <tbody> <tr> <td>Critical analytical essay and recorded presentation</td><td>70%</td></tr> <tr> <td>Applied case study / intervention analysis task</td><td>30%</td></tr> </tbody> </table><br><b>Description of assessment tasks</b><br>Critical analytical essay and presentation (70%) | Assessments | Weight            | Critical analytical essay and recorded presentation | 70% | Applied case study / intervention analysis task | 30% |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Assessments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Critical analytical essay and recorded presentation                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 70%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |
| Applied case study / intervention analysis task                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 30%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                   |                                                     |     |                                                 |     |                            |    |                    |    |                            |    |                    |    |                  |    |              |           |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Students prepare a critical analytical report (2000 words) examining a contemporary mental health or wellbeing issue affecting children or adolescents.</p> <p>Indicative topics may include:</p> <ul style="list-style-type: none"> <li>• school mental health</li> <li>• social media and wellbeing</li> <li>• trauma and resilience</li> <li>• anxiety and depression</li> <li>• self-harm and risk behaviours</li> <li>• digital mental health</li> <li>• prevention and early intervention</li> </ul> <p>The report includes:</p> <ul style="list-style-type: none"> <li>• Abstract</li> <li>• Introduction</li> <li>• Critical review of evidence</li> <li>• Discussion of intervention approaches</li> <li>• Ethical considerations</li> <li>• Conclusions</li> <li>• References</li> </ul> <p>Students also submit a 10-minute recorded presentation summarising the key findings and explaining the scientific rationale underpinning their analysis.</p> <p>Applied case study / intervention analysis task (30%)</p> <p>Students complete a short applied task analysing a real-world mental health or wellbeing scenario involving children or adolescents.</p> <p>The task may involve:</p> <ul style="list-style-type: none"> <li>• interpretation of a mental health case scenario</li> <li>• evaluation of school or community interventions</li> <li>• analysis of psychosocial risk factors</li> <li>• development of evidence-based recommendations</li> </ul> <p>Submission format:</p> <p>1000-word structured analysis report.</p> <p><b>Evaluation criteria</b></p> <p>Student performance is evaluated according to the following criteria:</p> <ul style="list-style-type: none"> <li>• quality and relevance of scientific literature</li> <li>• critical analysis and evaluation of evidence</li> <li>• application of theory and evidence to practice</li> <li>• interpretation of case studies or intervention scenarios</li> <li>• clarity and structure of written work</li> <li>• quality of presentation and communication</li> </ul> <p><b>Accessibility of evaluation criteria</b></p> <p>Detailed assessment guidelines, marking rubrics and submission instructions are made available to students through the course digital learning platform at the beginning of the semester.</p> <p>Students receive written feedback following submission of each assessment.</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 5. RECOMMENDED BIBLIOGRAPHY

*- Suggested bibliography:*

**The following textbooks, guidelines and scientific resources provide an overview of the theoretical, developmental, psychological, educational and public health perspectives related to children and young people's mental health and wellbeing. Additional scientific articles and contemporary reports will be provided throughout the course.**

**Mental Health and Wellbeing Guidelines**

World Health Organization (WHO)  
Mental Health of Adolescents  
<https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health>

World Health Organization (WHO)  
Guidelines on Mental Health Promotive and Preventive Interventions for Adolescents  
<https://www.who.int/publications/i/item/9789240065260>

NHS Digital  
Mental Health of Children and Young People in England  
<https://digital.nhs.uk>

UNICEF  
The State of the World's Children: On My Mind – Promoting, Protecting and Caring for Children's Mental Health  
<https://www.unicef.org/reports/state-worlds-children-2021>

Department for Education (UK)  
Promoting Children and Young People's Mental Health and Wellbeing  
<https://www.gov.uk/government/publications/promoting-children-and-young-peoples-emotional-health-and-wellbeing>

**School Mental Health and Wellbeing Frameworks**

WHO Health Promoting Schools Framework  
<https://www.who.int/health-topics/health-promoting-schools>

Public Health England  
Promoting Children and Young People's Emotional Health and Wellbeing  
<https://www.gov.uk/government/publications/promoting-children-and-young-peoples-emotional-health-and-wellbeing>

UNESCO  
Social and Emotional Learning Frameworks  
<https://www.unesco.org>

OECD  
Student Wellbeing and Mental Health Reports  
<https://www.oecd.org/education>

**Trauma, Resilience and Safeguarding**

Center on the Developing Child – Harvard University  
Toxic Stress and Childhood Development  
<https://developingchild.harvard.edu>

Substance Abuse and Mental Health Services Administration (SAMHSA)  
Trauma-Informed Care in Behavioural Health Services  
<https://www.samhsa.gov>

Anna Freud National Centre for Children and Families  
Schools and Mental Health Resources  
<https://www.annafreud.org>

NSPCC  
Child Protection and Safeguarding Guidance  
<https://www.nspcc.org.uk>

**Digital Mental Health and Technology**

UNICEF  
Children in a Digital World  
<https://www.unicef.org>

Royal College of Psychiatrists  
Social Media and Mental Health in Young People  
<https://www.rcpsych.ac.uk>

Digital Futures Commission  
Children, Technology and Wellbeing Reports  
<https://www.srightsfoundation.com>

Ofcom  
Children and Parents Media Use Reports  
<https://www.ofcom.org.uk>

#### **Mental Health Assessment and Research Resources**

Strengths and Difficulties Questionnaire (SDQ)  
<https://www.sdqinfo.org>

Revised Children's Anxiety and Depression Scale (RCADS)  
<https://www.childfirst.ucla.edu/resources>

Child Behaviour Checklist (CBCL)  
<https://aseba.org>

Mental Health Foundation  
Research and Policy Resources  
<https://www.mentalhealth.org.uk>

#### **Books**

Taylor, E. A., Verhulst, F. C., Wong, J., Yoshida, K., & Nikapota, A. (2020). *Mental Health and Illness of Children and Adolescents*. Springer.

Laver-Bradbury, C., Thompson, M. J., Gale, C., & Hooper, C. M. (2021). *Child and Adolescent Mental Health: Theory and Practice*. CRC Press.

Dogra, N., Parkin, A., Warner-Gale, F., & Frake, C. (2018). *A Multidisciplinary Handbook of Child and Adolescent Mental Health for Front-Line Professionals*. Jessica Kingsley Publishers.

Burton, M., Pavord, E., & Williams, B. (2014). *An Introduction to Child and Adolescent Mental Health*. Sage.

Carr, A. (2006). *What Works with Children, Adolescents and Adults? A Review of Research on the Effectiveness of Psychotherapy*. Routledge.

Garvis, S., & Pendergast, D. (2017). *Health and Wellbeing in Childhood*. Cambridge University Press.

Owens, R. L., & Waters, L. (2020). Positive Psychology Interventions for Children and Adolescents. *Journal of Positive Psychology*.

Weare, K. (2015). *What Works in Promoting Social and Emotional Well-being and Responding to Mental Health Problems in Schools?* National Children's Bureau.

#### **Key Peer-Reviewed Journals**

- Journal of Child Psychology and Psychiatry
- Child and Adolescent Mental Health
- Journal of Adolescent Health
- School Mental Health
- The Lancet Psychiatry
- Clinical Child Psychology and Psychiatry
- Journal of Youth and Adolescence
- International Journal of Mental Health Promotion
- Children and Youth Services Review

#### **Students should consult:**

- PubMed – <https://pubmed.ncbi.nlm.nih.gov>
- PsycINFO – <https://www.apa.org/pubs/databases/psycinfo>
- Web of Science – <https://www.webofscience.com>
- Scopus – <https://www.scopus.com>
- Google Scholar – <https://scholar.google.com>

#### **Students should consult:**

- PubMed – <https://pubmed.ncbi.nlm.nih.gov>
- SPORTDiscus – <https://www.ebsco.com>
- Web of Science – <https://www.webofscience.com>
- Scopus – <https://www.scopus.com>

## UOEHUA004 -Behavioural Science to Promote Better Childhood Nutrition and Physical Activity

### 1. GENERAL

|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                        |                                                       |                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------|
| SCHOOL                                                                                                                                                                                                                                                          | University of Exeter Medical School                                                                                                                                                                                                                                                                                                    |                                                       |                                                              |
| ACADEMIC UNIT                                                                                                                                                                                                                                                   | Department of Public Health and Sport Sciences                                                                                                                                                                                                                                                                                         |                                                       |                                                              |
| LEVEL OF STUDIES                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                                                                           |                                                       |                                                              |
| COURSE CODE                                                                                                                                                                                                                                                     | UOEHUA004                                                                                                                                                                                                                                                                                                                              | SEMESTER                                              | 2nd Semester of Full-Time (FT)<br>2nd Year of Part-Time (PT) |
| COURSE TITLE                                                                                                                                                                                                                                                    | Behavioural Science to promote better childhood nutrition and physical activity                                                                                                                                                                                                                                                        |                                                       |                                                              |
| INDEPENDENT TEACHING ACTIVITIES<br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> |                                                                                                                                                                                                                                                                                                                                        | WEEKLY TEACHING HOURS                                 | CREDITS                                                      |
| Lectures                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                        | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month | 7.5                                                          |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                        |                                                       |                                                              |
| COURSE TYPE<br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | The course provides students with an overview of key behavioural sciences theories and methods including COM-B and the behaviour change wheel, social cognitive models and nudge theory to understand, design and deliver effective change programs and randomised trials to promote better childhood nutrition and physical activity. |                                                       |                                                              |
| PREREQUISITE COURSES                                                                                                                                                                                                                                            | None                                                                                                                                                                                                                                                                                                                                   |                                                       |                                                              |
| LANGUAGE OF INSTRUCTION AND OF ASSESSMENT                                                                                                                                                                                                                       | English                                                                                                                                                                                                                                                                                                                                |                                                       |                                                              |
| MODE OF TEACHING<br><i>in-person (%)<br/>synchronous distance learning (%)<br/>asynchronous distance learning (%)<br/>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                                     | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%):20%<br><br>Synchronous teaching is delivered through an approved teleconference platform, while asynchronous learning is delivered through the university learning management system.                                                |                                                       |                                                              |
| AVAILABILITY TO ERASMUS STUDENTS                                                                                                                                                                                                                                | Yes.                                                                                                                                                                                                                                                                                                                                   |                                                       |                                                              |
| COURSE WEBSITE (URL)                                                                                                                                                                                                                                            | HUA Digital Learning Platform (Moodle).                                                                                                                                                                                                                                                                                                |                                                       |                                                              |

### 2. LEARNING OUTCOMES

## Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Brief Guide for drafting Learning Outcomes

## Knowledge

- Demonstrate understanding of key behavioural science theories used to predict and explain childhood health behaviours
- Demonstrate understanding of the role of social, demographic, environmental, and commercial determinants influencing childhood nutrition and physical activity
- Demonstrate understanding of the principles and methodologies underpinning randomized controlled trials and real-world (field) evaluations of behaviour change interventions
- Critically understand ethical theories, debates, and considerations related to behaviour change interventions targeting children

## Skills

- Design theory-informed behaviour change interventions to improve childhood nutrition and physical activity
- Design appropriate evaluation strategies, including trials, to assess intervention effectiveness
- Apply appropriate methods to measure health behaviours and critically appraise intervention design, implementation, and outcomes

## Competences

- Develop and implement behaviour change interventions targeting childhood nutrition and physical activity in real-world contexts
- Apply evaluation frameworks to assess the effectiveness and impact of behaviour change interventions in practice
- Critically appraise public health policies and real-world interventions aimed at improving childhood nutrition and physical activity

## General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?

Search, analysis and synthesis of data and information, with the use of the necessary technology

Adaptability to new situations

Decision-making

Working independently

Team work

Working in an international environment

Working in an interdisciplinary environment

Production of new research ideas

Project planning and management

Respect for difference and multiculturalism

Respect for the natural environment

Showing social, professional and ethical responsibility and sensitivity to gender issues

Criticism and self-criticism

Production of free, creative and inductive thinking

...

Other...

.....

Adaptability to new situations

Decision-making

Working independently

Working in an interdisciplinary environment

Production of new research ideas

Project planning and management

Respect for difference and multiculturalism

Respect for the natural environment

Showing social, professional and ethical responsibility and sensitivity to gender issues

Production of free, creative and inductive thinking

#### **Additional Skills**

- Application of behavioural science theories, models and methods to real-world public health challenges
- Understanding and application of systems thinking and social-ecological approaches
- Ability to design, implement and evaluate behaviour change interventions
- Understanding of social determinants of health and health inequalities
- Ethical evaluation of behavioural interventions and public health policies
- Understanding the structure and methodology of randomized and real world trials
- Ability to apply futures thinking and horizon scanning in public health contexts

### **3. COURSE SYLLABUS**

This course introduces students to key behavioural science theories, methods and practices to understand and promote healthier dietary choices and greater physical activity in children.

Key topics include

#### **Lecture 1: Introduction to Behavioural Science of Childhood Nutrition and Physical Activity**

- Importance of behavioural science for nutrition and PA promotion in children
- Measuring childhood health behaviours
- Overview of nutrition and PA promotion challenges for children

#### **Lecture 2: Foundational Behavioural Theories and Models**

- Overview of foundational social cognitive behavioural science models
- Introduction to COM-B and the behaviour change wheel
- Introduction to nudge theory

#### **Lecture 3: Habits and the Food Environment**

- Review major mechanisms of habit formation for nutrition and PA
- Introduction to behaviourism and choice architecture interventions to 'nudge' healthier choices

#### **Lecture 4: Food Marketing, Branding and Advertising**

- Introduction to the influence of marketing, branding and advertising on childhood food choice and PA
- intervention approaches to tackle the role of marketing, branding and advertising on children's health

#### **Lecture 5: Social-Ecological Models**

- Introduction to multi-level 'ecological models' and systems thinking for childhood obesity
- Introduction to multi-component interventions and real-world complex trials
- Overview of MRC guidance on complex interventions

#### **Lecture 6: Social determinants of health**

- Overview of socio-demographic drivers of childhood nutrition and PA
- Overview of social inequalities and childhood health behaviours

#### **Lecture 7: Public Health Interventions for Childhood Nutrition and Physical Activity**

- Overview of major policies and case studies to improve children's nutrition and PA from Greece, the European Union, and internationally
- Introduction to high risk vs. population approaches to health behaviour change



**Lecture 8. Ethics of Influence**

- Overview of major debates concerning behavioural health policies targeting childhood nutrition and PA
- Ethical frameworks governing public health interventions and research trials

**Lecture 9: Social Influences on Childhood Nutrition and Physical Activity**

- Overview of family-related determinants and interventions for childhood nutrition and PA
- peer-group influences, social mimicry, social norms, role modelling and social support

**Lecture 10: School-based interventions for Childhood Nutrition and Physical Activity**

- Best-practices for school-based health promotion interventions with case studies
- Impact of better childhood nutrition and PA on academic outcomes and wellbeing

**Lecture 11: Personalized digital health for Children**

- Overview of digital health tools and gamification for promoting better childhood nutrition and PA
- Challenges and promise of digital media and health promotion for children
- Tools to measure diet and activity in digital environments, including ecological momentary assessment

**Lecture 12: Longitudinal Habit Formation and Behavioural Transitions into Adolescence and adulthood**

- Habit formation in early years and life transitions for sustained behaviour change
- Prevention vs. treatment – reviewing longitudinal research findings into adulthood
- Self-regulation skills and lifelong health

**Lecture 13: The Future of Behaviour Change for Childhood Nutrition and Physical Activity**

- Projected trends in childhood nutrition, PA and health outcomes to 2050
- Introduction to horizon scanning and futures thinking activities for nutrition and PA

#### 4. TEACHING AND LEARNING METHODS - ASSESSMENT

|                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i> | Distance learning using a combination of synchronous and asynchronous teaching.<br>Teaching includes: <ul style="list-style-type: none"> <li>• live online lectures</li> <li>• recorded lectures</li> <li>• interactive discussion sessions</li> <li>• case-based learning</li> <li>• independent study</li> </ul> These activities are supported through the university's digital platforms for teleconferencing and asynchronous learning. |
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>            | Communication with students is conducted through: <ul style="list-style-type: none"> <li>• weekly synchronous sessions</li> <li>• course discussion forums</li> <li>• email communication</li> <li>• scheduled virtual office hours</li> <li>• announcements on the digital learning platform</li> </ul>                                                                                                                                     |
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b>                | Student interaction is supported through: <ul style="list-style-type: none"> <li>• group discussion during live sessions</li> <li>• collaborative assignments</li> </ul>                                                                                                                                                                                                                                                                     |



| Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, x.a.                                                                                                                                                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>online discussion forums</li> <li>digital collaborative tools</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------|----------------------|----|--------------------------------|----|----------------------------|----|--------------------|----|--------------------------------------|----|---------------------------|----|--------------|-----------|
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br>Use of ICT in teaching, in laboratory training, in the communication with students                                                                                                                                                                                                                                                                                                                                                                          | ICT tools used in the course include:<br>Teleconference platform (Microsoft Teams)<br>Asynchronous learning platform (Moodle)<br>Collaborative digital tools<br>Online assessment systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Students are required to have: <ul style="list-style-type: none"> <li>computer or tablet</li> <li>reliable internet connection</li> <li>webcam and microphone</li> <li>access to university digital learning platforms</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | All assignments are checked using Turnitin or equivalent plagiarism detection software.<br>Academic misconduct may lead to disciplinary procedures according to university regulations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br>(1) The use of Artificial Intelligence is prohibited in all circumstances<br>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor<br>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature<br>(4) Students are free to use Artificial Intelligence                                                                                                                                      | The use of Artificial Intelligence tools is allowed only when clearly acknowledged and properly referenced.<br>Students remain responsible for the originality and accuracy of their work.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
| <b>ORGANISATION OF TEACHING</b><br>The mode and methods of teaching are described in detail.<br>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.<br><br>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.                      | <table> <tr> <th>Activity</th><th>Semester workload</th></tr> <tr> <td>Synchronous lectures</td><td>13</td></tr> <tr> <td>Asynchronous recorded lectures</td><td>26</td></tr> <tr> <td>Study of lecture materials</td><td>60</td></tr> <tr> <td>Literature reading</td><td>30</td></tr> <tr> <td>Case study assignment &amp; presentation</td><td>28</td></tr> <tr> <td>Study protocol assignment</td><td>43</td></tr> <tr> <td>Course total</td><td>200 hours</td></tr> </table>                                                                                                                                                                                                                                                                                                      | Activity | Semester workload | Synchronous lectures | 13 | Asynchronous recorded lectures | 26 | Study of lecture materials | 60 | Literature reading | 30 | Case study assignment & presentation | 28 | Study protocol assignment | 43 | Course total | 200 hours |
| Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Semester workload                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
| Synchronous lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
| Asynchronous recorded lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
| Study of lecture materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
| Literature reading                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
| Case study assignment & presentation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
| Study protocol assignment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
| Course total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 200 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |
| <b>STUDENT ASSESSMENT</b><br>Description of the assessment method<br><br>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other<br><br>Specifically-defined evaluation criteria are given, and if and where they are accessible to students. | <b>Description of the assessment method</b><br>Assessment of the course is designed to evaluate students' ability to critically analyse behavioural science evidence, apply theoretical knowledge to practical contexts, and understand complex causation.<br><br>The assessment strategy combines formative and summative assessment methods and includes written analytical work, application-based assignments and recorded presentations. All assessments are conducted in English.<br>The assessment approach emphasises critical thinking, evidence-based reasoning and applied knowledge, rather than factual recall.<br><br><b>Assessment methods include:</b> <ul style="list-style-type: none"> <li>analytical written report</li> <li>recorded oral presentation</li> </ul> |          |                   |                      |    |                                |    |                            |    |                    |    |                                      |    |                           |    |              |           |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"><li>critical evaluation of scientific literature</li><li>problem-solving tasks</li><li>participation in online learning activities</li></ul>                                                           |             |        |                                                 |     |                                                                    |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------|-------------------------------------------------|-----|--------------------------------------------------------------------|-----|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <table><tr><th>Assessments</th><th>Weight</th></tr><tr><td>Analytical written report – evaluation protocol</td><td>60%</td></tr><tr><td>Case study and problem-solving task and recorded oral presentation</td><td>40%</td></tr></table> | Assessments | Weight | Analytical written report – evaluation protocol | 60% | Case study and problem-solving task and recorded oral presentation | 40% |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Assessments                                                                                                                                                                                                                              | Weight      |        |                                                 |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Analytical written report – evaluation protocol                                                                                                                                                                                          | 60%         |        |                                                 |     |                                                                    |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Case study and problem-solving task and recorded oral presentation                                                                                                                                                                       | 40%         |        |                                                 |     |                                                                    |     |
| <p><b>Description of assessment tasks</b></p> <p><b>Case study and problem-solving task and recorded oral presentation (50%)</b><br/>Students complete a short, applied task analysing a real-world scenario related to behaviour change for childhood nutrition and health</p> <p>The task may involve:</p> <ul style="list-style-type: none"><li>reviewing an existing challenge or case study</li><li>conducting a diagnosis of behavioural determinants</li><li>developing a theory-based intervention</li><li>recording a ‘pitch’ presentation for the project</li></ul> <p>Submission format:<br/>10-12 slide evaluation ‘pitch’ deck with references<br/>10 min recorded presentation ‘pitch’ for the project</p> <p><b>Analytical written report - study protocol (50%)</b><br/>Students chose a specific childhood nutrition or physical activity challenge, a context and develop a concept for an evidence-based behaviour change intervention.</p> <p>Students develop an evaluation protocol for a field trial, including details of behaviour measures, study design and ethical considerations.</p> <p>Submission:<br/>1500-word evaluation protocol including key sections:<br/>Background &amp; rationale<br/>Theoretical grounding<br/>Intervention design<br/>Behavioural measurement<br/>Study design<br/>Ethical considerations<br/>Strengths and limitations</p> |                                                                                                                                                                                                                                          |             |        |                                                 |     |                                                                    |     |
| <p><b>Evaluation criteria</b><br/>Student performance is evaluated according to the following criteria:</p> <ul style="list-style-type: none"><li>quality and relevance of scientific literature</li><li>critical analysis and evaluation of evidence</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                          |             |        |                                                 |     |                                                                    |     |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>• application of knowledge and behavioural theory to intervention design</li> <li>• interpretation of data or case study</li> <li>• clarity and structure of written work</li> <li>• quality of presentation and communication.</li> </ul> <p><b>Accessibility of evaluation criteria</b><br/>Detailed assessment guidelines, marking rubrics and submission instructions are made available to students through the course digital learning platform at the beginning of the semester. Students receive written feedback following submission of each assessment.</p> |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 5. RECOMMENDED BIBLIOGRAPHY

- Suggested bibliography:

The following textbooks and guidelines provide an overview of the major theories, methods and practices associated with behavioural science for health behaviour change. Additional scientific articles will be provided throughout the course.

### Behaviour change theories

- *Nudge: Improving Decisions About Health, Wealth, and Happiness* – Richard Thaler & Cass Sunstein. <https://yalebooks.yale.edu/book/9780300262285/nudge/>
- *Thinking Fast and Slow* - Daniel Kahneman. <https://www.penguin.co.uk/books/56314/thinking-fast-and-slow-by-kahneman-daniel/9780141033570>
- *The Behaviour Change Wheel: A Guide to Designing Interventions* – Susan Michie et al. <https://www.behaviourchangewheel.com/>
- *The Handbook of Behavior Change* - Martin S. Hagger, Linda D. Cameron, Kyra Hamilton, Nelli Hankonen, Taru Lintunen. <https://www.cambridge.org/core/books/handbook-of-behavior-change/BD76D0E53DB1BC2EE8C53C1603D45E6A>
- *Predicting and Changing Health Behaviour: Research and Practice with Social Cognition Models* – Marc Conner & Paul Norman. <https://backstory.london/products/9780335263783?utm>
- *Behavioural Science in Public Health* – Benedict Howell. <https://www.primedpublishing.com/View.aspx?id=1892&utm>

### Behaviour change frameworks

- *The Behavior Change Technique Taxonomy (v1)* - [https://digitalwellbeing.org/wp-content/uploads/2016/11/BCTTv1\\_PDF\\_version.pdf](https://digitalwellbeing.org/wp-content/uploads/2016/11/BCTTv1_PDF_version.pdf)
- *The behaviour change wheel: A new method for characterising and designing behaviour change interventions* - Susan Michie, Maartje M van Stralen, Robert West. <https://pmc.ncbi.nlm.nih.gov/articles/PMC3096582/>
- *The COM-B model of behaviour* - [The COM-B Website](https://www.com-b.org/)
- *Intervention Mapping: Theory- and Evidence-Based Health Promotion Program Planning: Perspective and Examples* - Maria Fernandez, Robert A C Ruiter, Christine M Markham, Gerjo Kok. <https://pmc.ncbi.nlm.nih.gov/articles/PMC6702459/>

### Public Health intervention guidelines

- National Institute for Health and Care Excellence – Behaviour change and public health guidelines - <https://www.nice.org.uk/guidance/ph49>
- A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance - Skivington K, Matthews L, Simpson S A, Craig P, Baird J, Blazeby J M et al. <https://www.bmj.com/content/374/bmj.n2061>
- RE-AIM framework - RE-AIM – Home – Reach Effectiveness Adoption Implementation Maintenance

### Behavioural measurement

- Measuring physical activity in children and adolescents for dietary surveys: practicalities, problems and pitfalls. Jennifer S. Mindell, Ngaire Coombs, Emmanuel Stamatakis. [PNS1300382 218..225](https://doi.org/10.1186/1479-5868-5-56)
- A comparison of direct versus self-report measures for assessing physical activity in adults: a systematic review. Stéphanie A Prince, Kristi B Adamo, Meghan E Hamel, Jill Hardt, Sarah Connor Gorber & Mark Tremblay - <https://link.springer.com/article/10.1186/1479-5868-5-56>
- Closing the Gap Between Physical Activity Intentions and Sustained Behavior: An Overview of Evidence. Ryan E. Rhodes and Carol Brennan - [https://journals.lww.com/acsm-esm/fulltext/2026/01000/closing\\_the\\_gap\\_between\\_physical\\_activity.4.aspx](https://journals.lww.com/acsm-esm/fulltext/2026/01000/closing_the_gap_between_physical_activity.4.aspx)
- Overview of systematic reviews on behavioral determinants of physical activity and healthy eating in schoolchildren. Giuliano Duarte Anselmi, Adriana Aparecida de Oliveira Barbosa, Gerson Ferrari, Anna Christina Pinheiro Fernandes, Jacqueline Araneda-Flores, Danée Arancibia González & Tito Pizarro-Quevedo - <https://www.nature.com/articles/s41598-025-19332-9>

### RCT & field designs & analysis

- How to Conduct a Randomized Controlled Trial, Ramandeep Kaur, Jie Li - <https://pmc.ncbi.nlm.nih.gov/articles/PMC10753608/>
- CONSORT2025 Statement: updated guideline for reporting randomised trials - <https://www.equator-network.org/reporting-guidelines/consort/>
- Developing and evaluating complex interventions: the new Medical Research Council guidance. Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M et al. - <https://www.bmj.com/content/bmj/337/bmj.a1655.full.pdf>
- Assessing causality in epidemiology: revisiting Bradford Hill to incorporate developments in causal thinking. Michal Shimonovich · Anna Pearce, Hilary Thomson, Katherine Keyes, Srinivasa Vittal Katikireddi - <https://link.springer.com/content/pdf/10.1007/s10654-020-00703-7.pdf>
- Field Trials of Health Interventions: A Toolbox. Smith PG, Morrow RH, Ross DA. [https://www.ncbi.nlm.nih.gov/books/NBK305515/pdf/Bookshelf\\_NBK305515.pdf](https://www.ncbi.nlm.nih.gov/books/NBK305515/pdf/Bookshelf_NBK305515.pdf)

### Key peer-reviewed academic references

- Aychiluhm et al. (2025) — Interventions for Childhood Central Obesity: A Systematic Review and Meta-Analysis of RCTs. <https://doi.org/10.1001/jamanetworkopen.2025.4331>
- Jacob et al. (2021) — A Systematic Review and Meta-Analysis of School-Based Obesity Prevention Interventions
- Int J Behav Nutr Phys Act - <https://link.springer.com/article/10.1186/s12966-020-01065-9>

- PLOS One Review (2015) — *Effectiveness of Interventions on Sustained Childhood Physical Activity* - <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0132935>
- Nally et al. (2021) — *Nutrition Interventions on Children's Nutritional Knowledge and Healthy Eating. Systematic Review of Dietary Interventions in Childhood (2019)*- <https://pmc.ncbi.nlm.nih.gov/articles/PMC8107859/>
- School-based Accelerometer-Assessed PA Interventions (2022) — *meta-analysis of accelerometer-measured PA and sedentary time in children* - <https://doi.org/10.1016/j.puhe.2022.10.004>

**Key peer-reviewed journals**

- Health Psychology
- Social Science & Medicine
- The Lancet Public Health
- Obesity Reviews
- Appetite
- *International Journal of Behavioral Nutrition and Physical Activity*

## UOEHUA005 - Digital Health Ecosystems in Schools and Families

### 1. GENERAL

|                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                       |                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>SCHOOL</b>                                                                                                                                                                                                                                                          | University of Exeter Medical School                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                       |                                                                                      |
| <b>ACADEMIC UNIT</b>                                                                                                                                                                                                                                                   | Department of Public Health and Sport Sciences                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                       |                                                                                      |
| <b>LEVEL OF STUDIES</b>                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                       |                                                                                      |
| <b>COURSE CODE</b>                                                                                                                                                                                                                                                     | UOEHUA005                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>SEMESTER</b>                                       | 3 <sup>rd</sup> Semester of Full-Time (FT)<br>3 <sup>rd</sup> Year of Part-Time (PT) |
| <b>COURSE TITLE</b>                                                                                                                                                                                                                                                    | Digital Health Ecosystems in Schools and Families                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                       |                                                                                      |
| <b>INDEPENDENT TEACHING ACTIVITIES</b><br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>WEEKLY TEACHING HOURS</b>                          | <b>CREDITS</b>                                                                       |
| Lectures                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month | 7.5                                                                                  |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                       |                                                                                      |
| <b>COURSE TYPE</b><br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | This course provides students with an advanced understanding of digital health ecosystems designed to support the health, wellbeing, development and educational outcomes of children, adolescents and families. The module critically examines the integration of digital health technologies, artificial intelligence, wearable devices, remote monitoring, behavioural science, public health, paediatric healthcare and school-based systems. The module reflects current international priorities in digital health, which emphasise strengthening health systems through digital technologies, supported by appropriate financial, organisational, human and technological resources. It also reflects emerging paediatric digital health priorities, including child-centred design, evaluation of digital interventions, benefits and risks for children, and the development of digital ecosystems for paediatric health and wellbeing. |                                                       |                                                                                      |
| <b>PREREQUISITE COURSES</b>                                                                                                                                                                                                                                            | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                       |                                                                                      |
| <b>LANGUAGE OF INSTRUCTION AND OF ASSESSMENT</b>                                                                                                                                                                                                                       | English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                       |                                                                                      |
| <b>MODE OF TEACHING</b><br><i>in-person (%)<br/>synchronous distance learning (%)<br/>asynchronous distance learning (%)<br/>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                                     | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%): 20%<br><br>Synchronous teaching is delivered through an approved teleconference platform, while asynchronous learning is delivered through the university learning management system.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                                                                                      |
| <b>AVAILABILITY TO ERASMUS STUDENTS</b>                                                                                                                                                                                                                                | Yes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                       |                                                                                      |

|                             |                                         |
|-----------------------------|-----------------------------------------|
| <b>COURSE WEBSITE (URL)</b> | HUA Digital Learning Platform (Moodle). |
|-----------------------------|-----------------------------------------|

## 6. LEARNING OUTCOMES

### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Brief Guide for drafting Learning Outcomes

On successful completion of this course students will be able to:

- Critically evaluate current evidence relating to digital health ecosystems for children, adolescents, schools and families.
- Demonstrate understanding of digital health technologies, wearable systems, mobile applications, dashboards, AI-supported tools and remote monitoring systems used in school and family settings.
- Critically examine behavioural science, implementation science, public health and educational theories underpinning digital health interventions.
- Evaluate the effectiveness, feasibility, acceptability and scalability of digital health interventions targeting movement behaviours, nutrition, mental health, sleep, wellbeing and family health.
- Understand ethical, legal, safeguarding and data governance considerations associated with digital health technologies involving children and adolescents.
- Critically evaluate research methodologies and implementation frameworks relevant to paediatric digital health and school-based digital ecosystems.

### Skills

Students will be able to:

- Critically analyse digital health opportunities and challenges within schools, families and child health systems.
- Apply theoretical and evidence-based approaches to the design of digital health interventions and ecosystems.
- Interpret digital health data, implementation outcomes, user engagement metrics and evaluation studies.
- Develop evidence-based recommendations for school and family digital health programmes.
- Design practical, ethical and scalable digital ecosystem approaches for child and adolescent health promotion.
- Critically evaluate digital engagement, accessibility, interoperability, safeguarding and health equity issues.

### Competences

Students will be able to:

- Apply interdisciplinary perspectives to digital health ecosystem development.
- Critically evaluate digital health systems implemented within schools, communities and family environments.
- Demonstrate ethical and professional awareness regarding digital health, AI, child data protection and responsible innovation.
- Integrate policy, behavioural science, public health, paediatric healthcare and educational perspectives into digital health strategies.
- Communicate evidence-based digital health concepts effectively in academic, professional and entrepreneurial contexts.
- Recognise implementation barriers and facilitators influencing adoption, sustainability and commercial translation of digital health ecosystems.

### General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma



Supplement and are stated below), at which of the following does the course aim?

Search, analysis and synthesis of data and information, with the use of the necessary technology

Adaptability to new situations

Decision-making

Working independently

Team work

Working in an international environment

Working in an interdisciplinary environment

Production of new research ideas

Project planning and management

Respect for difference and multiculturalism

Respect for the natural environment

Showing social, professional and ethical responsibility and sensitivity to gender issues

Criticism and self-criticism

Production of free, creative and inductive thinking

...

Other...

...

The course aims to promote:

- Search, analysis and synthesis of data and information, with the use of the necessary technology
- Adaptability to new situations
- Decision-making
- Working independently
- Team work
- Working in an international environment
- Working in an interdisciplinary environment
- Production of new research ideas
- Project planning and management
- Respect for difference and multiculturalism
- Respect for ethical, legal and safeguarding principles
- Showing social, professional and ethical responsibility and sensitivity to gender and equity issues
- Criticism and self-criticism
- Production of free, creative and inductive thinking
- Digital literacy and technological competence
- Responsible use of AI and data-driven health technologies
- Innovation and entrepreneurship in child health and wellbeing

## 7. COURSE SYLLABUS

This course introduces students to the design, implementation and evaluation of digital health ecosystems for children, adolescents, schools and families. It examines how digital platforms, wearable technologies, AI-supported tools, digital education systems and family-centred interventions can support prevention, monitoring, behaviour change and wellbeing promotion.

The module is informed by global digital health priorities from WHO, paediatric digital health developments from RCPCCH and BRCCCH, and evidence on children's use of digital technologies in learning and development from Open University OpenLearn. The Open University course specifically examines children's use of mobile applications, digital games and computers, and discusses debates around screen time, learning and development.

### Indicative Weekly Topics

#### Lecture 1 – Introduction to Digital Health Ecosystems

- Definitions of digital health and digital ecosystems
- Digital transformation in child health, education and family wellbeing
- Schools and families as connected health environments
- Public health, prevention and health system perspectives

#### Lecture 2 – Children's Experiences with Digital Technologies

- Children's use of apps, games, computers and online platforms
- Digital learning, play and development
- Screen time debates and evidence interpretation
- Digital literacy for children, parents and educators

### **Lecture 3 – Behavioural Science and Digital Health**

- COM-B and Behaviour Change Wheel
- Digital nudging and persuasive design
- Gamification and engagement
- Behaviour change maintenance in school and family settings

### **Lecture 4 – Wearables, Sensors and Remote Monitoring**

- Accelerometers, smartwatches and wearable devices
- Sleep, physical activity and sedentary behaviour monitoring
- Digital biomarkers and physiological signals
- Feasibility, acceptability and data quality

### **Lecture 5 – School-Based Digital Health Systems**

- School health dashboards
- Digital screening and early identification
- Integration with school wellbeing and safeguarding systems
- Teacher, parent and student-facing reports

### **Lecture 6 – Family-Centred Digital Health**

- Parent engagement and family behaviour change
- Home-based digital interventions
- Digital coaching and feedback loops
- Co-design with families and children

### **Lecture 7 – Paediatric Digital Health and Clinical Integration**

- Digital paediatrics and child health innovation
- Connecting schools, families and healthcare systems
- Referral pathways and hybrid care models
- Lessons from RCPCH and paediatric digital health systems

### **Lecture 8 – Artificial Intelligence in Child and Family Health**

- AI-supported risk stratification
- Personalised recommendations
- Predictive analytics and child wellbeing
- Responsible, explainable and safe AI

### **Lecture 9 – Digital Mental Health and Wellbeing**

- Youth digital mental health tools
- Social media, wellbeing and online risk
- Digital resilience and safeguarding
- Integration with school mental health systems

### **Lecture 10 – Nutrition, Physical Activity and Lifestyle Technologies**

- Digital dietary assessment
- Movement behaviour platforms
- Obesity prevention and family lifestyle tools
- Integration of health data into personalised feedback

### **Lecture 11 – Implementation Science and Real-World Evaluation**

- Feasibility, acceptability and usability
- RE-AIM and implementation frameworks
- Evaluation across schools and families
- Scaling digital health ecosystems

### **Lecture 12 – Ethics, Governance and Child Data Protection**

- GDPR and child data protection
- Digital safeguarding

- Equity, access and inclusion
- Commercialisation, trust and responsible innovation

### Lecture 13 – Future Digital Health Ecosystems and Market Translation

- Precision public health
- AI-enabled school and family dashboards
- Digital twins, remote monitoring and connected care
- Commercial models for school, family, municipality and corporate wellbeing ecosystems

## 8. TEACHING AND LEARNING METHODS - ASSESSMENT

|                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i>                                                                                                                       | Distance learning using a combination of synchronous and asynchronous teaching.<br>Teaching includes: <ul style="list-style-type: none"> <li>• live online lectures</li> <li>• recorded lectures</li> <li>• interactive discussion sessions</li> <li>• case-based learning</li> <li>• digital ecosystem design workshops</li> <li>• guided independent study</li> <li>• applied market and implementation analysis</li> </ul> These activities are supported through the university's digital platforms for teleconferencing and asynchronous learning. |
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                  | Communication with students is conducted through: <ul style="list-style-type: none"> <li>• weekly synchronous sessions</li> <li>• course discussion forums</li> <li>• email communication</li> <li>• scheduled virtual office hours</li> <li>• announcements on the digital learning platform</li> </ul>                                                                                                                                                                                                                                                |
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, κ.α.</i> | Communication with students is conducted through: <ul style="list-style-type: none"> <li>• weekly synchronous sessions</li> <li>• course discussion forums</li> <li>• email communication</li> <li>• scheduled virtual office hours</li> <li>• announcements on the digital learning platform</li> </ul>                                                                                                                                                                                                                                                |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                          | ICT tools used in the course include: <ul style="list-style-type: none"> <li>• Teleconference platform: Microsoft Teams / Zoom</li> <li>• Asynchronous learning platform Moodle</li> <li>• Collaborative digital tools</li> <li>• Online assessment systems</li> <li>• Digital health dashboards and case-study platforms</li> <li>• AI-supported tools for learning, literature search and digital ecosystem design, where appropriately acknowledged</li> </ul>                                                                                       |
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                   | Students are required to have: <ul style="list-style-type: none"> <li>• computer or tablet</li> <li>• reliable internet connection</li> <li>• webcam and microphone</li> <li>• access to university digital learning platforms</li> </ul>                                                                                                                                                                                                                                                                                                               |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                          | All assignments are checked using Turnitin or equivalent plagiarism detection software.<br>Academic misconduct may lead to disciplinary procedures according to university regulations.                                                                                                                                                                                                                                                                                                                                                                 |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br><i>(1) The use of Artificial Intelligence is prohibited in all circumstances</i>                                                                     | The use of Artificial Intelligence tools is allowed only when clearly acknowledged and properly referenced.                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| <p>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor</p> <p>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature</p> <p>(4) Students are free to use Artificial Intelligence</p>                                                                                                                                                                                                                                                        | <p>Students remain responsible for the originality, accuracy, validity and academic integrity of their work.</p> <p>Use of AI must not replace critical analysis, independent reasoning or appropriate citation of scientific evidence.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------|--------------------------|-----|---------------------------------------------|-----|----------------------------|----|--------------------|----|---------------------------------------|----|----------------------------|----|--------------------|----|--------------|-----------|
| <p><b>ORGANISATION OF TEACHING</b></p> <p>The mode and methods of teaching are described in detail.</p> <p>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.</p> <p>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.</p>                  | <table border="1"> <thead> <tr> <th>Activity</th><th>Semester workload</th></tr> </thead> <tbody> <tr> <td>Synchronous lectures</td><td>13</td></tr> <tr> <td>Asynchronous recorded lectures</td><td>26</td></tr> <tr> <td>Study of lecture materials</td><td>55</td></tr> <tr> <td>Literature reading</td><td>35</td></tr> <tr> <td>Digital ecosystem case-study analysis</td><td>20</td></tr> <tr> <td>Preparation of assignments</td><td>25</td></tr> <tr> <td>Assignment writing</td><td>26</td></tr> <tr> <td>Course total</td><td>200 hours</td></tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Activity   | Semester workload | Synchronous lectures     | 13  | Asynchronous recorded lectures              | 26  | Study of lecture materials | 55 | Literature reading | 35 | Digital ecosystem case-study analysis | 20 | Preparation of assignments | 25 | Assignment writing | 26 | Course total | 200 hours |
| Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Semester workload                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
| Synchronous lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
| Asynchronous recorded lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
| Study of lecture materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
| Literature reading                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
| Digital ecosystem case-study analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
| Preparation of assignments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
| Assignment writing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
| Course total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 200 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
| <p><b>STUDENT ASSESSMENT</b></p> <p>Description of the assessment method</p> <p>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other</p> <p>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</p> | <p>Assessment of the course is designed to evaluate students' ability to critically analyse digital health evidence, apply theoretical knowledge to real-world school and family contexts, and design feasible, ethical and scalable digital health ecosystem solutions.</p> <p>The assessment strategy combines formative and summative assessment methods and includes written analytical work, applied digital ecosystem analysis and market-facing implementation thinking. All assessments are conducted in English.</p> <p>The assessment approach emphasises critical thinking, evidence-based reasoning, applied implementation, ethical awareness and translational relevance.</p> <p><b>Assessment methods include:</b></p> <ul style="list-style-type: none"> <li>• analytical written essay</li> <li>• digital health ecosystem case study</li> <li>• literature review</li> <li>• critical evaluation of scientific evidence</li> <li>• implementation and market analysis</li> <li>• problem-solving tasks</li> <li>• participation in online learning activities</li> </ul> <p><b>Assessments</b></p> <table border="1"> <thead> <tr> <th>Assessment</th><th>Weight</th></tr> </thead> <tbody> <tr> <td>Written analytical essay</td><td>50%</td></tr> <tr> <td>Applied digital health ecosystem case study</td><td>50%</td></tr> </tbody> </table> <p><b>Description of assessment tasks</b></p> <p><b>Written analytical essay – 50%</b></p> <p>Students critically evaluate a contemporary issue related to digital health ecosystems for children, adolescents, schools or families using current scientific literature, theoretical frameworks and policy guidance.</p> <p>Indicative topics may include:</p> <ul style="list-style-type: none"> <li>• AI in child health and wellbeing</li> <li>• school health dashboards</li> <li>• digital mental health for adolescents</li> </ul> | Assessment | Weight            | Written analytical essay | 50% | Applied digital health ecosystem case study | 50% |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
| Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
| Written analytical essay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 50%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |
| Applied digital health ecosystem case study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 50%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                   |                          |     |                                             |     |                            |    |                    |    |                                       |    |                            |    |                    |    |              |           |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>• wearables and child health monitoring</li> <li>• digital inequalities and child data protection</li> <li>• family-centred digital health interventions</li> <li>• digital technologies, screen time and child development</li> </ul> <p>Submission format:<br/>2,000-word analytical essay.</p> <p><b>Applied digital health ecosystem case study – 50%</b><br/>Students analyse or design a real-world digital health ecosystem for schools, families, municipalities or paediatric health services.<br/>The task may involve:</p> <ul style="list-style-type: none"> <li>• analysing a digital health product, platform or ecosystem</li> <li>• designing a school-family health dashboard</li> <li>• developing an implementation plan for a child health digital platform</li> <li>• evaluating engagement, ethics, safeguarding and scalability</li> <li>• proposing a market-facing digital health solution relevant to Delta Life-type services</li> </ul> <p>Submission format:<br/>1,500-word structured case-based essay.</p> <p><b>Optional formative assessment</b><br/>Students may prepare a formative concept map or ecosystem map showing how digital tools, users, data flows, intervention components, governance and outcomes interact within a school-family digital health ecosystem.<br/>Equivalent length:<br/>750-word equivalent.<br/>Feedback method:<br/>Written feedback.</p> <p><b>Evaluation criteria</b><br/>Student performance is evaluated according to the following criteria:</p> <ul style="list-style-type: none"> <li>• quality and relevance of scientific literature</li> <li>• critical analysis and evaluation of evidence</li> <li>• application of theory and evidence to digital ecosystem design</li> <li>• understanding of implementation, ethics and data governance</li> <li>• interpretation of digital health case studies</li> <li>• feasibility and scalability of recommendations</li> <li>• clarity and structure of written work</li> <li>• quality of scientific and professional communication</li> </ul> <p><b>Accessibility of evaluation criteria</b><br/>Detailed assessment guidelines, marking rubrics and submission instructions are made available to students through the course digital learning platform at the beginning of the semester.<br/>Students receive written feedback following submission of each assessment.</p> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 9. RECOMMENDED BIBLIOGRAPHY

- *Suggested bibliography:*

The following textbooks, guidelines, policy documents and scientific resources provide an overview of digital health, paediatric digital health, child development in digital environments, behavioural science, implementation science, ethics, AI and digital health ecosystems in schools and families. Additional scientific articles and contemporary reports will be provided throughout the course.

### Digital Health Strategy, Policy and Ecosystem Frameworks

World Health Organization (WHO)

Digital Health

<https://www.who.int/health-topics/digital-health>

World Health Organization (WHO)

Global Strategy on Digital Health 2020–2025

<https://www.who.int/publications/i/item/9789240020924>

European Commission

Digital Health and Care

[https://health.ec.europa.eu/ehealth-digital-health-and-care/digital-health-and-care\\_en](https://health.ec.europa.eu/ehealth-digital-health-and-care/digital-health-and-care_en)

OECD

Digital Health

<https://www.oecd.org/health>

PAHO

8 Principles for Digital Transformation of Public Health

<https://www.paho.org/en/information-systems-and-digital-health/8-principles-digital-transformation-public-health>

Children's Experiences with Digital Technologies

<https://www.open.edu/openlearn/education-development/childrens-experiences-digital-technologies/content-section-0>

Childhood in the Digital Age

<https://www.open.edu/openlearn>

UNICEF

Children in a Digital World

<https://www.unicef.org>

UNICEF

The State of the World's Children: Children in a Digital World

<https://www.unicef.org/reports/state-worlds-children-2017>

Ofcom

Children and Parents: Media Use and Attitudes Reports

<https://www.ofcom.org.uk>

Digital Futures Commission

Children, Technology and Wellbeing Reports

<https://www.5rightsfoundation.com>

Paediatric Digital Health and Clinical Innovation

Royal College of Paediatrics and Child Health (RCPCH)

Digital Health

<https://www.rcpch.ac.uk/topic/digital-health>

Royal College of Paediatrics and Child Health (RCPCH)

Digital Health Hub

<https://www.rcpch.ac.uk/resources/digital-health-hub>

Royal College of Paediatrics and Child Health (RCPCH)

Digital Paediatrics 2025

<https://www.rcpch.ac.uk/resources/digital-paediatrics-2025>

Basel Research Centre for Child Health

BRCCH Course on Foundations of Paediatric Digital Health

<https://brc.ch/brcch-course-on-foundations-of-paediatric-digital-health/>

NIHR Children and Young People MedTech Co-operative

Digital Health and Child Health Innovation Resources

<https://www.cypmedtech.nihr.ac.uk>

Digital Health Technologies and Evaluation

CONSORT-EHEALTH

Reporting Guidelines for Digital Health Trials

<https://www.jmir.org>

mHealth Evidence Reporting and Assessment Checklist

<https://www.jmir.org>

RE-AIM Framework

<https://re-aim.org>

Medical Research Council

Developing and Evaluating Complex Interventions

<https://www.ukri.org>

Digital Health Evidence Standards Framework

National Institute for Health and Care Excellence

<https://www.nice.org.uk>

#### Behaviour Change, Engagement and Implementation

Michie, S., Atkins, L., & West, R.

The Behaviour Change Wheel: A Guide to Designing Interventions.

Michie, S., van Stralen, M. M., & West, R.

The Behaviour Change Wheel: A New Method for Characterising and Designing Behaviour Change Interventions.

Hagger, M. S., Cameron, L. D., Hamilton, K., Hankonen, N., & Lintunen, T.

The Handbook of Behavior Change. Cambridge University Press.

Fernandez, M. E., Ruiter, R. A. C., Markham, C. M., & Kok, G.

Intervention Mapping: Theory- and Evidence-Based Health Promotion Program Planning.

Skivington, K., Matthews, L., Simpson, S. A., et al.

A New Framework for Developing and Evaluating Complex Interventions: Update of Medical Research Council Guidance.

AI, Ethics and Data Governance

European Commission

Ethics Guidelines for Trustworthy AI

<https://digital-strategy.ec.europa.eu>

European Union

EU AI Act

<https://artificialintelligenceact.eu>

UK Information Commissioner's Office

Children's Code / Age Appropriate Design Code

<https://ico.org.uk>

WHO

Ethics and Governance of Artificial Intelligence for Health

<https://www.who.int>

WHO

Regulatory Considerations on Artificial Intelligence for Health

<https://www.who.int>

#### Books

Topol, E. (2019). Deep Medicine: How Artificial Intelligence Can Make Healthcare Human Again. Basic Books.

Wachter, R. M. (2015). The Digital Doctor: Hope, Hype, and Harm at the Dawn of Medicine's Computer Age. McGraw-Hill.

Piwek, L., Ellis, D. A., Andrews, S., & Joinson, A. (2016). The Rise of Consumer Health Wearables: Promises and Barriers. PLOS Medicine.

Lupton, D. (2016). The Quantified Self. Polity Press.

Lupton, D. (2020). Data Selves: More-than-Human Perspectives. Polity Press.

Greenhalgh, T., Wherton, J., Papoutsis, C., et al. Digital health implementation and complexity science publications.

#### Key Peer-Reviewed Journals

- Digital Health
- Journal of Medical Internet Research
- JMIR Pediatrics and Parenting
- npj Digital Medicine
- The Lancet Digital Health
- BMC Digital Health
- Frontiers in Digital Health
- International Journal of Medical Informatics
- Journal of Adolescent Health
- Child and Adolescent Mental Health
- School Mental Health
- International Journal of Behavioral Nutrition and Physical Activity

#### Students should consult

- PubMed – <https://pubmed.ncbi.nlm.nih.gov>
- PsycINFO – <https://www.apa.org/pubs/databases/psycinfo>
- Web of Science – <https://www.webofscience.com>
- Scopus – <https://www.scopus.com>
- Google Scholar – <https://scholar.google.com>
- IEEE Xplore – <https://ieeexplore.ieee.org>
- ACM Digital Library – <https://dl.acm.org>



## HUAUOE006 - Biostatistics, Research Methodology & Ethics

### 1. GENERAL

|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                |          |                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------|
| SCHOOL                                                                                                                                                                                                                                                          | School of Health Science and Education, Harokopio University                                                                                                                                                                                                                                   |          |                                                                                      |
| ACADEMIC UNIT                                                                                                                                                                                                                                                   | Department of Nutrition and Dietetics                                                                                                                                                                                                                                                          |          |                                                                                      |
| LEVEL OF STUDIES                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                                   |          |                                                                                      |
| COURSE CODE                                                                                                                                                                                                                                                     | HUAUOE006                                                                                                                                                                                                                                                                                      | SEMESTER | 1 <sup>st</sup> Semester of Full-Time (FT)<br>1 <sup>st</sup> Year of Part-Time (PT) |
| COURSE TITLE                                                                                                                                                                                                                                                    | Biostatistics, Research Methodology & Ethics                                                                                                                                                                                                                                                   |          |                                                                                      |
| INDEPENDENT TEACHING ACTIVITIES<br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> | WEEKLY TEACHING HOURS                                                                                                                                                                                                                                                                          | CREDITS  |                                                                                      |
| Lectures                                                                                                                                                                                                                                                        | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month                                                                                                                                                                                                                                          | 7.5      |                                                                                      |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                       |                                                                                                                                                                                                                                                                                                |          |                                                                                      |
| COURSE TYPE<br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | General quantitative background                                                                                                                                                                                                                                                                |          |                                                                                      |
| PREREQUISITE COURSES                                                                                                                                                                                                                                            | None                                                                                                                                                                                                                                                                                           |          |                                                                                      |
| LANGUAGE OF INSTRUCTION AND OF ASSESSMENT                                                                                                                                                                                                                       | English                                                                                                                                                                                                                                                                                        |          |                                                                                      |
| MODE OF TEACHING<br><i>in-person (%)<br/>synchronous distance learning (%)<br/>asynchronous distance learning (%)<br/>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                                     | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%): 20%<br><br>Synchronous distance learning is delivered through a leading collaboration platform, while asynchronous learning is delivered through the HUA Moodle learning management system. |          |                                                                                      |
| AVAILABILITY TO ERASMUS STUDENTS                                                                                                                                                                                                                                | Yes.                                                                                                                                                                                                                                                                                           |          |                                                                                      |
| COURSE WEBSITE (URL)                                                                                                                                                                                                                                            | HUA Digital Learning Platform (Moodle).                                                                                                                                                                                                                                                        |          |                                                                                      |

### 2. LEARNING OUTCOMES

#### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Brief Guide for drafting Learning Outcomes

The course introduces the fundamental principles for the design, analysis and interpretation of

studies in biomedical and public health research. Students will develop a solid foundation in the use of statistical methods for analyzing biological data, evaluating evidence, and drawing valid scientific conclusions. The course also emphasizes the ethical standards governing research involving human participants, data integrity, and responsible reporting. By combining methodological rigor with ethical awareness, the course equips students to conduct transparent, reproducible, and socially responsible research that contributes to improved health outcomes and evidence-based decision-making in medicine and public health.

Upon successful completion of the course students are expected to have developed:

- A comprehensive Understanding of core biostatistical principles relevant to biomedical and public health research.
- Proficiency in study design, including both experimental and observational approaches.
- Competence in data analysis and interpretation using appropriate statistical methods and software (Introduction to R and STATA through guided labs using real-world datasets).
- The Ability to critically evaluate scientific literature and assess the validity of research findings.
- Knowledge of research ethics, including informed consent, confidentiality, and responsible data management.
- Awareness of ethical challenges in biomedical research and strategies to address them.
- The ability to communicate statistical findings clearly in both written and oral scientific formats.
- A Commitment to integrity, transparency, and reproducibility in research practice.

### Knowledge

Students will be able to:

- Explain the methodological characteristics of different biomedical and public health studies.
- Describe, apply and interpret commonly used statistical methods in research.

### Skills

Students will develop the ability to:

- Design appropriate biomedical and public health studies, including selecting suitable methodologies and sampling strategies.
- Critically evaluate scientific literature and interpret research findings.
- Apply ethical principles in research involving human data, ensuring confidentiality, integrity, and responsible conduct.
- Present statistical results and research findings clearly in written and oral scientific communications.

### Competences

Students will demonstrate the capacity to:

- Apply appropriate statistical techniques for the analysis and interpretation of biomedical and public health data.
- Incorporate ethical principles and standards into the design, implementation, and reporting of biostatistical research.
- Synthesize statistical evidence and research findings to inform clinical or public health decision-making.

The learning outcomes correspond to Level 7 of the European Qualifications Framework (EQF).

### General Competences

*Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?*

Search, analysis and synthesis of data and information,  
with the use of the necessary technology  
Adaptability to new situations  
Decision-making  
Working independently  
Team work

Project planning and management  
Respect for difference and multiculturalism  
Respect for the natural environment  
Showing social, professional and ethical responsibility and  
sensitivity to gender issues  
Criticism and self-criticism

|                                                                                                                                                                                                                                          |                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Working in an international environment<br>Working in an interdisciplinary environment<br>Production of new research ideas                                                                                                               | Production of free, creative and inductive thinking<br>... ..<br>Other...<br>... .. |
| Search, analysis and synthesis of data and information, with the use of the necessary technology<br>Decision-making<br>Production of new research ideas<br>Criticism and self-criticism<br>Production of creative and inductive thinking |                                                                                     |

### 3. COURSE SYLLABUS

The course introduces the fundamental principles of biostatistical methods and ethics in biomedical and public health research. The students will explore key concepts in study design, data collection, statistical analysis, and interpretation of health-related data. The course also addresses ethical considerations in research practice, including the protection of human participants, data confidentiality, research integrity, and transparent reporting. By combining theoretical foundations with practical applications, students will develop the skills to critically evaluate scientific evidence and apply appropriate statistical methods while adhering to ethical standards in health research.

Key topics include

- Fundamentals of Research Methodology
- Research Ethics and Data Protection
- Causation, Causal Inference and Bias
- Study Design; Observational & Interventional studies
- Measures of Disease Frequency and Data Visualization
- Measures of Effect and Measures of Association
- Fundamentals of Statistical Analysis and Inference
- Hypothesis Testing
- Regression Analysis and Model Building; Continuous Outcomes
- Categorical Data Analysis and Regression
- Survival Analysis and Modeling
- Meta-Analysis and Evidence Synthesis

### 4. TEACHING AND LEARNING METHODS - ASSESSMENT

|                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i>                                                                                                                       | Distance learning using a combination of synchronous and asynchronous teaching.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                  | Student communication is conducted through a structured combination of synchronous and asynchronous methods, supported by digital technologies and the HUA online learning platform (Moodle). This includes scheduled weekly live (synchronous) sessions, designated virtual office hours, and regular interaction through course discussion forums and electronic correspondence. In addition, course announcements and learning materials are systematically uploaded on the Moodle platform, ensuring organized communication throughout the duration of the course. |
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, κ.α.</i> | Student interaction is facilitated through the following channels: <ul style="list-style-type: none"> <li>• Group discussion during live sessions</li> <li>• Collaborative assignments</li> <li>• Online discussion forums</li> <li>• Digital collaborative tools</li> </ul>                                                                                                                                                                                                                                                                                            |

| <p><b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b></p> <p><i>Use of ICT in teaching, in laboratory training, in the communication with students</i></p>                                                                                                                                                                                                                                                                                                                                                                   | <p>The following ICT tools are used to support teaching, communication and assessment:</p> <ul style="list-style-type: none"> <li>• The collaboration platform Microsoft Teams for synchronous sessions</li> <li>• The HUA Asynchronous learning platform (Moodle)</li> <li>• Online assessment systems for administering examinations</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                           |          |    |                            |    |                    |    |                   |    |                     |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------|----------|----|----------------------------|----|--------------------|----|-------------------|----|---------------------|------------|
| <p><b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>Students are required to have access to the following:</p> <ul style="list-style-type: none"> <li>• A computer (desktop or laptop)</li> <li>• A reliable internet connection</li> <li>• A webcam and microphone</li> <li>• Access to the HUA digital learning platforms</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                           |          |    |                            |    |                    |    |                   |    |                     |            |
| <p><b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>Submitted assignments are subject to review through plagiarism detection software (e.g. Turnitin). Any form of Academic misconduct may result in disciplinary action in accordance with University regulations.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |                           |          |    |                            |    |                    |    |                   |    |                     |            |
| <p><b>ARTIFICIAL INTELLIGENCE POLICY</b></p> <p>(1) The use of Artificial Intelligence is prohibited in all circumstances</p> <p>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor</p> <p>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature</p> <p>(4) Students are free to use Artificial Intelligence</p>                                                                                                                          | <p>The use of Artificial Intelligence tools is permitted only when explicitly acknowledged and appropriately referenced.</p> <p>Students bear full responsibility for the originality and integrity of their work.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |                           |          |    |                            |    |                    |    |                   |    |                     |            |
| <p><b>ORGANISATION OF TEACHING</b></p> <p>The mode and methods of teaching are described in detail.</p> <p>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.</p> <p>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.</p>                  | <table border="1"> <thead> <tr> <th>Activity</th><th>Semester workload (hours)</th></tr> </thead> <tbody> <tr> <td>Lectures</td><td>39</td></tr> <tr> <td>Study of lecture materials</td><td>60</td></tr> <tr> <td>Data analysis labs</td><td>20</td></tr> <tr> <td>Independent study</td><td>81</td></tr> <tr> <td><b>Course total</b></td><td><b>200</b></td></tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Activity | Semester workload (hours) | Lectures | 39 | Study of lecture materials | 60 | Data analysis labs | 20 | Independent study | 81 | <b>Course total</b> | <b>200</b> |
| Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Semester workload (hours)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |                           |          |    |                            |    |                    |    |                   |    |                     |            |
| Lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 39                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                           |          |    |                            |    |                    |    |                   |    |                     |            |
| Study of lecture materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                           |          |    |                            |    |                    |    |                   |    |                     |            |
| Data analysis labs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                           |          |    |                            |    |                    |    |                   |    |                     |            |
| Independent study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 81                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                           |          |    |                            |    |                    |    |                   |    |                     |            |
| <b>Course total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>200</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                           |          |    |                            |    |                    |    |                   |    |                     |            |
| <p><b>STUDENT ASSESSMENT</b></p> <p>Description of the assessment method</p> <p>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other</p> <p>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</p> | <p><b>Assessment Overview</b></p> <p>Assessment in this course evaluates students' ability to apply biostatistical methods, critically interpret research findings, and address ethical considerations in biomedical and public health research. The focus is on analytical thinking, evidence-based reasoning, and the practical application of statistical and ethical principles. Students are expected to evaluate scientific studies, interpret data appropriately, and communicate research findings clearly while adhering to principles of responsible and ethical research conduct.</p> <p><b>Assessment Methods</b></p> <ul style="list-style-type: none"> <li>• Applied statistical report and presentation (70% of final grade)</li> <li>• Practice quizzes (30% of final grade)</li> </ul> <p><b>Description of Assessment Tasks</b></p> <p><u>Applied statistical report and presentation</u></p> |          |                           |          |    |                            |    |                    |    |                   |    |                     |            |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Students will prepare a scientific report analyzing a study provided in the course, including the identification of key research questions. The report must detail the statistical methodology used, present results in suitable tables and figures, and their interpretation (approx. 2000 words). Students are also required to submit a 10-minute recorded presentation summarising the project and explaining the scientific rationale for the proposed intervention.</p> <p><b>Quiz</b><br/>Students will complete mid-term quizzes. Each quiz will consist of multiple-choice questions assessing understanding, application and interpretation of key concepts covered throughout the module.</p> <p><b>Evaluation criteria</b><br/>Student performance is evaluated according to the following criteria:</p> <ul style="list-style-type: none"> <li>• Quality and relevance of data analysis</li> <li>• Critical evaluation and interpretation of results</li> <li>• Clarity and structure of written work</li> <li>• Quality of presentation and communication</li> <li>• Accuracy of quiz responses.</li> </ul> <p><b>Accessibility of evaluation criteria</b><br/>Detailed assessment guidelines, marking rubrics and submission instructions will be provided on the course digital learning platform at the beginning of the semester.</p> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 5. RECOMMENDED BIBLIOGRAPHY

The following textbooks provide an overview of the scientific principles of the course. Additional scientific articles will be provided throughout the course.

- Daniel, W. W., & Cross, C. L. (2018). *Biostatistics: A foundation for analysis in the health sciences* (11th ed.). Wiley.
- Forthofer, R. N., Lee, E. S., & Hernandez, M. (2007). *Biostatistics: A guide to design, analysis, and discovery* (2nd ed.). Academic Press.
- Faizi, N., & Alvi, Y. (2022). *Biostatistics manual for health research: A practical guide to data analysis*. Elsevier.

## HUAUOE007 - Dietary Evaluation and Growth from Embryonic Age to Adulthood

### 1. GENERAL

|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                          |                                                       |                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------|
| SCHOOL                                                                                                                                                                                                                                                          | School of Health Science and Education, Harokopio University                                                                                                                                                                                                                             |                                                       |                                                                                      |
| ACADEMIC UNIT                                                                                                                                                                                                                                                   | Department of Nutrition and Dietetics                                                                                                                                                                                                                                                    |                                                       |                                                                                      |
| LEVEL OF STUDIES                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                             |                                                       |                                                                                      |
| COURSE CODE                                                                                                                                                                                                                                                     | HUAUOE007                                                                                                                                                                                                                                                                                | SEMESTER                                              | 1 <sup>st</sup> Semester of Full-Time (FT)<br>1 <sup>st</sup> Year of Part-Time (PT) |
| COURSE TITLE                                                                                                                                                                                                                                                    | Dietary Evaluation and Growth from Embryonic Age to Adulthood                                                                                                                                                                                                                            |                                                       |                                                                                      |
| INDEPENDENT TEACHING ACTIVITIES<br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> |                                                                                                                                                                                                                                                                                          | WEEKLY TEACHING HOURS                                 | CREDITS                                                                              |
| Lectures                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                          | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month | 7.5                                                                                  |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                       |                                                                                                                                                                                                                                                                                          |                                                       |                                                                                      |
| COURSE TYPE<br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | Specialization / skills development                                                                                                                                                                                                                                                      |                                                       |                                                                                      |
| PREREQUISITE COURSES                                                                                                                                                                                                                                            | None                                                                                                                                                                                                                                                                                     |                                                       |                                                                                      |
| LANGUAGE OF INSTRUCTION AND OF ASSESSMENT                                                                                                                                                                                                                       | English                                                                                                                                                                                                                                                                                  |                                                       |                                                                                      |
| MODE OF TEACHING<br><i>in-person (%)</i><br><i>synchronous distance learning (%)</i><br><i>asynchronous distance learning (%)</i><br><i>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                   | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%): 20%<br><br>Synchronous teaching is delivered through an approved teleconference platform, while asynchronous learning is delivered through the university learning management system. |                                                       |                                                                                      |
| AVAILABILITY TO ERASMUS STUDENTS                                                                                                                                                                                                                                | Yes                                                                                                                                                                                                                                                                                      |                                                       |                                                                                      |
| COURSE WEBSITE (URL)                                                                                                                                                                                                                                            | HUA Digital Learning Platform (Moodle).                                                                                                                                                                                                                                                  |                                                       |                                                                                      |

### 2. LEARNING OUTCOMES

#### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Brief Guide for drafting Learning Outcomes

The aim of the course is to provide an evidence-based understanding of dietary evaluation and human growth from the embryonic stage through to adulthood, with emphasis on fetal programming, physiological maturation, life-course health, and the practical application of nutritional assessment tools for individuals across gestation, infancy, childhood, and the transition into adult life.

Students are expected to develop the following:

#### Knowledge

- Understand the physiological mechanisms of fetal growth and fetal programming on lifelong health.
- Identify nutritional requirements across the life cycle: from gestation and lactation to childhood and adolescence.
- Critically analyze methods for dietary assessment (e.g., 24h recall, food diaries) and anthropometric measurement.
- Evaluate the impact of socio-economic and environmental factors on dietary intake.

#### Skills & Competences

- Apply anthropometric techniques (height, weight, BMI, skinfold) to monitor growth curves and malnutrition.
- Design evidence-based nutritional plans for specific life stages (e.g., weaning, pubertal growth spurt).
- Critically appraise the impact of diet trajectories from infancy to early adulthood on overall growth, development and metabolic health.

The learning outcomes correspond to Level 7 of the European Qualifications Framework (EQF).

#### General Competences

*Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?*

Search, analysis and synthesis of data and information, with the use of the necessary technology  
Adaptability to new situations  
Decision-making  
Working independently  
Team work  
Working in an international environment  
Working in an interdisciplinary environment  
Production of new research ideas

Project planning and management  
Respect for difference and multiculturalism  
Respect for the natural environment  
Showing social, professional and ethical responsibility and sensitivity to gender issues  
Criticism and self-criticism  
Production of free, creative and inductive thinking  
.....  
Other...  
.....

- Search, analysis and synthesis of data and information with the use of necessary technologies
- Adaptability to new situations
- Decision-making
- Working independently
- Team work
- Working in an international environment
- Working in an interdisciplinary environment
- Production of new research ideas
- Project planning and management
- Showing social, professional and ethical responsibility
- Criticism and self-criticism
- Production of creative and inductive thinking

### 3. COURSE SYLLABUS

This course introduces the scientific principles and applied practices of dietary evaluation and human growth from the embryonic stage through to adulthood. It examines nutritional requirements in relation to fetal programming, physiological maturation, energy metabolism, development, and health outcomes. Furthermore, it explores dietary assessment methodologies, anthropometric techniques, body composition, behavioral eating patterns, and medical considerations across the life course.

Key topics include:



- The architecture of growth and development: core indicators and biological, environmental and nutritional determinants
- Dietary assessment methodologies: from traditional surveys to smart tools
- Quantitative techniques for assessing physical growth and body composition
- Practical issues in assessing physical growth
- Prenatal nutrition, placental physiology, and fetal growth assessment
- Infant nutrition and critical windows of growth and development
- Childhood nutrition: Nutrient demands, evaluation of quality and adequacy and its links to growth and development
- Adolescence: Evaluating Rapid Growth, Hormonal Shifts, and Nutritional Adequacy
- Nutritional Biomarkers: Validating Dietary Data through Biological Measures
- Major disorders of growth: assessment, nutrient needs and dietary support
- Major disorders of development and mental health: assessment, nutrient needs and dietary support
- Diet and overall lifestyle in relation to metabolic health during the whole spectrum of growth
- Adult health and its association to diet and growth parameters during all stages of growth and development

#### 4. TEACHING AND LEARNING METHODS - ASSESSMENT

|                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i>                                                                                                                                                                                                                                                                                                           | Distance learning using a combination of synchronous and asynchronous teaching.                                                                                                                                                                                    |
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                                                                                                                                                                                                      | Communication with students is conducted through weekly live sessions, scheduled virtual office hours, discussion forums, and email communication supported by the university learning platform.                                                                   |
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, x.a.</i>                                                                                                                                                                                     | Student interaction is supported through group discussion during live sessions, collaborative assignments, and online discussion forums.                                                                                                                           |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                                                                                                                                                                                                              | ICT tools used in the course include: <ul style="list-style-type: none"> <li>• Teleconference platform (Microsoft Teams)</li> <li>• Asynchronous learning platform (Moodle)</li> <li>• Collaborative digital tools</li> <li>• Online assessment systems</li> </ul> |
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                                                                                                                                                                                                       | Students are required to have: <ul style="list-style-type: none"> <li>• computer or tablet</li> <li>• reliable internet connection</li> <li>• webcam and microphone</li> <li>• access to university digital learning platforms</li> </ul>                          |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                                                                                                                                                                                                              | All assignments are checked using Turnitin or equivalent plagiarism detection software.<br>Academic misconduct may lead to disciplinary procedures according to university regulations.                                                                            |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br>(1) The use of Artificial Intelligence is prohibited in all circumstances<br>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor<br>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature<br>(4) Students are free to use Artificial Intelligence | The use of Artificial Intelligence tools is allowed only when clearly acknowledged and properly referenced.<br>Students remain responsible for the originality and accuracy of their work.                                                                         |
| <b>ORGANISATION OF TEACHING</b><br><i>The mode and methods of teaching are described in detail.</i>                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                    |

| <p>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.</p> <p>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.</p>                                                                                                                          | <table> <tr> <th>Activity</th><th>Semester workload (hours)</th></tr> <tr> <td>Lectures</td><td>39</td></tr> <tr> <td>Study of lecture materials</td><td>50</td></tr> <tr> <td>Essay writing</td><td>61</td></tr> <tr> <td>Independent study</td><td>50</td></tr> <tr> <td><b>Course total</b></td><td><b>200</b></td></tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Activity | Semester workload (hours) | Lectures | 39 | Study of lecture materials | 50 | Essay writing | 61 | Independent study | 50 | <b>Course total</b> | <b>200</b> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------|----------|----|----------------------------|----|---------------|----|-------------------|----|---------------------|------------|
| Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Semester workload (hours)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| Lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 39                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| Study of lecture materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| Essay writing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 61                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| Independent study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| <b>Course total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>200</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| <p><b>STUDENT ASSESSMENT</b></p> <p>Description of the assessment method</p> <p>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other</p> <p>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</p> | <p><b>Description of the assessment method</b></p> <p>Assessment of the course is designed to evaluate students' ability to critically analyse scientific evidence, apply theoretical knowledge to practical contexts, and communicate scientific information effectively. The assessment approach emphasises critical thinking, evidence-based reasoning and applied knowledge, rather than factual recall.</p> <p><b>Assessment methods include:</b></p> <ul style="list-style-type: none"> <li>• applied scientific report and presentation (70% of final grade)</li> <li>• quizzes during the semester (30% of final grade)</li> </ul> <p><b>Description of assessment tasks</b></p> <p><u>Applied scientific report and presentation</u></p> <p>Students prepare a scientific report in journal-article format (2000 words) designing an evidence-based dietary evaluation, growth analysis, or applied nutritional support plan for an individual or population group across the life course. Students also submit a 10-minute recorded presentation summarising the key elements of the project.</p> <p><u>Quizzes</u></p> <p>The course incorporates formative quizzes featuring multiple-choice and open-ended components to measure conceptual understanding. Rather than focusing on factual recall, these assessments emphasize the student's ability to interpret and apply theoretical knowledge to real-world scenarios.</p> <p><b>Evaluation criteria</b></p> <p>Evaluation criteria include quality of literature use, critical analysis, application of knowledge, interpretation of case data, clarity of written work, and quality of presentation.</p> <p><b>Accessibility of evaluation criteria</b></p> <p>Detailed assessment guidelines, marking rubrics and submission instructions are made available to students through the course digital learning platform at the beginning of the semester.</p> |          |                           |          |    |                            |    |               |    |                   |    |                     |            |

## 5. RECOMMENDED BIBLIOGRAPHY

Indicative textbooks, consensus statements, and professional guidance relevant to sports nutrition in children and adolescents include:

### Core Textbooks

1. Brown, J. E. (2019). *Nutrition throughout the life cycle* (7th ed.). Cengage Learning.
2. Cameron, N., & Bogin, B. (Eds.). (2022). *Human growth and development* (3rd ed.). Academic Press.
3. Gibson, R. S. (2005). *Principles of nutritional assessment* (2nd ed.). Oxford University Press.
4. Langley-Evans, S. C. (2009). *Nutrition: A lifespan approach*. Wiley-Blackwell.

### Essential Research & Reviews

1. Barker, D. J. (1990). The fetal and infant origins of adult disease. *BMJ*, 301(6761), 1111. doi.org
2. Godfrey, K. M., Reynolds, R. M., Prescott, S. L., Nyirenda, M., Jaddoe, V. W., Eriksson, J. G., & Broekman, B. F. (2017). Influence of maternal obesity on the long-term health of offspring. *The Lancet Diabetes & Endocrinology*, 5(1), 53-64. doi.org
3. Laitinen, K., Gissler, M., Hartikainen, A. L., & Jarvelin, M. R. (2014). Nutrition in early life and the programming of adult disease: A review. *Journal of Developmental Origins of Health and Disease*, 5(3), 173-182.

*Professional Guidelines*

1. EFSA (European Food Safety Authority). (2017). *Dietary reference values for nutrients: Summary report*. EFSA Supporting Publication 2017:e15121. doi.org
2. World Health Organization. (2006). *WHO child growth standards: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age: Methods and development*. World Health Organization.

**Additional up to date review papers and consensus statements will be provided throughout the semester.**

## HUAUOEoo8 - Introduction to Machine Learning & AI for Health

### 1. GENERAL

|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                    |          |                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------------------|
| SCHOOL                                                                                                                                                                                                                                                          | Digital Technology, Harokopio University                                                                                                                                                                                                                                                                                                                           |          |                                                    |
| ACADEMIC UNIT                                                                                                                                                                                                                                                   | Department of Informatics and Telematics                                                                                                                                                                                                                                                                                                                           |          |                                                    |
| LEVEL OF STUDIES                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                                                                                                       |          |                                                    |
| COURSE CODE                                                                                                                                                                                                                                                     | HUAUOEoo8                                                                                                                                                                                                                                                                                                                                                          | SEMESTER | 2nd Semester of Full-Time<br>2nd Year of Part-Time |
| COURSE TITLE                                                                                                                                                                                                                                                    | Introduction to Machine Learning and Artificial Intelligence (AI) for Health                                                                                                                                                                                                                                                                                       |          |                                                    |
| INDEPENDENT TEACHING ACTIVITIES<br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> | WEEKLY TEACHING HOURS                                                                                                                                                                                                                                                                                                                                              | CREDITS  |                                                    |
| Lectures                                                                                                                                                                                                                                                        | 2                                                                                                                                                                                                                                                                                                                                                                  |          |                                                    |
| Lab                                                                                                                                                                                                                                                             | 1                                                                                                                                                                                                                                                                                                                                                                  |          |                                                    |
| Total                                                                                                                                                                                                                                                           | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month                                                                                                                                                                                                                                                                                                              | 7.5      |                                                    |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                    |          |                                                    |
| COURSE TYPE<br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | <ul style="list-style-type: none"><li>• General background</li><li>• Skills development</li></ul>                                                                                                                                                                                                                                                                  |          |                                                    |
| PREREQUISITE COURSES                                                                                                                                                                                                                                            | None                                                                                                                                                                                                                                                                                                                                                               |          |                                                    |
| LANGUAGE OF INSTRUCTION AND OF ASSESSMENT                                                                                                                                                                                                                       | English                                                                                                                                                                                                                                                                                                                                                            |          |                                                    |
| MODE OF TEACHING<br><i>in-person (%)<br/>synchronous distance learning (%)<br/>asynchronous distance learning (%)<br/>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                                     | <ul style="list-style-type: none"><li>• In-person (%): 0%</li><li>• Synchronous distance learning (%): 80%</li><li>• Asynchronous distance learning (%): 20%</li></ul> <p>Synchronous teaching is delivered through the approved teleconference platform, while asynchronous learning is delivered through the university learning management system (Moodle).</p> |          |                                                    |
| AVAILABILITY TO ERASMUS STUDENTS                                                                                                                                                                                                                                | Yes.                                                                                                                                                                                                                                                                                                                                                               |          |                                                    |
| COURSE WEBSITE (URL)                                                                                                                                                                                                                                            | HUA Digital Learning Platform (Moodle).                                                                                                                                                                                                                                                                                                                            |          |                                                    |

### 2. LEARNING OUTCOMES

#### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B

## • Brief Guide for drafting Learning Outcomes

The course introduces students to the principles, methods and responsible use of Machine Learning (ML) and Artificial Intelligence (AI) in health. It develops both conceptual understanding and practical skills for working with health data, building and evaluating simple ML pipelines, and critically assessing modern AI systems and outputs for clinical and public health applications.

Students are expected to develop the following:

#### Knowledge

- Explain core concepts in ML and AI and their relevance to general healthcare and day-to-day professional workflows.
- Describe and interpret common health data types, health information systems, and key interoperability standards, including EHR-derived data, clinical coding systems and structured data relevant to clinical and wellbeing contexts.
- Analyse the principles of regression, classification, neural networks, representation learning, transformers and large language models in healthcare contexts.
- Evaluate the opportunities, limitations and risks of AI in health, including bias, interpretability, safety and deployment challenges.

#### Skills

- Work with structured and unstructured health data and prepare data for analysis and modelling.
- Build, test and evaluate basic end-to-end ML pipelines and interpret their outputs using accessible digital tools.
- Interpret model performance using suitable evaluation metrics and identify common issues such as overfitting, bias, data leakage and poor generalisation.
- Critically appraise healthcare and nutrition-related AI applications, including decision-support, risk prediction, behaviour monitoring, virtual coaching and LLM-based systems.

#### Competences

- Integrate technical, clinical and ethical perspectives when assessing AI systems for healthcare and wellbeing.
- Make informed decisions about when and how ML/AI methods can be appropriately applied to health, nutrition and child wellbeing problems.
- Engage responsibly with emerging AI tools in professional, academic and multidisciplinary healthcare settings.

The learning outcomes correspond to Level 7 of the European Qualifications Framework (EQF).

#### General Competences

*Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?*

Search, analysis and synthesis of data and information, with the use of the necessary technology  
Adaptability to new situations  
Decision-making  
Working independently  
Team work  
Working in an international environment  
Working in an interdisciplinary environment  
Production of new research ideas

Project planning and management  
Respect for difference and multiculturalism  
Respect for the natural environment  
Showing social, professional and ethical responsibility and sensitivity to gender issues  
Criticism and self-criticism  
Production of free, creative and inductive thinking  
....  
Other...  
.....

Search, analysis and synthesis of data and information with the use of necessary technologies  
Adaptability to new situations  
Decision-making  
Working in an international environment  
Working in an interdisciplinary environment  
Production of new research ideas  
Project planning and management

Showing social, professional and ethical responsibility  
Criticism and self-criticism  
Production of creative and inductive thinking

### 3. COURSE SYLLABUS

This course introduces students to Artificial Intelligence (AI) and Machine Learning (ML) with a specific emphasis on healthcare, prevention, nutrition and wellbeing applications.. The course progressively builds technical understanding and practical skills through three integrated strands: health data and AI foundations, machine learning for healthcare, and large language models and agentic AI.

Key topics include

- Introduction to AI and ML in health: definitions; definitions; clinically relevant use cases; how AI fits into health, nutrition and wellbeing services; structure of information systems and AI/ML pipelines
- Health data foundations: health data types; data representation; electronic health records; generated clinical and lifestyle data
- Interoperability and standards: ICD-10 / ICD-11; SNOMED CT; FHIR; DICOM; European Health Data Space (EHDS)
- Deriving value from health data: observational data; statistical analysis; machine learning applications; research versus real-world evidence
- Introduction to machine learning: types of ML problems; learning objectives; linear regression; core workflow concepts
- End-to-end ML pipelines: data preprocessing; regression and classification models; model evaluation; implementation in KNIME
- Beyond linear models: decision trees; ensemble methods; neural networks; overfitting; Generalisation
- Image and signal analysis: introductory signal processing; image processing fundamentals; convolutional neural networks; basic image classification
- Behaviour and lifestyle measurement with ML: analysis of 1D signals, images and video; applications in physical activity, diet, adherence and wellbeing
- Challenges in healthcare ML: interpretability; sources of bias; mitigation strategies; foundation model opportunities and risks
- Large language models: representation learning; word embeddings; transformers; generative modelling; next-token prediction
- Task-specific AI systems: pretraining versus fine-tuning; alignment approaches; retrieval-augmented generation (RAG)
- Agentic systems and workflows: agent architectures; orchestration and automation; practical workflow tool
- AI applications in healthcare and nutrition: current real-world applications; decision support; patient communication; virtual coaching; opportunities, risks and open challenges.

Throughout the course, students engage in hands-on exercises and project-based activities using health- and wellbeing-related datasets and digital tools.

### 4. TEACHING AND LEARNING METHODS - ASSESSMENT

|                                                                         |                                                                                                                                                              |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i> | Distance learning using a combination of synchronous and asynchronous teaching, with live online lectures, demonstrations and practical laboratory sessions. |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|



| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      | Communication with students is conducted through weekly live sessions, scheduled virtual office hours, announcements on the digital learning platform and email communication. Announcements, learning materials, guided exercises and project briefs are uploaded regularly to support continuous engagement throughout the course.                                               |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------|----------|----|----------------------------|----|---------------------------------------------|----|-------------------|----|---------------------|------------|
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, κ.α.</i>                                                                                                                                                                                                                                                                                                     | Student interaction is supported through: <ul style="list-style-type: none"> <li>group discussion during live sessions</li> <li>practical activities and project work</li> <li>peer exchange during demonstrations and Q&amp;A sessions</li> <li>shared digital tools for collaborative exploration of workflows and outputs</li> </ul>                                            |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                                                                                                                                                                                                                                                                                                                              | ICT tools used in the course include: <ul style="list-style-type: none"> <li>KNIME analytics platform</li> <li>OpenEMR platform</li> <li>Teleconference platform (Microsoft Teams)</li> <li>Asynchronous learning platform (Moodle)</li> <li>Collaborative digital tools</li> <li>Online assessment systems</li> </ul>                                                             |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Students are required to have: <ul style="list-style-type: none"> <li>computer or tablet</li> <li>reliable internet connection</li> <li>webcam and microphone</li> <li>access to university digital learning platforms</li> </ul>                                                                                                                                                  |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                              | All assignments are checked using Turnitin or equivalent plagiarism detection software.<br><br>Academic misconduct may lead to disciplinary procedures according to university regulations.                                                                                                                                                                                        |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br>(1) The use of Artificial Intelligence is prohibited in all circumstances<br>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor<br>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature<br>(4) Students are free to use Artificial Intelligence                                                                                                                 | The use of Artificial Intelligence tools is allowed only when clearly acknowledged and properly referenced. Students remain responsible for the originality and accuracy of their work.                                                                                                                                                                                            |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |
| <b>ORGANISATION OF TEACHING</b><br>The mode and methods of teaching are described in detail.<br>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.<br><br>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS. | <table> <tr> <th>Activity</th><th>Semester workload (hours)</th></tr> <tr> <td>Lectures</td><td>39</td></tr> <tr> <td>Study of lecture materials</td><td>55</td></tr> <tr> <td>Projects (exercises and reports) completion</td><td>56</td></tr> <tr> <td>Independent study</td><td>50</td></tr> <tr> <td><b>Course total</b></td><td><b>200</b></td></tr> </table>                 | Activity | Semester workload (hours) | Lectures | 39 | Study of lecture materials | 55 | Projects (exercises and reports) completion | 56 | Independent study | 50 | <b>Course total</b> | <b>200</b> |
| Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Semester workload (hours)                                                                                                                                                                                                                                                                                                                                                          |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |
| Lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 39                                                                                                                                                                                                                                                                                                                                                                                 |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |
| Study of lecture materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 55                                                                                                                                                                                                                                                                                                                                                                                 |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |
| Projects (exercises and reports) completion                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 56                                                                                                                                                                                                                                                                                                                                                                                 |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |
| Independent study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50                                                                                                                                                                                                                                                                                                                                                                                 |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |
| <b>Course total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>200</b>                                                                                                                                                                                                                                                                                                                                                                         |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |
| <b>STUDENT ASSESSMENT</b><br>Description of the assessment method<br><br>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report,                                                                                                                                                                                                                  | <b>Description of the assessment method</b><br>Assessment of the course is designed to evaluate students' ability to understand core AI/ML concepts, apply them to health data problems, critically assess healthcare AI systems, and communicate findings clearly. The assessment approach emphasises applied knowledge, critical reasoning and responsible use of AI rather than |          |                           |          |    |                            |    |                                             |    |                   |    |                     |            |



|                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <p>oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other</p> <p>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</p> | <p>factual recall alone.</p> <p><b>Assessment methods include:</b></p> <ul style="list-style-type: none"> <li>• project-based coursework and written presentation (70% of final grade)</li> <li>• final oral examination (30% of final grade)</li> </ul> <p><b>Description of assessment tasks</b></p> <p><u>Project-based coursework and presentation</u></p> <p>Students complete 3 separate applied projects in which they develop, document and evaluate a healthcare-focused ML/AI workflow using course tools and concepts. The written submission presents the problem, data, methods and evaluation results, along with the interpretation of findings.</p> <p><u>Final oral examination</u></p> <p>At the end of the course, students complete a final oral examination assessing understanding of key concepts covered throughout the module. The knowledge required to answer the examination questions will be acquired either during lectures or via project completion. The examination may include conceptual questions, short applied interpretation tasks and discussion of methodological choices related to the course.</p> <p><b>Evaluation criteria</b></p> <ul style="list-style-type: none"> <li>• correct use of data, methods and workflow design</li> <li>• critical interpretation of model performance and limitations</li> <li>• understanding of bias, interpretability, safety and responsible AI issues</li> <li>• clarity, structure and scientific quality of delivered projects and reports</li> <li>• accuracy and completeness of oral examination responses</li> </ul> <p><b>Accessibility of evaluation criteria</b></p> <p>Detailed assessment guidelines, marking rubrics and submission instructions are made available to students through the course digital learning platform at the beginning of the semester.</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 5. RECOMMENDED BIBLIOGRAPHY

The following textbooks and guidelines provide an overview of the scientific principles and applied practices related to exercise, physical activity and health in children and adolescents. Additional scientific articles will be provided throughout the course.

### Suggested bibliography:

- Rajkomar, A., Dean, J., & Kohane, I. (2019). Machine Learning in Medicine. *New England Journal of Medicine*, 380, 1347-1358.
- Bishop, C. M., & Bishop, H. (2024). *Deep Learning: Foundations and Concepts*. Springer.
- Chen, S., Guevara, M., Moningi, S., Hoebbers, F., Elhalawani, H., Kann, B. H., ... & Bitterman, D. S. (2024). The effect of using a large language model to respond to patient messages. *The Lancet*

*Digital Health*, 6(6), e379-e381.

- Beam, A. L., & Kohane, I. S. (2018). Big data and machine learning in health care. *Jama*, 319(13), 1317-1318.

- Matheny, M. E., Israni, S. T., Ahmed, M., & Whicher, D. (Eds.). (2020). Artificial Intelligence in Health Care: The Hope, the Hype, the Promise, the Peril. National Academy of Medicine.

- World Health Organization. (2024). Ethics and governance of artificial intelligence for health: large multi-modal models. WHO guidance. World Health Organization.

**Related academic journals:**

The Lancet Digital Health

npj Digital Medicine

JAMIA (Journal of the American Medical Informatics Association)

Artificial Intelligence in Medicine

Nature Medicine

Journal of Biomedical Informatics

## HUAUOE009 - Prevention and Management of Childhood Obesity

### 1. GENERAL

|                                                                                                                                                                                                                                                                        |                                                                                                                                                                           |                                                       |                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------|
| <b>SCHOOL</b>                                                                                                                                                                                                                                                          | School of Health Science & Education, Harokopio University                                                                                                                |                                                       |                                                           |
| <b>ACADEMIC UNIT</b>                                                                                                                                                                                                                                                   | Department of Nutrition and Dietetics                                                                                                                                     |                                                       |                                                           |
| <b>LEVEL OF STUDIES</b>                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                              |                                                       |                                                           |
| <b>COURSE CODE</b>                                                                                                                                                                                                                                                     | HUAUOE009                                                                                                                                                                 | <b>SEMESTER</b>                                       | 2nd Semester of Full-Time (FT) 2nd Year of Part-Time (PT) |
| <b>COURSE TITLE</b>                                                                                                                                                                                                                                                    | Prevention & Management of Childhood Obesity and Comorbidities                                                                                                            |                                                       |                                                           |
| <b>INDEPENDENT TEACHING ACTIVITIES</b><br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> |                                                                                                                                                                           | <b>WEEKLY TEACHING HOURS</b>                          | <b>CREDITS</b>                                            |
| Lectures and interactive seminars                                                                                                                                                                                                                                      |                                                                                                                                                                           | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month | 7.5 ECTS                                                  |
|                                                                                                                                                                                                                                                                        |                                                                                                                                                                           |                                                       |                                                           |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                              |                                                                                                                                                                           |                                                       |                                                           |
| <b>COURSE TYPE</b><br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | Special background / Specialisation                                                                                                                                       |                                                       |                                                           |
| <b>PREREQUISITE COURSES</b>                                                                                                                                                                                                                                            | None                                                                                                                                                                      |                                                       |                                                           |
| <b>LANGUAGE OF INSTRUCTION AND OF ASSESSMENT</b>                                                                                                                                                                                                                       | English                                                                                                                                                                   |                                                       |                                                           |
| <b>MODE OF TEACHING</b><br><i>in-person (%)</i><br><i>synchronous distance learning (%)</i><br><i>asynchronous distance learning (%)</i><br><i>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                   | <ul style="list-style-type: none"> <li>• n-person (%): 0%</li> <li>• synchronous distance learning (%): 80%</li> <li>• asynchronous distance learning (%): 20%</li> </ul> |                                                       |                                                           |
| <b>AVAILABILITY TO ERASMUS STUDENTS</b>                                                                                                                                                                                                                                | Yes                                                                                                                                                                       |                                                       |                                                           |
| <b>COURSE WEBSITE (URL)</b>                                                                                                                                                                                                                                            | HUA Digital Learning Platform (Moodle).                                                                                                                                   |                                                       |                                                           |

### • LEARNING OUTCOMES

#### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

10. Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
11. Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
12. Brief Guide for drafting Learning Outcomes

The aim of the course is to provide students with an in-depth, evidence-based understanding of the prevention and management of childhood and adolescent obesity and its associated comorbidities. The module integrates clinical nutrition, paediatrics, epidemiology, public health, behavioural sciences, and policy perspectives, with emphasis on translating evidence into effective and sustainable interventions and policies.

On successful completion of the course, students will be able to:

### Knowledge

- Explain the epidemiology, biological, behavioural, psychosocial, and environmental determinants of childhood and adolescent obesity.
- Describe the major metabolic, cardiovascular, psychological, and endocrine comorbidities associated with obesity across the life course.
- Evaluate the role of early-life factors, family environment, dietary behaviours, physical activity, sleep, and socioeconomic determinants in obesity development.
- Critically appraise current evidence regarding prevention and treatment approaches for childhood obesity.

### Skills

- Assess and interpret anthropometric, dietary, behavioural, and clinical data related to obesity risk and management in children and adolescents.
- Apply evidence-based strategies for obesity prevention and management in clinical, school, community, and policy settings.
- Critically evaluate national and international obesity prevention programmes, digital health interventions, and policy initiatives.
- Design multidisciplinary and population-based intervention strategies targeting obesity and related comorbidities.

### Competences

- Integrate clinical, nutritional, behavioural, and public health perspectives into obesity prevention and management strategies.
- Communicate scientific evidence effectively to multidisciplinary audiences.
- Develop ethical, equitable, and sustainable approaches for obesity prevention and health promotion.
- Apply principles of implementation science and programme evaluation in obesity-related interventions.

The learning outcomes correspond to Level 7 of the European Qualifications Framework (EQF).

### General Competences

*Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?*

|                                                                                                  |                                                                                          |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Search, analysis and synthesis of data and information, with the use of the necessary technology | Project planning and management                                                          |
| Adaptability to new situations                                                                   | Respect for difference and multiculturalism                                              |
| Decision-making                                                                                  | Respect for the natural environment                                                      |
| Working independently                                                                            | Showing social, professional and ethical responsibility and sensitivity to gender issues |
| Team work                                                                                        | Criticism and self-criticism                                                             |
| Working in an international environment                                                          | Production of free, creative and inductive thinking                                      |
| Working in an interdisciplinary environment                                                      | ... ..                                                                                   |
| Production of new research ideas                                                                 | Other...                                                                                 |
|                                                                                                  | ... ..                                                                                   |

The course aims to develop the following competences:

- Search, analysis and synthesis of data and information using relevant technologies
- Adaptability to new situations
- Decision-making
- Working independently
- Teamwork
- Working in an interdisciplinary environment
- Production of new research ideas
- Project planning and management
- Showing social, professional and ethical responsibility

- Respect for diversity and multiculturalism
- Criticism and self-criticism
- Production of free, creative and inductive thinking

## • COURSE SYLLABUS

This course provides an advanced overview of the determinants, prevention, and management of childhood and adolescent obesity and related comorbidities. The course adopts a multidisciplinary and life-course perspective, integrating nutrition science, clinical practice, behavioural sciences, public health, and policy approaches.

Key topics include:

- Epidemiology and global burden of childhood obesity
- Biological and genetic determinants of obesity
- Early-life determinants and the first 1,000 days
- Dietary patterns, ultra-processed foods, and food environments
- Physical activity, sedentary behaviour, and sleep
- Cardiometabolic and endocrine comorbidities
- Psychological and mental health dimensions
- Anthropometric and clinical assessment methods
- Community-based and national obesity prevention programmes
- Multidisciplinary obesity management approaches
- Policy, regulation, and population-level interventions
- Digital health interventions and precision nutrition
- Monitoring, implementation science, and translation into practice

The course includes case studies, critical appraisal of scientific literature, and applied examples from international obesity prevention initiatives.

## • TEACHING AND LEARNING METHODS - ASSESSMENT

|                                                                                                                                                                                                                            |                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i>                                                                                                                                                    | Distance and blended learning using synchronous and asynchronous teaching methods.                                                                                                                                        |
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                                               | Communication with students is supported through weekly live sessions, virtual office hours, announcements, email communication, and discussion forums via the university digital learning platform.                      |
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, x.a.</i>                              | Student interaction is facilitated through group discussions, collaborative assignments, breakout-room activities, online discussion forums, and interactive case-study sessions.                                         |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                                                       | The course uses teleconference platforms, Moodle, online collaborative tools, multimedia educational material, and online assessment systems.                                                                             |
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                                                | Students require a computer/tablet, stable internet connection, webcam, microphone, and access to the university digital learning environment.                                                                            |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                                                       | All assignments are subject to plagiarism screening using Turnitin or equivalent software according to university regulations.                                                                                            |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br><i>(1) The use of Artificial Intelligence is prohibited in all circumstances<br/>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor</i> | The use of Artificial Intelligence tools is permitted only when clearly acknowledged and appropriately referenced. Students remain responsible for the originality, integrity, and scientific accuracy of submitted work. |

| <p>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature</p> <p>(4) Students are free to use Artificial Intelligence</p>                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                   |                       |    |                           |    |                                                    |    |                   |    |  |  |  |  |              |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------|-----------------------|----|---------------------------|----|----------------------------------------------------|----|-------------------|----|--|--|--|--|--------------|------------|
| <p><b>ORGANISATION OF TEACHING</b></p> <p>The mode and methods of teaching are described in detail.</p> <p>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.</p> <p>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.</p>                  | <table border="1"> <thead> <tr> <th>Activity</th><th>Semester workload</th></tr> </thead> <tbody> <tr> <td>Lectures and seminars</td><td>39</td></tr> <tr> <td>Study of lecture material</td><td>50</td></tr> <tr> <td>Critical literature review/ assignment preparation</td><td>55</td></tr> <tr> <td>Independent study</td><td>56</td></tr> <tr> <td></td><td></td></tr> <tr> <td></td><td></td></tr> <tr> <td>Course total</td><td><b>200</b></td></tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Activity | Semester workload | Lectures and seminars | 39 | Study of lecture material | 50 | Critical literature review/ assignment preparation | 55 | Independent study | 56 |  |  |  |  | Course total | <b>200</b> |
| Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Semester workload                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |          |                   |                       |    |                           |    |                                                    |    |                   |    |  |  |  |  |              |            |
| Lectures and seminars                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 39                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                   |                       |    |                           |    |                                                    |    |                   |    |  |  |  |  |              |            |
| Study of lecture material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                   |                       |    |                           |    |                                                    |    |                   |    |  |  |  |  |              |            |
| Critical literature review/ assignment preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                   |                       |    |                           |    |                                                    |    |                   |    |  |  |  |  |              |            |
| Independent study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 56                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                   |                       |    |                           |    |                                                    |    |                   |    |  |  |  |  |              |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                   |                       |    |                           |    |                                                    |    |                   |    |  |  |  |  |              |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                   |                       |    |                           |    |                                                    |    |                   |    |  |  |  |  |              |            |
| Course total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>200</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |                   |                       |    |                           |    |                                                    |    |                   |    |  |  |  |  |              |            |
| <p><b>STUDENT ASSESSMENT</b></p> <p>Description of the assessment method</p> <p>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other</p> <p>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</p> | <p><b>Assessment Methods</b></p> <p>Assessment is designed to evaluate students' ability to critically analyse scientific evidence, apply knowledge to practical and policy contexts, and integrate multidisciplinary approaches to obesity prevention and management.</p> <p><b>Assessment Components</b></p> <p><b>Scientific Assignment and Presentation (70%)</b></p> <p>Students prepare an evidence-based scientific report (approximately 2,500 words) focusing on a contemporary issue related to childhood obesity prevention or management. The assignment may include critical appraisal of interventions, policy analysis, programme evaluation, or development of an obesity prevention strategy.</p> <p>Students also deliver a short oral or recorded presentation summarising the rationale, methodology, and implications of their work.</p> <p><b>Final Quiz / Examination (30%)</b></p> <p>Students complete a final assessment consisting of multiple-choice questions, short-answer responses, and case-based problem-solving questions evaluating understanding and application of course concepts.</p> <p><b>Evaluation Criteria</b></p> <p>Assessment is based on:</p> <ul style="list-style-type: none"> <li>quality and relevance of scientific evidence</li> <li>critical thinking and interpretation of literature</li> <li>application of theory into practice</li> <li>scientific writing and structure</li> <li>clarity of oral communication</li> <li>problem-solving ability</li> <li>integration of multidisciplinary perspectives</li> </ul> <p>Detailed marking rubrics and assessment guidelines are provided through the course digital platform at the beginning of the semester.</p> |          |                   |                       |    |                           |    |                                                    |    |                   |    |  |  |  |  |              |            |

## ● RECOMMENDED BIBLIOGRAPHY

|                                    |
|------------------------------------|
| Core Textbooks and Reference Books |
|------------------------------------|

- Styne, D. M., Arslanian, S. A., Connor, E. L., Farooqi, I. S., Murad, M. H., Silverstein, J. H., & Yanovski, J. A. (2017). *Pediatric Obesity—Assessment, Treatment, and Prevention: An Endocrine Society Clinical Practice Guideline*. *Journal of Clinical Endocrinology & Metabolism*, 102(3), 709–757.
- Lobstein, T., Jackson-Leach, R., Moodie, M., Hall, K., Gortmaker, S., Swinburn, B., James, W. P. T., Wang, Y., & McPherson, K. (2015). *Child and Adolescent Obesity: Causes and Consequences*. Oxford University Press.
- World Health Organization (WHO). (2016). *Report of the Commission on Ending Childhood Obesity*. Geneva: WHO.
- World Health Organization (WHO). (2020). *Guidelines on Physical Activity and Sedentary Behaviour*. Geneva: WHO.
- Baur, L. A., & Twigg, S. M. (Eds.). (2019). *Clinical Obesity in Adults and Children* (4th ed.). Wiley-Blackwell.
- Birch, L. L., & Ventura, A. K. (2009). Preventing childhood obesity: what works? *International Journal of Obesity*, 33(S1), S74–S81.
- Brownell, K. D., & Walsh, B. T. (Eds.). (2017). *Eating Disorders and Obesity: A Comprehensive Handbook* (3rd ed.). Guilford Press.

#### International Guidelines and Policy Documents

- World Health Organization (WHO). (2022). *WHO European Regional Obesity Report 2022*.
- UNICEF, WHO & World Bank Group. (2023). *Levels and Trends in Child Malnutrition*.
- European Association for the Study of Obesity (EASO). *Childhood Obesity Task Force Resources*. <https://easo.org>
- American Academy of Pediatrics (AAP). (2023). *Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents With Obesity*. *Pediatrics*, 151(2).
- U.S. Department of Health and Human Services. (2018). *Physical Activity Guidelines for Americans* (2nd ed.).
- OECD. (2019). *The Heavy Burden of Obesity: The Economics of Prevention*. OECD Publishing.
- UNICEF. (2019). *The State of the World's Children: Children, Food and Nutrition*.

#### Key Scientific Journals

Students are encouraged to regularly access and critically review publications from the following journals:

- *Obesity Reviews*
- *Pediatric Obesity*
- *International Journal of Obesity*
- *Public Health Nutrition*
- *Nutrients*
- *The Lancet Child & Adolescent Health*
- *The Lancet Digital Health*
- *Childhood Obesity*
- *American Journal of Clinical Nutrition*
- *European Journal of Clinical Nutrition*
- *Nutrition Reviews*
- *Journal of Adolescent Health*

#### Additional Digital Resources and Organisations

- World Health Organization (WHO): <https://www.who.int>
- UNICEF Nutrition Resources: <https://www.unicef.org/nutrition>
- European Association for the Study of Obesity (EASO): <https://easo.org>
- OECD Health Statistics and Obesity Reports: <https://www.oecd.org/health>
- Centers for Disease Control and Prevention (CDC) Childhood Obesity Resources: <https://www.cdc.gov/obesity>
- European Childhood Obesity Group (ECOG): <https://www.ecog-obesity.eu>



## HUAUOE010 - Employability and Entrepreneurship in Healthcare Professions

### 1. GENERAL

|                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                       |                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------|
| <b>SCHOOL</b>                                                                                                                                                                                                                                                          | School of Health Sciences and Education, Harokopio University                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                                                           |
| <b>ACADEMIC UNIT</b>                                                                                                                                                                                                                                                   | Department of Nutrition and Dietetics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                       |                                                           |
| <b>LEVEL OF STUDIES</b>                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                       |                                                           |
| <b>COURSE CODE</b>                                                                                                                                                                                                                                                     | HUAUOE010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>SEMESTER</b>                                       | 2nd Semester of Full-Time (FT) 2nd Year of Part-Time (PT) |
| <b>COURSE TITLE</b>                                                                                                                                                                                                                                                    | Employability and Entrepreneurship in Healthcare Professions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                       |                                                           |
| <b>INDEPENDENT TEACHING ACTIVITIES</b><br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>WEEKLY TEACHING HOURS</b>                          | <b>CREDITS</b>                                            |
| Lectures, workshops and applied career scenarios                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month | 7.5                                                       |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                       |                                                           |
| <b>COURSE TYPE</b><br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | The course provides specialised knowledge and applied professional skills related to employability, entrepreneurship, innovation, leadership and career sustainability within healthcare, medicine, wellbeing, public health and digital health sectors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                       |                                                           |
| <b>PREREQUISITE COURSES</b>                                                                                                                                                                                                                                            | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                       |                                                           |
| <b>LANGUAGE OF INSTRUCTION AND OF ASSESSMENT</b>                                                                                                                                                                                                                       | English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                       |                                                           |
| <b>MODE OF TEACHING</b><br><i>in-person (%)<br/>synchronous distance learning (%)<br/>asynchronous distance learning (%)<br/>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                                     | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%): 20%<br>The course is delivered through a blended online learning model combining synchronous interactive teaching activities with structured asynchronous learning activities.<br>Synchronous teaching includes: <ul style="list-style-type: none"> <li>live lectures</li> <li>workshops</li> <li>tutorials</li> <li>discussion sessions</li> <li>presentations</li> <li>career simulation activities</li> </ul> Asynchronous learning includes: <ul style="list-style-type: none"> <li>recorded educational material</li> <li>guided study activities</li> <li>reading assignments</li> <li>discussion forums</li> <li>independent learning activities</li> </ul> |                                                       |                                                           |

|                                         |                                                                                                                                                                          |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         | Synchronous teaching is delivered through approved teleconference platforms, while asynchronous learning is delivered through the university learning management system. |
| <b>AVAILABILITY TO ERASMUS STUDENTS</b> | Yes.                                                                                                                                                                     |
| <b>COURSE WEBSITE (URL)</b>             | HUA Digital Learning Platform (Moodle).                                                                                                                                  |

## 2. LEARNING OUTCOMES

### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Brief Guide for drafting Learning Outcomes

### Knowledge

- Describe international labour markets and employment pathways within healthcare, wellbeing and digital health sectors.
- Explain employability principles relevant to healthcare professionals and graduates.
- Analyse entrepreneurial models and business structures within healthcare and wellbeing services.
- Evaluate professional, legal and ethical considerations associated with healthcare entrepreneurship and practice.
- Describe the role of digital health technologies and artificial intelligence within healthcare professions.

### Skills

- Develop professional CVs, digital portfolios and interview strategies relevant to healthcare careers.
- Design realistic healthcare business and service delivery models.
- Apply strategic thinking to career planning and professional development.
- Interpret professional opportunities across public, private, corporate and research sectors.
- Communicate professional and entrepreneurial concepts effectively to multidisciplinary audiences.

### Competences

- Integrate employability and entrepreneurial principles into professional healthcare practice.
- Demonstrate independent and critical thinking regarding career sustainability and innovation.
- Collaborate effectively within interdisciplinary professional environments.
- Evaluate healthcare innovation opportunities using evidence-based and ethically responsible approaches.

Learning outcomes correspond to Level 7 of the European Qualifications Framework (EQF).

### General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?

Search, analysis and synthesis of data and information,  
with the use of the necessary technology  
Adaptability to new situations  
Decision-making  
Working independently  
Team work  
Working in an international environment  
Working in an interdisciplinary environment  
Production of new research ideas

Project planning and management  
Respect for difference and multiculturalism  
Respect for the natural environment  
Showing social, professional and ethical responsibility and  
sensitivity to gender issues  
Criticism and self-criticism  
Production of free, creative and inductive thinking  
... ..  
Other...

.....

The course aims to develop the following competences:

- Search, analysis and synthesis of data and information with the use of necessary technologies
- Adaptability to new situations
- Decision-making
- Working independently
- Teamwork
- Working in an international environment
- Working in interdisciplinary environments
- Production of new research and innovation ideas
- Project planning and management
- Respect for diversity and multiculturalism
- Respect for ethical and professional responsibilities
- Reflection and self-reflexion
- Production of creative and inductive thinking
- Professional communication and leadership skills
- Entrepreneurial and strategic thinking

### 3. COURSE SYLLABUS

This course introduces students to employability, entrepreneurship and innovation pathways within healthcare, medicine, wellbeing and digital health sectors. The module bridges academic training with real-world professional development and prepares graduates for diverse clinical, academic, corporate and entrepreneurial careers across Greece, Europe and internationally. The course focuses on practical career readiness, healthcare innovation, strategic professional development and sustainable career planning.

#### Weekly Topics

##### Week 1 — Health, Medicine & Wellbeing International Job Markets

- International healthcare labour markets
- Public and private healthcare systems
- Clinical and non-clinical career pathways
- Emerging professions in health and wellbeing
- International employability trends

##### Week 2 — Employability Skills in Healthcare: Developing a Strong CV

- Professional CV development
- Cover letters and personal statements
- Interview preparation
- Translating qualifications into employability skills
- Digital recruitment systems

##### Week 3 — Strategic Entrepreneurship for Health Professionals: Models, Markets and Validation

- Entrepreneurship principles in healthcare
- Market analysis and validation
- Healthcare innovation ecosystems
- Startup development strategies
- Service feasibility and scalability

##### Week 4 — Corporate Wellbeing for Healthcare Professionals

- Occupational health and corporate wellbeing
- Workplace health promotion
- Corporate wellness programme development
- Employer and insurer partnerships
- Careers in corporate wellbeing

##### Week 5 — Professional Branding for Healthcare Students and Graduates

- Professional identity development
- LinkedIn optimisation
- Digital visibility and networking
- Scientific and professional communication

|                                                                                                                                                                                                                                                                                     |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <ul style="list-style-type: none"> <li>Professional online reputation</li> </ul>                                                                                                                                                                                                    |  |
| <b>Week 6 — Private Clinics in Health and Wellbeing</b>                                                                                                                                                                                                                             |  |
| <ul style="list-style-type: none"> <li>Private clinic structures</li> <li>Financial and operational management</li> <li>Referral systems and patient acquisition</li> <li>Multidisciplinary healthcare services</li> <li>Sustainability and risk management</li> </ul>              |  |
| <b>Week 7 — Business Models in Health, Medicine &amp; Wellbeing</b>                                                                                                                                                                                                                 |  |
| <ul style="list-style-type: none"> <li>Healthcare business models</li> <li>B2B and B2C services</li> <li>Subscription and hybrid models</li> <li>Insurance-linked healthcare</li> <li>Revenue streams and pricing</li> </ul>                                                        |  |
| <b>Week 8 — Interdisciplinary Coaching Pathways</b>                                                                                                                                                                                                                                 |  |
| <ul style="list-style-type: none"> <li>Coaching in healthcare and wellbeing</li> <li>Behaviour change principles</li> <li>Interdisciplinary communication</li> <li>Lifestyle medicine and coaching</li> <li>Ethical and professional boundaries</li> </ul>                          |  |
| <b>Week 9 — Digital Health Tools for Healthcare Professionals</b>                                                                                                                                                                                                                   |  |
| <ul style="list-style-type: none"> <li>Digital health ecosystems</li> <li>Telehealth and remote monitoring</li> <li>Wearables and healthcare technologies</li> <li>Healthcare platforms and digital services</li> <li>Data interpretation and communication</li> </ul>              |  |
| <b>Week 10 — Artificial Intelligence in Child &amp; Family Health</b>                                                                                                                                                                                                               |  |
| <ul style="list-style-type: none"> <li>AI applications in healthcare</li> <li>Artificial intelligence in paediatrics</li> <li>Predictive analytics and decision support</li> <li>Ethical and legal considerations</li> <li>Future trends in AI-supported healthcare</li> </ul>      |  |
| <b>Week 11 — Financial Strategies, Contracts &amp; Career Sustainability</b>                                                                                                                                                                                                        |  |
| <ul style="list-style-type: none"> <li>Salary and consultancy models</li> <li>Contract negotiation</li> <li>Financial planning</li> <li>Career sustainability</li> <li>Burnout prevention and work-life balance</li> </ul>                                                          |  |
| <b>Week 12 — Research and Development (R&amp;D) within Higher Education</b>                                                                                                                                                                                                         |  |
| <ul style="list-style-type: none"> <li>Academic and research career pathways</li> <li>Research funding and grants</li> <li>Innovation and knowledge transfer</li> <li>Industry-academic collaborations</li> <li>Consultancy and research management</li> </ul>                      |  |
| <b>Week 13 — Capstone Career Pathway Presentations</b>                                                                                                                                                                                                                              |  |
| <ul style="list-style-type: none"> <li>Student professional pathway presentations</li> <li>Career development reflection</li> <li>Peer and academic feedback</li> <li>Professional action planning</li> <li>Integration of employability and entrepreneurship principles</li> </ul> |  |

#### 4. TEACHING AND LEARNING METHODS - ASSESSMENT

|                                                                                 |                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>MODE OF TEACHING</b><br/><i>Face-to-face, distance learning, etc.</i></p> | <p>Distance learning using a combination of synchronous and asynchronous teaching approaches.<br/>Teaching methods include:</p> <ul style="list-style-type: none"> <li>live online lectures</li> <li>interactive workshops</li> </ul> |
|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>• case-based learning</li> <li>• career simulation activities</li> <li>• discussion sessions</li> <li>• guest lectures from industry professionals</li> <li>• recorded educational material</li> <li>• guided independent study</li> </ul> <p>These activities are supported through university digital platforms for teleconferencing and asynchronous learning.</p>                                                                      |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------|----------------------|----|--------------------------------|----|----------------------------|----|--------------------|----|----------------------------|----|--------------------|----|------------------------------------------|----|
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>Communication with students is conducted through:</p> <ul style="list-style-type: none"> <li>• weekly synchronous sessions</li> <li>• course discussion forums</li> <li>• email communication</li> <li>• scheduled virtual office hours</li> <li>• announcements on the digital learning platform</li> </ul>                                                                                                                                                                   |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, κ.α.</i>                                                                                                                                                                                                                                                                                                 | <p>Student interaction is supported through:</p> <ul style="list-style-type: none"> <li>• group discussion during live sessions</li> <li>• collaborative assignments</li> <li>• online discussion forums</li> <li>• peer feedback activities</li> <li>• breakout room discussions</li> <li>• digital collaborative tools</li> </ul>                                                                                                                                               |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                                                                                                                                                                                                                                                                                                                          | <p>ICT tools used in the course include:</p> <ul style="list-style-type: none"> <li>• Teleconference platforms (Google Meet / Zoom)</li> <li>• HUA Moodle Learning Management System</li> <li>• Collaborative digital tools (Teams)</li> <li>• Online assessment systems</li> <li>• Digital presentation and portfolio tools</li> </ul>                                                                                                                                           |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>Students are required to have:</p> <ul style="list-style-type: none"> <li>• computer or tablet</li> <li>• reliable internet connection</li> <li>• webcam and microphone</li> <li>• access to university digital learning platforms</li> </ul>                                                                                                                                                                                                                                  |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>All assignments are checked using Turnitin or equivalent plagiarism detection software.</p> <p>Academic misconduct may lead to disciplinary procedures according to university regulations.</p>                                                                                                                                                                                                                                                                                |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br>(1) The use of Artificial Intelligence is prohibited in all circumstances<br>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor<br>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature<br>(4) Students are free to use Artificial Intelligence                                                                                                             | <p>The use of Artificial Intelligence tools is allowed only when clearly acknowledged and appropriately referenced.</p> <p>Students remain responsible for:</p> <ul style="list-style-type: none"> <li>• originality of submitted work</li> <li>• factual accuracy</li> <li>• ethical and responsible use of AI-generated content</li> </ul>                                                                                                                                      |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| <b>ORGANISATION OF TEACHING</b><br>The mode and methods of teaching are described in detail.<br>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.<br>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS. | <table> <tr> <th>Activity</th><th>Semester workload</th></tr> <tr> <td>Synchronous lectures</td><td>39</td></tr> <tr> <td>Asynchronous recorded lectures</td><td>18</td></tr> <tr> <td>Study of lecture materials</td><td>42</td></tr> <tr> <td>Literature reading</td><td>25</td></tr> <tr> <td>Preparation of assignments</td><td>30</td></tr> <tr> <td>Assignment writing</td><td>20</td></tr> <tr> <td>Career simulation and applied activities</td><td>13</td></tr> </table> | Activity | Semester workload | Synchronous lectures | 39 | Asynchronous recorded lectures | 18 | Study of lecture materials | 42 | Literature reading | 25 | Preparation of assignments | 30 | Assignment writing | 20 | Career simulation and applied activities | 13 |
| Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Semester workload                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| Synchronous lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 39                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| Asynchronous recorded lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| Study of lecture materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 42                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| Literature reading                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| Preparation of assignments                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| Assignment writing                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |
| Career simulation and applied activities                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                   |                      |    |                                |    |                            |    |                    |    |                            |    |                    |    |                                          |    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |                    |               |                          |     |                          |     |                                      |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------|---------------|--------------------------|-----|--------------------------|-----|--------------------------------------|-----|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Examination and assessment preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13        |                    |               |                          |     |                          |     |                                      |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Course total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 200 hours |                    |               |                          |     |                          |     |                                      |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |                    |               |                          |     |                          |     |                                      |     |
| <b>STUDENT ASSESSMENT</b><br><i>Description of the assessment method</i><br><br><i>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other</i><br><br><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i> | <b>Description of the assessment method</b><br>Assessment is designed to evaluate students’ ability to critically analyse professional opportunities, apply employability and entrepreneurial principles, and communicate professional strategies effectively within healthcare and wellbeing sectors.<br>The assessment strategy combines formative and summative approaches and includes written analytical work, professional portfolio development and recorded presentations.<br>All assessments are conducted in English.<br>The assessment approach emphasises: <ul style="list-style-type: none"><li>critical thinking</li><li>applied professional knowledge</li><li>strategic career planning</li><li>entrepreneurship and innovation</li><li>communication skills</li></ul> <b>Assessment methods include:</b> <ul style="list-style-type: none"><li>professional portfolio development</li><li>business and employability case studies</li><li>reflective analysis</li><li>recorded oral presentation</li><li>applied problem-solving tasks</li><li>participation in online learning activities</li></ul> <table><tr><td><b>Assessments</b></td><td><b>Weight</b></td></tr><tr><td>Career pathway portfolio</td><td>50%</td></tr><tr><td>Employability case study</td><td>20%</td></tr><tr><td>Capstone Career Pathway Presentation</td><td>30%</td></tr></table><br><b>Career Pathway Portfolio (50%)</b><br>Students prepare an individual professional portfolio (approximately 2500 words) outlining a realistic healthcare career or entrepreneurial pathway aligned with their academic background, interests and professional goals.<br>The portfolio includes: <ul style="list-style-type: none"><li>professional profile and career objectives</li><li>employability analysis</li><li>healthcare business or service model</li><li>labour market analysis</li><li>financial and operational considerations</li><li>professional branding and digital presence strategy</li><li>implementation and sustainability plan</li><li>references</li></ul> The portfolio emphasises critical reflection, strategic planning and evidence-based professional development.<br><b>Employability Case Study (20%)</b> |           | <b>Assessments</b> | <b>Weight</b> | Career pathway portfolio | 50% | Employability case study | 20% | Capstone Career Pathway Presentation | 30% |
| <b>Assessments</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Weight</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |                    |               |                          |     |                          |     |                                      |     |
| Career pathway portfolio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 50%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                    |               |                          |     |                          |     |                                      |     |
| Employability case study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 20%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                    |               |                          |     |                          |     |                                      |     |
| Capstone Career Pathway Presentation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 30%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |           |                    |               |                          |     |                          |     |                                      |     |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Students complete a structured applied analysis of a real-world healthcare employability or entrepreneurship scenario.</p> <p>The task may involve:</p> <ul style="list-style-type: none"> <li>• clinic or service development analysis</li> <li>• healthcare innovation evaluation</li> <li>• corporate wellbeing strategy</li> <li>• digital health implementation pathway</li> <li>• career transition planning</li> <li>• evaluation of healthcare business opportunities</li> </ul> <p>Submission format: 1000-word structured analysis report.</p> <p><b>Capstone Career Pathway Presentation (30%)</b></p> <p>Students deliver a recorded professional presentation (10–12 minutes) presenting their proposed career or entrepreneurial pathway.</p> <p>The presentation includes:</p> <ul style="list-style-type: none"> <li>• professional positioning and goals</li> <li>• career pathway justification</li> <li>• employability and business strategy</li> <li>• implementation plan</li> <li>• critical reflection on opportunities and challenges</li> </ul> <p>Students are expected to demonstrate:</p> <ul style="list-style-type: none"> <li>• strategic thinking</li> <li>• professional communication</li> <li>• evidence-based reasoning</li> <li>• clarity and feasibility of proposed pathway</li> </ul> <p><b>Evaluation Criteria</b></p> <p>Student performance is evaluated according to the following criteria:</p> <ul style="list-style-type: none"> <li>• quality and relevance of evidence used</li> <li>• critical analysis and strategic thinking</li> <li>• realism and feasibility of proposed pathways</li> <li>• application of employability and entrepreneurial principles</li> <li>• clarity and structure of written work</li> <li>• quality of oral presentation and communication</li> <li>• professionalism and reflective capacity</li> </ul> <p><b>Accessibility of Evaluation Criteria</b></p> <p>Detailed assessment guidelines, marking rubrics and submission instructions are made available to students through the course digital learning platform at the beginning of the semester.</p> <p>Students receive written and/or recorded feedback following submission of each assessment.</p> |
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## 5. RECOMMENDED BIBLIOGRAPHY

- Suggested bibliography:

*The following textbooks and guidelines provide an overview of the scientific principles and applied practices related to exercise, physical activity and health in children and adolescents. Additional scientific articles will be provided throughout the course.*

Career Development and Employability

- [EURES European Job Mobility Portal](#) — Healthcare and wellbeing jobs across Europe



- [NHS Careers](#) — UK healthcare career pathways
- [DYPA – Greek Public Employment Service](#) — Employment opportunities and professional development in Greece
- [LinkedIn Jobs](#) — International professional opportunities
- [EURAXESS](#) — European research and academic careers
- [WHO Careers](#) — Global public health and international organisation careers
- [UNICEF Careers](#) — Child health and NGO careers

#### Medicine and Healthcare Professions

- [Panhellenic Medical Association](#) — Medical profession and licensing in Greece
- [General Medical Council \(GMC\)](#) — UK medical registration and professional standards
- [British Medical Association \(BMA\)](#) — UK medical careers and contracts
- [European Public Health Association \(EUPHA\)](#) — European public health careers and policy
- [World Health Organization](#) — International health systems and policy resources

#### Nutrition, Exercise and Wellbeing Careers

- [Hellenic Dietetic Association](#) — Dietetics profession in Greece
- [British Dietetic Association](#) — UK dietetics careers and standards
- [European Federation of the Associations of Dietitians \(EFAD\)](#) — European dietetics network
- [American College of Sports Medicine \(ACSM\)](#) — Exercise science and clinical exercise careers
- [British Association of Sport and Exercise Sciences \(BASES\)](#) — UK sport science accreditation and careers
- [International Society for Physical Activity and Health \(ISPAH\)](#) — Global physical activity and public health resources

#### Psychology, Coaching and Behaviour Change

- [Hellenic Psychological Society](#) — Psychology profession in Greece
- [British Psychological Society \(BPS\)](#) — UK psychology careers and accreditation
- [American Psychological Association \(APA\)](#) — International psychology resources
- [Motivational Interviewing Network of Trainers \(MINT\)](#) — Coaching and behaviour change approaches

#### Entrepreneurship, Innovation and Private Practice

- Osterwalder, A., & Pigneur, Y. (2010). Business Model Generation.
- Ries, E. (2011). The Lean Startup.
- [Elevate Greece](#) — Greek innovation and startup ecosystem
- [EIT Health](#) — European healthcare innovation and startup ecosystem
- [European Innovation Council](#) — European startup and innovation funding
- [NHS Innovation Service](#) — UK healthcare innovation pathways

#### Digital Health and Artificial Intelligence

- Deep Medicine
- [WHO Digital Health Guidelines](#)
- [WHO AI Ethics for Health](#)
- [European Health Data Space](#)
- [NHS Digital Technology Resources](#)

#### Corporate Wellbeing and Occupational Health

- [WHO Healthy Workplace Framework](#)
- [Global Wellness Institute](#)
- [Society of Occupational Medicine](#)
- [International Labour Organization Occupational Health Resources](#)

#### Research, Funding and Academic Careers

- [Horizon Europe](#)
- [UK Research and Innovation \(UKRI\)](#)
- [Marie Skłodowska-Curie Actions \(MSCA\)](#)
- [National Institute for Health and Care Research \(NIHR\)](#)

#### Databases and Professional Resources

- [PubMed](#)
- [Scopus](#)
- [Web of Science](#)
- [LinkedIn Learning](#)
- [OECD Health Statistics](#)

## HUAUOE011 - Human Health and Sustainable Nutrition: The Mediterranean Paradigm

### 1. GENERAL

|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                          |          |                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------|
| SCHOOL                                                                                                                                                                                                                                                          | School of Health Science and Education, Harokopio University                                                                                                                                                                                                                             |          |                                                              |
| ACADEMIC UNIT                                                                                                                                                                                                                                                   | Department of Nutrition and Dietetics                                                                                                                                                                                                                                                    |          |                                                              |
| LEVEL OF STUDIES                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                             |          |                                                              |
| COURSE CODE                                                                                                                                                                                                                                                     | HUAUOE011                                                                                                                                                                                                                                                                                | SEMESTER | 2nd Semester of Full-Time (FT)<br>2nd Year of Part-Time (PT) |
| COURSE TITLE                                                                                                                                                                                                                                                    | Human Health and Sustainable Nutrition: The Mediterranean Paradigm                                                                                                                                                                                                                       |          |                                                              |
| INDEPENDENT TEACHING ACTIVITIES<br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> | WEEKLY TEACHING HOURS                                                                                                                                                                                                                                                                    | CREDITS  |                                                              |
| Lectures                                                                                                                                                                                                                                                        | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month                                                                                                                                                                                                                                    | 7.5      |                                                              |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                       |                                                                                                                                                                                                                                                                                          |          |                                                              |
| COURSE TYPE<br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | Special background                                                                                                                                                                                                                                                                       |          |                                                              |
| PREREQUISITE COURSES                                                                                                                                                                                                                                            | None                                                                                                                                                                                                                                                                                     |          |                                                              |
| LANGUAGE OF INSTRUCTION AND OF ASSESSMENT                                                                                                                                                                                                                       | English                                                                                                                                                                                                                                                                                  |          |                                                              |
| MODE OF TEACHING<br><i>in-person (%)<br/>synchronous distance learning (%)<br/>asynchronous distance learning (%)<br/>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                                     | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%): 20%<br><br>Synchronous teaching is delivered through an approved teleconference platform, while asynchronous learning is delivered through the university learning management system. |          |                                                              |
| AVAILABILITY TO ERASMUS STUDENTS                                                                                                                                                                                                                                | Yes                                                                                                                                                                                                                                                                                      |          |                                                              |
| COURSE WEBSITE (URL)                                                                                                                                                                                                                                            | HUA Digital Learning Platform (Moodle).                                                                                                                                                                                                                                                  |          |                                                              |

### 2. LEARNING OUTCOMES

#### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B

- Brief Guide for drafting Learning Outcomes

The aim of this course is to provide an in-depth understanding of the intersection of environment, food, and nutrition using the Mediterranean paradigm as a model for healthy and sustainable diets. The course explores how environmental, social, cultural, and biological factors shape dietary patterns and population health, with particular emphasis on children. It also examines the role of policies in improving the sustainability of food systems and addressing food insecurity.

Students are expected to develop the following:

#### Knowledge

- Recognise the importance of early-life and family-related factors in shaping long-term dietary behaviours and health outcomes.
- Evaluate the impact of climate change, urbanisation, and food environments on dietary behaviours and food insecurity.
- Describe the biological mechanisms linking diet, microbiome diversity, and non-communicable disease risk across the life course.
- Analyse the role of the Mediterranean diet as a model linking health, sustainability, and cultural legacy.

#### Skills

- Apply appropriate approaches and indicators for assessing dietary patterns for their efficacy to promote healthy sustainable diets.
- Interpret scientific literature related to social and economic determinants of food consumption with emphasis on Mediterranean contexts.
- Interpret dietary, environmental, and behavioural data in relation to health and sustainability outcomes
- Evaluate real-world policies and programmes (e.g., school meals, food innovation) using sustainability and equity lens.

#### Competences

- Critically appraise current international guidelines for sustainable diets in childhood.
- Develop interventions promoting sustainable nutrition in school and community settings.
- Communicate scientific knowledge effectively to childhood audiences.

The learning outcomes correspond to Level 7 of the European Qualifications Framework (EQF).

#### General Competences

*Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?*

|                                                                                                  |                                                                                          |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Search, analysis and synthesis of data and information, with the use of the necessary technology | Project planning and management                                                          |
| Adaptability to new situations                                                                   | Respect for difference and multiculturalism                                              |
| Decision-making                                                                                  | Respect for the natural environment                                                      |
| Working independently                                                                            | Showing social, professional and ethical responsibility and sensitivity to gender issues |
| Team work                                                                                        | Criticism and self-criticism                                                             |
| Working in an international environment                                                          | Production of free, creative and inductive thinking                                      |
| Working in an interdisciplinary environment                                                      | ....                                                                                     |
| Production of new research ideas                                                                 | Other...                                                                                 |
|                                                                                                  | ....                                                                                     |

Adaptability to new situations  
Decision-making  
Respect for the natural environment  
Working in an international environment  
Working in an interdisciplinary environment  
Production of new research ideas  
Showing social, professional and ethical responsibility  
Criticism and self-criticism  
Production of creative and inductive thinking

### 3. COURSE SYLLABUS

This course provides a comprehensive, evidence-based overview of nutritional science, food studies and cultural studies to show the way Mediterranean eating habits offer solutions to contemporary ecological and health crises.

Key topics include

- Global nutritional concerns in children, malnutrition and obesity
- Decline in the nutritional quality of foods and impacts on long-term health
- Microbe diversity and human health
- The global challenge of emerging infectious disease
- Contemporary threats to modern diets
- Local solutions for environmental, social and economic stability
- Eco-friendly food production practices
- Potential of traditional and innovative foods in promoting environmental sustainability and health
- Resilience and food processing
- Overview of the bioactive components and their sources in the Mediterranean diet
- Mechanist and clinical insights into the Mediterranean diet and its ability to promote healthy growth of children
- Fortified food in childhood nutrition, upgrading the Mediterranean staples
- Mediterranean diet, an environmentally sustainable paradigm

#### 4. TEACHING AND LEARNING METHODS - ASSESSMENT

|                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i>                                                                                                                       | Distance learning using a combination of synchronous and asynchronous teaching.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                  | Communication with students is conducted through a combination of synchronous and asynchronous methods, supported by digital technologies and the university's online learning platform (Moodle). This includes weekly live (synchronous) sessions, scheduled virtual office hours, and regular interaction through course discussion forums and email communication. In addition, announcements and learning materials are consistently uploaded on the Moodle platform, ensuring continuous and structured communication throughout the course. |
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, κ.α.</i> | Student interaction is supported through: <ul style="list-style-type: none"> <li>• group discussion during live sessions</li> <li>• collaborative assignments</li> <li>• online discussion forums</li> <li>• digital collaborative tools</li> </ul>                                                                                                                                                                                                                                                                                               |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                          | ICT tools used in the course include: <ul style="list-style-type: none"> <li>• Teleconference platform (Microsoft Teams)</li> <li>• Asynchronous learning platform (Moodle)</li> <li>• Collaborative digital tools</li> <li>• Online assessment systems</li> </ul>                                                                                                                                                                                                                                                                                |
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                   | Students are required to have: <ul style="list-style-type: none"> <li>• computer or tablet</li> <li>• reliable internet connection</li> <li>• webcam and microphone</li> <li>• access to university digital learning platforms</li> </ul>                                                                                                                                                                                                                                                                                                         |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                          | All assignments are checked using Turnitin or equivalent plagiarism detection software. Academic misconduct may lead to disciplinary procedures according to university regulations.                                                                                                                                                                                                                                                                                                                                                              |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br><i>(1) The use of Artificial Intelligence is prohibited in all circumstances</i>                                                                     | The use of Artificial Intelligence tools is allowed only when clearly acknowledged and properly referenced.                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| <p>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor</p> <p>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature</p> <p>(4) Students are free to use Artificial Intelligence</p>                                                                                                                                                                                                                                                        | <p>Students remain responsible for the originality and accuracy of their work.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                           |          |    |                            |    |                                    |    |               |    |                   |    |                     |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------|----------|----|----------------------------|----|------------------------------------|----|---------------|----|-------------------|----|---------------------|------------|
| <p><b>ORGANISATION OF TEACHING</b></p> <p>The mode and methods of teaching are described in detail.</p> <p>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.</p> <p>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.</p>                  | <table border="1"> <thead> <tr> <th>Activity</th><th>Semester workload (hours)</th></tr> </thead> <tbody> <tr> <td>Lectures</td><td>39</td></tr> <tr> <td>Study of lecture materials</td><td>50</td></tr> <tr> <td>Study and analysis of bibliography</td><td>31</td></tr> <tr> <td>Essay writing</td><td>40</td></tr> <tr> <td>Independent study</td><td>40</td></tr> <tr> <td><b>Course total</b></td><td><b>200</b></td></tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Activity | Semester workload (hours) | Lectures | 39 | Study of lecture materials | 50 | Study and analysis of bibliography | 31 | Essay writing | 40 | Independent study | 40 | <b>Course total</b> | <b>200</b> |
| Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Semester workload (hours)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |                           |          |    |                            |    |                                    |    |               |    |                   |    |                     |            |
| Lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 39                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                           |          |    |                            |    |                                    |    |               |    |                   |    |                     |            |
| Study of lecture materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                           |          |    |                            |    |                                    |    |               |    |                   |    |                     |            |
| Study and analysis of bibliography                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                           |          |    |                            |    |                                    |    |               |    |                   |    |                     |            |
| Essay writing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                           |          |    |                            |    |                                    |    |               |    |                   |    |                     |            |
| Independent study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                           |          |    |                            |    |                                    |    |               |    |                   |    |                     |            |
| <b>Course total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>200</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                           |          |    |                            |    |                                    |    |               |    |                   |    |                     |            |
| <p><b>STUDENT ASSESSMENT</b></p> <p>Description of the assessment method</p> <p>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other</p> <p>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</p> | <p><b>Description of the assessment method</b></p> <p>Assessment of the course is designed to evaluate students' ability to critically analyse scientific evidence, apply theoretical knowledge to practical contexts, and communicate scientific information effectively. The assessment approach emphasises critical thinking, evidence-based reasoning and applied knowledge, rather than factual recall.</p> <p><b>Assessment methods include:</b></p> <ul style="list-style-type: none"> <li>• Weekly quizzes (15% of final grade)</li> <li>• Class engagement (15%)</li> <li>• Final quiz (40% of final grade)</li> <li>• Essay/report (30%)</li> </ul> <p><b>Description of assessment tasks</b></p> <p><u>Weekly quizzes:</u> At the end of each lecture, the professor will give the students quizzes related to the course material, and the students will be required to answer them. The subject matter of the questions will relate to the general ideas developed during the lecture.</p> <p><u>Class engagement:</u> Students will be assessed on preparedness, active participation in discussions, reflective assignments, constructive engagement with peers during group activities and appropriate academic behaviour.</p> <p><u>Final quiz:</u> At the end of the course, students complete a final quiz designed to assess their understanding of key concepts covered throughout the module. The quiz consists of multiple-choice questions and short open-ended responses, focusing on the application and interpretation of knowledge rather than simple recall.</p> <p><u>Essay/report:</u> Essay assessment may include reflective essays, case-study based essays, comparative or argumentative essays which will cover all lectures and aspects of the course. Each lecturer will provide 2-3 essay topics related to his/her lecture.</p> <p><b>Evaluation criteria</b></p> <p>Student performance is evaluated according to the following criteria:</p> <ul style="list-style-type: none"> <li>• quality and relevance of scientific literature</li> </ul> |          |                           |          |    |                            |    |                                    |    |               |    |                   |    |                     |            |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>critical analysis and evaluation of evidence</li> <li>application of knowledge to programme design</li> <li>interpretation of data or case study</li> <li>clarity and structure of written work</li> <li>quality of presentation and communication</li> <li>accuracy and completeness of responses to quiz questions.</li> </ul> <p><b>Accessibility of evaluation criteria</b></p> <p>Detailed assessment guidelines, marking rubrics and submission instructions are made available to students through the course digital learning platform at the beginning of the semester.</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 5. RECOMMENDED BIBLIOGRAPHY

The following papers provide an overview of the scientific principles of the Mediterranean Diet as a Paradigm of prudent and sustainable dietary pattern.

- Asnicar, F., et al. (2025). Gut micro-organisms associated with health, nutrition and dietary interventions. *Nature*, 650, 450–458.
- Casas, R., Ruiz-León, A. M., Argente, J., Alasalvar, C., Bajoub, A., Bertomeu, I., Caroli, M., Castro-Barquero, S., Crispi, F., Delarue, J., Fernández-Jiménez, R., Fuster, V., Fontecha, J., Gómez-Fernández, P., González-Juste, J., Kanaka-Gantenbein, C., Kostopoulou, E., Lamuela-Raventós, R. M., Manios, Y., Marcos, A., Moreno, L. A., de Pascual-Teresa, S., Raidó-Quintana, B., Rivera-Ferre, M. G., Santos-Beneit, G., Shai, I., Spiliotis, B. E., Trichopoulou, A., Vania, A., Varela-Moreiras, G., Vila-Marti, A., Willett, W., Ros, E., & Estruch, R. (2025). A new Mediterranean lifestyle pyramid for children and youth: A critical lifestyle tool for preventing obesity and associated cardiometabolic diseases in a sustainable context. *Advances in Nutrition*, 16(3), Article 100381. <https://doi.org/10.1016/j.advnut.2025.100381>
- Food and Agriculture Organization, & World Health Organization. (2019). Sustainable healthy diets: Guiding principles. FAO.
- Food and Agriculture Organization. (2021). Sustainable food innovation in the Mediterranean. FAO.
- Garrity, K., Krzyzanowski Guerra, K., Hart, H., et al. (2024). Local food system approaches to address food and nutrition security among low-income populations: A systematic review. *Advances in Nutrition*, 15, Article 100156.
- Michel, M., Eldridge, A. L., Hartmann, C., Klassen, P., Ingram, J., & Meijer, G. W. (2024). Benefits and challenges of food processing in the context of food systems, value chains and sustainable development goals. *Trends in Food Science & Technology*, 153, Article 104703.
- Rahimah, S., Talei, T. E., et al. (2026). Functional foods and dietary matrices for metabolic improvement: An integrative review of mechanisms, evidence and future directions. *Journal of Functional Foods*, 139, Article 107240. <https://doi.org/10.1016/j.jff.2026.107240>
- Rivera-Navarro, J., Conde, P., et al. (2020). Urban environment and dietary behaviours as perceived by residents living in socioeconomically diverse neighbourhoods: A qualitative study in a Mediterranean context. *Appetite*, 157, Article 104983.
- Trichopoulou, A. (2021). Mediterranean diet as intangible heritage of humanity: 10 years on. *Nutrition, Metabolism and Cardiovascular Diseases*, 31(7), 1943–1951.
- UNICEF, World Health Organization, & World Bank Group. (2023). Levels and trends in child malnutrition: Key findings of the 2023 edition.
- Willett, W., et al. (2019). Food in the Anthropocene: The EAT–Lancet Commission on healthy diets from sustainable food systems. *The Lancet*, 393(10170), 447–492.

## HUAUOE012 - Sports Nutrition for Young Athletes

### 1. GENERAL

|                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                          |                                                       |                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>SCHOOL</b>                                                                                                                                                                                                                                                          | School of Health Science and Education, Harokopio University                                                                                                                                                                                                                             |                                                       |                                                                                      |
| <b>ACADEMIC UNIT</b>                                                                                                                                                                                                                                                   | Department of Nutrition and Dietetics                                                                                                                                                                                                                                                    |                                                       |                                                                                      |
| <b>LEVEL OF STUDIES</b>                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                             |                                                       |                                                                                      |
| <b>COURSE CODE</b>                                                                                                                                                                                                                                                     | HUAUOE012                                                                                                                                                                                                                                                                                | <b>SEMESTER</b>                                       | 3 <sup>rd</sup> Semester of Full-Time (FT)<br>3 <sup>rd</sup> Year of Part-Time (PT) |
| <b>COURSE TITLE</b>                                                                                                                                                                                                                                                    | Sports Nutrition for Young Athletes                                                                                                                                                                                                                                                      |                                                       |                                                                                      |
| <b>INDEPENDENT TEACHING ACTIVITIES</b><br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> |                                                                                                                                                                                                                                                                                          | <b>WEEKLY TEACHING HOURS</b>                          | <b>CREDITS</b>                                                                       |
| Lectures                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                          | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month | 7.5                                                                                  |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                              |                                                                                                                                                                                                                                                                                          |                                                       |                                                                                      |
| <b>COURSE TYPE</b><br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | Specialization / skills development                                                                                                                                                                                                                                                      |                                                       |                                                                                      |
| <b>PREREQUISITE COURSES</b>                                                                                                                                                                                                                                            | None                                                                                                                                                                                                                                                                                     |                                                       |                                                                                      |
| <b>LANGUAGE OF INSTRUCTION AND OF ASSESSMENT</b>                                                                                                                                                                                                                       | English                                                                                                                                                                                                                                                                                  |                                                       |                                                                                      |
| <b>MODE OF TEACHING</b><br><i>in-person (%)</i><br><i>synchronous distance learning (%)</i><br><i>asynchronous distance learning (%)</i><br><i>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                   | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%): 20%<br><br>Synchronous teaching is delivered through an approved teleconference platform, while asynchronous learning is delivered through the university learning management system. |                                                       |                                                                                      |
| <b>AVAILABILITY TO ERASMUS STUDENTS</b>                                                                                                                                                                                                                                | Yes                                                                                                                                                                                                                                                                                      |                                                       |                                                                                      |
| <b>COURSE WEBSITE (URL)</b>                                                                                                                                                                                                                                            | HUA Digital Learning Platform (Moodle).                                                                                                                                                                                                                                                  |                                                       |                                                                                      |

### 2. LEARNING OUTCOMES

#### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Brief Guide for drafting Learning Outcomes



The aim of the course is to provide an evidence-based understanding of sports nutrition in children and adolescents, with emphasis on growth, maturation, health, performance, and the practical design of nutrition strategies for young athletes across training, competition, recovery, and special clinical situations.

Students are expected to develop the following:

#### Knowledge

- Explain the physiological, developmental, and nutritional characteristics of child and adolescent athletes.
- Describe energy systems, substrate use, and age-related determinants of performance in youth sport.
- Discuss evidence-based recommendations for energy, macronutrient, micronutrient, and fluid intake in young athletes.
- Recognise the nutritional implications of body composition goals, low energy availability, REDs, injury, and selected medical conditions in pediatric sport.

#### Skills

- Assess growth, maturation, body composition, dietary intake, hydration status, and energy needs in young athletes.
- Interpret scientific literature and current guidelines relevant to pediatric sports nutrition.
- Design individualized nutrition plans for training, competition, recovery, and return-to-play contexts.
- Evaluate the safety, efficacy, and ethical considerations of supplement use in youth sport.

The learning outcomes correspond to Level 7 of the European Qualifications Framework (EQF).

#### General Competences

*Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?*

Search, analysis and synthesis of data and information, with the use of the necessary technology  
Adaptability to new situations  
Decision-making  
Working independently  
Team work  
Working in an international environment  
Working in an interdisciplinary environment  
Production of new research ideas

Project planning and management  
Respect for difference and multiculturalism  
Respect for the natural environment  
Showing social, professional and ethical responsibility and sensitivity to gender issues  
Criticism and self-criticism  
Production of free, creative and inductive thinking  
.....  
Other...  
.....

- Search, analysis and synthesis of data and information with the use of necessary technologies
- Adaptability to new situations
- Decision-making
- Working independently
- Team work
- Working in an international environment
- Working in an interdisciplinary environment
- Production of new research ideas
- Project planning and management
- Showing social, professional and ethical responsibility
- Criticism and self-criticism
- Production of creative and inductive thinking

### 3. COURSE SYLLABUS

This course introduces the scientific principles and applied practices of sports nutrition for children and adolescents engaged in organized sports and regular training. It examines nutritional requirements in relation to growth, maturation, energy metabolism, performance, hydration, recovery, supplement use, body composition, injury, behavior, strength development, and medical considerations in youth athletes.

Key topics include:

- Assessment of growth, maturation and energy needs in young athletes
- Energy systems and performance

- Macronutrient Requirements for Young Athletes
- Key micronutrients for growth and performance
- Hydration Strategies for Pediatric Sports Performance
- Nutrition for Training, Competition, and Recovery
- Safe and Evidence-Based Use of Supplements for young athletes
- Nutrition for Injury Prevention and Recovery in Young Athletes
- Psychological and Behavioral Aspects of Sports Nutrition in Children
- Body composition and REDs in youth
- Designing Personalized Nutrition Plans for the Pediatric Athlete
- Strength training in childhood and adolescence: Talent identification / Early specialization or long-term diversification
- Nutrition in young athletes with medical conditions

#### 4. TEACHING AND LEARNING METHODS - ASSESSMENT

| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i>                                                                                                                                                                                                                                                                                                           | Distance learning using a combination of synchronous and asynchronous teaching.                                                                                                                                                                               |  |          |                           |          |    |                            |    |               |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------|---------------------------|----------|----|----------------------------|----|---------------|----|
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                                                                                                                                                                                                      | Communication with students is conducted through weekly live sessions, scheduled virtual office hours, discussion forums, and email communication supported by the university learning platform.                                                              |  |          |                           |          |    |                            |    |               |    |
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, x.a.</i>                                                                                                                                                                                     | Student interaction is supported through group discussion during live sessions, collaborative assignments, and online discussion forums.                                                                                                                      |  |          |                           |          |    |                            |    |               |    |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                                                                                                                                                                                                              | ICT tools used in the course include: <ul style="list-style-type: none"><li>• Teleconference platform (Microsoft Teams)</li><li>• Asynchronous learning platform (Moodle)</li><li>• Collaborative digital tools</li><li>• Online assessment systems</li></ul> |  |          |                           |          |    |                            |    |               |    |
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                                                                                                                                                                                                       | Students are required to have: <ul style="list-style-type: none"><li>• computer or tablet</li><li>• reliable internet connection</li><li>• webcam and microphone</li><li>• access to university digital learning platforms</li></ul>                          |  |          |                           |          |    |                            |    |               |    |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                                                                                                                                                                                                              | All assignments are checked using Turnitin or equivalent plagiarism detection software.<br>Academic misconduct may lead to disciplinary procedures according to university regulations.                                                                       |  |          |                           |          |    |                            |    |               |    |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br>(1) The use of Artificial Intelligence is prohibited in all circumstances<br>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor<br>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature<br>(4) Students are free to use Artificial Intelligence | The use of Artificial Intelligence tools is allowed only when clearly acknowledged and properly referenced.<br>Students remain responsible for the originality and accuracy of their work.                                                                    |  |          |                           |          |    |                            |    |               |    |
| <b>ORGANISATION OF TEACHING</b><br><i>The mode and methods of teaching are described in detail.<br/>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.</i>                                     | <table><tr><th>Activity</th><th>Semester workload (hours)</th></tr><tr><td>Lectures</td><td>39</td></tr><tr><td>Study of lecture materials</td><td>50</td></tr><tr><td>Essay writing</td><td>61</td></tr></table>                                             |  | Activity | Semester workload (hours) | Lectures | 39 | Study of lecture materials | 50 | Essay writing | 61 |
| Activity                                                                                                                                                                                                                                                                                                                                                                          | Semester workload (hours)                                                                                                                                                                                                                                     |  |          |                           |          |    |                            |    |               |    |
| Lectures                                                                                                                                                                                                                                                                                                                                                                          | 39                                                                                                                                                                                                                                                            |  |          |                           |          |    |                            |    |               |    |
| Study of lecture materials                                                                                                                                                                                                                                                                                                                                                        | 50                                                                                                                                                                                                                                                            |  |          |                           |          |    |                            |    |               |    |
| Essay writing                                                                                                                                                                                                                                                                                                                                                                     | 61                                                                                                                                                                                                                                                            |  |          |                           |          |    |                            |    |               |    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |            |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|--|
| <p>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Independent study   | 50         |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Course total</b> | <b>200</b> |  |
| <p><b>STUDENT ASSESSMENT</b></p> <p><i>Description of the assessment method</i></p> <p>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other</p> <p>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |            |  |
| <p><b>Description of the assessment method</b></p> <p>Assessment of the course is designed to evaluate students' ability to critically analyse scientific evidence, apply theoretical knowledge to practical contexts, and communicate scientific information effectively. The assessment approach emphasises critical thinking, evidence-based reasoning and applied knowledge, rather than factual recall.</p> <p><b>Assessment methods include:</b></p> <ul style="list-style-type: none"> <li>• applied scientific report and presentation (70% of final grade)</li> <li>• final quiz (30% of final grade)</li> </ul> <p><b>Description of assessment tasks</b></p> <p><u>Applied scientific report and presentation</u></p> <p>Students prepare a scientific report in journal-article format (2000 words) designing an evidence-based nutrition strategy, case analysis, or applied support plan for a pediatric athlete or youth sport setting. Students also submit a 10-minute recorded presentation summarising the key elements of the project.</p> <p><u>Final quiz</u></p> <p>At the end of the course, students complete a final quiz designed to assess their understanding of key concepts covered throughout the module. The quiz consists of multiple-choice questions and short open-ended responses, focusing on the application and interpretation of knowledge rather than simple recall.</p> <p><b>Evaluation criteria</b></p> <p>Evaluation criteria include quality of literature use, critical analysis, application of knowledge, interpretation of case data, clarity of written work, and quality of presentation.</p> <p><b>Accessibility of evaluation criteria</b></p> <p>Detailed assessment guidelines, marking rubrics and submission instructions are made available to students through the course digital learning platform at the beginning of the semester.</p> |                     |            |  |

## 5. RECOMMENDED BIBLIOGRAPHY

Indicative textbooks, consensus statements, and professional guidance relevant to sports nutrition in children and adolescents include:

- Thomas, D. T., Erdman, K. A., & Burke, L. M. (2016). Position of the Academy of Nutrition and Dietetics, Dietitians of Canada, and the American College of Sports Medicine: Nutrition and athletic performance.
- Mountjoy, M., et al. (2023). IOC consensus statement on Relative Energy Deficiency in Sport (REDs).
- Capra ME, Stanyevic B, Giudice A, Monopoli D, Decarolis NM, Esposito S, Biasucci G. Nutrition for Children and Adolescents Who Practice Sport: A Narrative Review. *Nutrients*. 2024 Aug 22;16(16):2803. doi: 10.3390/nu16162803. PMID: 39203939; PMCID: PMC11357223.
- Desbrow B, McCormack J, Burke LM, Cox GR, Fallon K, Hislop M, Logan R, Marino N, Sawyer SM, Shaw G, Star A, Vidgen H, Leveritt M. Sports Dietitians Australia position statement: sports nutrition for the adolescent athlete. *Int J Sport Nutr Exerc Metab*. 2014 Oct;24(5):570-84. doi: 10.1123/ijsnem.2014-0031. Epub 2014 Mar 25. PMID: 24668620.

- Everett S. Optimizing Performance Nutrition for Adolescent Athletes: A Review of Dietary Needs, Risks, and Practical Strategies. *Nutrients*. 2025 Aug 28;17(17):2792. doi: 10.3390/nu17172792. PMID: 40944181; PMCID: PMC12430154.
- Alcock R, Hislop M, Vidgen HA, Desbrow B. Youth and Adolescent Athlete Musculoskeletal Health: Dietary and Nutritional Strategies to Optimise Injury Prevention and Support Recovery. *J Funct Morphol Kinesiol*. 2024 Nov 5;9(4):221. doi: 10.3390/jfmk9040221. PMID: 39584874; PMCID: PMC11587028.
- Desbrow B, Burd NA, Tarnopolsky M, Moore DR, Elliott-Sale KJ. Nutrition for Special Populations: Young, Female, and Masters Athletes. *Int J Sport Nutr Exerc Metab*. 2019 Mar 1;29(2):220-227. doi: 10.1123/ijsnem.2018-0269. Epub 2019 Feb 15. PMID: 30632423.
- Suh H, Kavouras SA. Water intake and hydration state in children. *Eur J Nutr*. 2019 Mar;58(2):475-496. doi: 10.1007/s00394-018-1869-9. Epub 2018 Nov 30. PMID: 30506317.
- Armstrong, N., & Van Mechelen, W. (2023). *Oxford Textbook of Children's Sport and Exercise Medicine* (4th ed.). Oxford University Press.

### Books

- Armstrong, N., & Van Mechelen, W. (2023). *Oxford Textbook of Children's Sport and Exercise Medicine* (4th ed.). Oxford University Press.
- Bagchi, D., Nair, S., & Sen, C. K. (Eds.). (2018). *Nutrition and Enhanced Sports Performance* (2nd ed.). Academic Press.
- Malina, R. M., Bouchard, C., & Bar-Or, O. (2004). *Growth, Maturation and Physical Activity* (2nd ed.). Human Kinetics.
- Faigenbaum, A. D., & Myer, G. D. (2020). *Youth Resistance Training: Concepts and Applications*. Human Kinetics.
- Lloyd, R. S., & Oliver, J. L. (2019). *Strength and Conditioning for Young Athletes: Science and Application*. Routledge.
- Rowland, T. W. (2017). *Children's Exercise Physiology* (2nd ed.). Human Kinetics.
- American Academy of Pediatrics. Sports and nutrition guidance statements and clinical reports.
- American College of Sports Medicine. ACSM's Guidelines for Exercise Testing and Prescription (latest edition).
- Sports Nutrition/ Asker Jeukendrup, Michael Gleeson. Human Kinetics. (latest edition).
- Nutrition for health, fitness, and sport. Twelfth edition / Eric S. Rawnsnson, J. David Branch, Tammy J. Stephenson. McGraw Hill Higher Education, [2020]
- BDA Sports Dietitians / Sport and Exercise Nutrition Register resources on youth sports nutrition.

***Additional current review papers and consensus statements will be provided throughout the semester.***

The following textbooks and guidelines provide an overview of the scientific principles and applied practices related to exercise, physical activity and health in children and adolescents. Additional scientific articles will be provided throughout the course.

### Physical Activity Guidelines

- World Health Organization (WHO)  
*Global Guidelines on Physical Activity and Sedentary Behaviour* (2020)  
<https://www.who.int/publications/i/item/9789240015128>
- American College of Sports Medicine (ACSM)  
*ACSM's Guidelines for Exercise Testing and Prescription* (11th edition)  
<https://www.acsm.org>

### Youth Exercise and Athlete Development Guidelines

- International Olympic Committee (IOC)  
*IOC Consensus Statement on Youth Athletic Development*  
<https://bjsm.bmj.com/content/49/13/843>
- National Strength and Conditioning Association (NSCA)

*Position Statement on Youth Resistance Training*

*<https://www.nsga.com>*

- UK Chief Medical Officers

## HUAUOE013 - Advanced Pediatric Clinical Nutrition and Dietetics

### 1. GENERAL

|                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                          |          |                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------|
| SCHOOL                                                                                                                                                                                                                                                   | School of Health Science and Education, Harokopio University of Athens                                                                                                                                                                                                                   |          |                                                                                      |
| ACADEMIC UNIT                                                                                                                                                                                                                                            | Department of Nutrition and Dietetics                                                                                                                                                                                                                                                    |          |                                                                                      |
| LEVEL OF STUDIES                                                                                                                                                                                                                                         | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                             |          |                                                                                      |
| COURSE CODE                                                                                                                                                                                                                                              | HUAUOE013                                                                                                                                                                                                                                                                                | SEMESTER | 3 <sup>rd</sup> Semester of Full-Time (FT)<br>3 <sup>rd</sup> Year of Part-Time (PT) |
| COURSE TITLE                                                                                                                                                                                                                                             | Advanced Pediatric Clinical Nutrition and Dietetics                                                                                                                                                                                                                                      |          |                                                                                      |
| INDEPENDENT TEACHING ACTIVITIES<br>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits | WEEKLY TEACHING HOURS                                                                                                                                                                                                                                                                    | CREDITS  |                                                                                      |
| Lectures                                                                                                                                                                                                                                                 | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month                                                                                                                                                                                                                                    | 7.5      |                                                                                      |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                |                                                                                                                                                                                                                                                                                          |          |                                                                                      |
| COURSE TYPE<br>general background, special background, specialization, general education, skills development                                                                                                                                             | Specialization                                                                                                                                                                                                                                                                           |          |                                                                                      |
| PREREQUISITE COURSES                                                                                                                                                                                                                                     | No                                                                                                                                                                                                                                                                                       |          |                                                                                      |
| LANGUAGE OF INSTRUCTION AND OF ASSESSMENT                                                                                                                                                                                                                | English                                                                                                                                                                                                                                                                                  |          |                                                                                      |
| MODE OF TEACHING<br>in-person (%)<br>synchronous distance learning (%)<br>asynchronous distance learning (%)<br>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)                                        | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%): 20%<br><br>Synchronous teaching is delivered through an approved teleconference platform, while asynchronous learning is delivered through the university learning management system. |          |                                                                                      |
| AVAILABILITY TO ERASMUS STUDENTS                                                                                                                                                                                                                         | Yes.                                                                                                                                                                                                                                                                                     |          |                                                                                      |
| COURSE WEBSITE (URL)                                                                                                                                                                                                                                     | HUA Digital Learning Platform (Moodle).                                                                                                                                                                                                                                                  |          |                                                                                      |

### 2. LEARNING OUTCOMES

#### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Brief Guide for drafting Learning Outcomes

The aim of the course is to present the current approaches for personalized medical nutrition

therapy (MNT)/dietetic management of pediatric diseases, such as malnutrition, obesity, type 1 and 2 diabetes, dyslipidemia, gastrointestinal diseases (celiac disease, inflammatory bowel disease ), allergies, renal disease, cancer, as well as the nutritional care in children with special needs, children with eating disorders, pediatric patients in ICU or undergoing surgery and for optimizing bone health.

Students are expected to develop the following:

#### Knowledge

- Understand the pathophysiology/metabolic implications of the aforementioned pediatric diseases/clinical conditions.
- Identify/understand the cutting-edge technologies, methods and tools for assessing the nutritional status and medical/dietetic care for the aforementioned pediatric diseases/clinical conditions.
- Identify/understand the current evidence-based recommendations for the aforementioned pediatric diseases/clinical conditions.

#### Skills

- Interpret scientific literature related to MNT of the aforementioned pediatric diseases/clinical conditions.
- Holistic assessment of nutritional status in children having the aforementioned pediatric diseases/clinical conditions.
- Design evidence-based, personalized nutrition care interventions and diet plans for the aforementioned pediatric diseases/clinical conditions.

#### Competences

- Integrate standardized/novel technologies, methods and tools in nutrition care of pediatric patients.
- Develop nutrition care programmes to support nutritional status and optimize growth in pediatric patients.
- Communicate scientific knowledge effectively in dietetic practice in the community and in clinical settings.

The learning outcomes correspond to Level 7 of the European Qualifications Framework (EQF).

#### General Competences

*Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?*

|                                                                                                  |                                                                                          |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Search, analysis and synthesis of data and information, with the use of the necessary technology | Project planning and management                                                          |
| Adaptability to new situations                                                                   | Respect for difference and multiculturalism                                              |
| Decision-making                                                                                  | Respect for the natural environment                                                      |
| Working independently                                                                            | Showing social, professional and ethical responsibility and sensitivity to gender issues |
| Team work                                                                                        | Criticism and self-criticism                                                             |
| Working in an international environment                                                          | Production of free, creative and inductive thinking                                      |
| Working in an interdisciplinary environment                                                      | ....                                                                                     |
| Production of new research ideas                                                                 | Other...                                                                                 |
|                                                                                                  | ....                                                                                     |

Search, analysis and synthesis of data and information with the use of necessary technologies  
Adaptability to new situations  
Decision-making  
Working independently  
Working in an interdisciplinary environment  
Production of new research ideas  
Project planning and management  
Respect for difference and multiculturalism  
Showing social, professional and ethical responsibility  
Criticism and self-criticism  
Production of creative and inductive thinking



### 3. COURSE SYLLABUS

This course introduces students to the concept of nutrition care process (NCP) for a wide range of pediatric diseases and medical conditions, including assessment/screening methods and the development of evidence-based and personalized medical nutrition therapy intervention based on dietetic interventions and counselling to optimize children's nutritional status and growth. This optional module is designed as an advanced continuation of the core module (UOEHUA002), focusing on more specialised clinical conditions and complex paediatric nutrition management approaches.

Key topics include

- Nutrition care process and nutrition counselling
- Medical nutrition therapy of obesity, type 1 and 2 diabetes and dyslipidemia
- Dietary management of malnutrition
- Medical nutrition therapy and nutritional support in patients in ICU/surgery
- Nutrition and bone health
- Medical nutrition therapy of celiac disease
- Medical nutrition therapy of inflammatory bowel disease
- Medical nutrition therapy of allergies
- Medical nutrition therapy of cancer
- Medical nutrition therapy of renal disease
- Medical Nutrition Therapy of children with special needs
- Eating disorders

### 4. TEACHING AND LEARNING METHODS - ASSESSMENT

|                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i>                                                                                                                       | Distance learning using a combination of synchronous and asynchronous teaching.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                  | Communication with students is conducted through a combination of synchronous and asynchronous methods, supported by digital technologies and the university's online learning platform (Moodle). This includes weekly live (synchronous) sessions, scheduled virtual office hours, and regular interaction through course discussion forums and email communication. In addition, announcements and learning materials are consistently uploaded on the Moodle platform, ensuring continuous and structured communication throughout the course. |
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, κ.α.</i> | Student interaction is supported through: <ul style="list-style-type: none"> <li>• group discussion during live sessions</li> <li>• collaborative assignments</li> <li>• online discussion forums</li> <li>• digital collaborative tools</li> </ul>                                                                                                                                                                                                                                                                                               |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                          | ICT tools used in the course include: <ul style="list-style-type: none"> <li>• Teleconference platform</li> <li>• Asynchronous learning platform</li> <li>• Collaborative digital tools</li> <li>• Online assessment systems</li> </ul>                                                                                                                                                                                                                                                                                                           |
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                   | Students are required to have: <ul style="list-style-type: none"> <li>• computer or tablet</li> <li>• reliable internet connection</li> <li>• webcam and microphone</li> <li>• access to university digital learning platforms</li> </ul>                                                                                                                                                                                                                                                                                                         |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                          | All assignments are checked using Turnitin or equivalent plagiarism detection software.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Academic misconduct may lead to disciplinary procedures according to university regulations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------|----------|----|----------------------------|----|---------------|----|-------------------|----|---------------------|------------|
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br>(1) The use of Artificial Intelligence is prohibited in all circumstances<br>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor<br>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature<br>(4) Students are free to use Artificial Intelligence                                                                                                                                      | The use of Artificial Intelligence tools is allowed only when clearly acknowledged and properly referenced.<br>Students remain responsible for the originality and accuracy of their work.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| <b>ORGANISATION OF TEACHING</b><br>The mode and methods of teaching are described in detail.<br>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.<br><br>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.                      | <table> <tr> <th>Activity</th><th>Semester workload (hours)</th></tr> <tr> <td>Lectures</td><td>39</td></tr> <tr> <td>Study of lecture materials</td><td>50</td></tr> <tr> <td>Essay writing</td><td>40</td></tr> <tr> <td>Independent study</td><td>71</td></tr> <tr> <td><b>Course total</b></td><td><b>200</b></td></tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Activity | Semester workload (hours) | Lectures | 39 | Study of lecture materials | 50 | Essay writing | 40 | Independent study | 71 | <b>Course total</b> | <b>200</b> |
| Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Semester workload (hours)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| Lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 39                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| Study of lecture materials                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| Essay writing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| Independent study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| <b>Course total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>200</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |                           |          |    |                            |    |               |    |                   |    |                     |            |
| <b>STUDENT ASSESSMENT</b><br>Description of the assessment method<br><br>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other<br><br>Specifically-defined evaluation criteria are given, and if and where they are accessible to students. | <b>Description of the assessment method</b><br>Assessment of the course is designed to evaluate students' ability to critically analyse scientific evidence, apply theoretical knowledge and use standardized technologies, assessment tools, dietetic techniques and communication skills into dietetic practice.<br><br><b>Assessment methods include:</b> <ul style="list-style-type: none"> <li>applied nutrition care process plan for selected pediatric diseases (20% of final grade)</li> <li>final quiz (80% of final grade)</li> </ul><br><b>Description of assessment tasks</b><br><br><u>Applied nutrition care process plan</u><br>Students prepare a nutrition care process plan for selected pediatric diseases and pathological conditions.<br><br><u>Final quiz</u><br>At the end of the course, students complete a final quiz designed to assess their understanding of key concepts covered throughout the module. The quiz consists of multiple-choice questions and short open-ended responses, focusing on the application and interpretation of knowledge rather than simple recall.<br><br><b>Evaluation criteria</b><br>The following evaluation criteria will be applied: <ul style="list-style-type: none"> <li>critical analysis and evaluation of evidence</li> <li>understanding pathophysiological and metabolic pathways and medical nutrition care processes in each of the selected pediatric diseases and pathological conditions</li> </ul> |          |                           |          |    |                            |    |               |    |                   |    |                     |            |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>• application of knowledge to design of nutritional care process plans</li> <li>• quality of nutritional care process plans and communication skills</li> <li>• accuracy and completeness of responses to quiz questions.</li> </ul> <p><b>Accessibility of evaluation criteria</b><br/>Detailed assessment guidelines and submission instructions are made available to students through the course digital learning platform (Moodle) at the beginning of the semester.</p> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 5. RECOMMENDED BIBLIOGRAPHY

The following textbooks and guidelines provide an overview of the scientific principles and applied practices related to exercise, physical activity and health in children and adolescents. Additional scientific articles will be provided throughout the course.

- Clinical pediatric dietetics (5th Edition), Shaw V. ISBN: 978-1-119-46729-8. Oxford: Wiley-Blackwell, 2020
- Guidelines for Screening, Prevention, Diagnosis and Treatment of Dyslipidemia in Children and Adolescents, Stephen R. Daniels. Endotext [Internet]. South Dartmouth (MA): MDText.com, Inc.; 2000–2020 Jan 18. <https://pubmed.ncbi.nlm.nih.gov/27809440/>

## HUAUOE014 - Internet of Things (IoT): Technologies, Systems & Applications

### 1. GENERAL

|                                                                                                                                                                                                                                                                 |                                                                                                        |                                                       |                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------|
| SCHOOL                                                                                                                                                                                                                                                          | Digital Technology, Harokopio University                                                               |                                                       |                                                                                      |
| ACADEMIC UNIT                                                                                                                                                                                                                                                   | Department of Informatics and Telematics                                                               |                                                       |                                                                                      |
| LEVEL OF STUDIES                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                           |                                                       |                                                                                      |
| COURSE CODE                                                                                                                                                                                                                                                     | HUAUOE014                                                                                              | SEMESTER                                              | 3 <sup>rd</sup> Semester of Full-Time (FT)<br>3 <sup>rd</sup> Year of Part-Time (PT) |
| COURSE TITLE                                                                                                                                                                                                                                                    | Internet of Things (IoT): Technologies, Systems & Applications                                         |                                                       |                                                                                      |
| INDEPENDENT TEACHING ACTIVITIES<br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> |                                                                                                        | WEEKLY TEACHING HOURS                                 | CREDITS                                                                              |
| Lectures and interactive seminars                                                                                                                                                                                                                               |                                                                                                        | Total: 39<br>FT: 3/week for 13 weeks<br>PT: 4-5/month | 7.5 ECTS                                                                             |
|                                                                                                                                                                                                                                                                 |                                                                                                        |                                                       |                                                                                      |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                       |                                                                                                        |                                                       |                                                                                      |
| COURSE TYPE<br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | Special background / Specialisation                                                                    |                                                       |                                                                                      |
| PREREQUISITE COURSES                                                                                                                                                                                                                                            | None (basic programming and networking knowledge recommended)                                          |                                                       |                                                                                      |
| LANGUAGE OF INSTRUCTION AND OF ASSESSMENT                                                                                                                                                                                                                       | English                                                                                                |                                                       |                                                                                      |
| MODE OF TEACHING<br><i>in-person (%)<br/>synchronous distance learning (%)<br/>asynchronous distance learning (%)<br/>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                                     | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%): 20% |                                                       |                                                                                      |
| AVAILABILITY TO ERASMUS STUDENTS                                                                                                                                                                                                                                | Yes                                                                                                    |                                                       |                                                                                      |
| COURSE WEBSITE (URL)                                                                                                                                                                                                                                            | HUA Digital Learning Platform (Moodle).                                                                |                                                       |                                                                                      |

### 2. LEARNING OUTCOMES

#### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

13. Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area

14. Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B

15. Brief Guide for drafting Learning Outcomes

The aim of this course is to provide students with a comprehensive understanding of IoT technologies and wearable devices as applied in child health and paediatric research. It bridges theoretical foundations with applied, data-driven thinking in clinical and public health contexts.

**Students are expected to develop the following:**

**A. Knowledge**

- Define key concepts of the Internet of Things (IoT), wearables, and digital health, and describe their applications in child health.
- Describe IoT system architecture (device–edge–cloud) and explain how data flows from sensors to cloud-based platforms.
- Explain the principles of operation of common sensors and wearable devices (e.g., accelerometers, heart rate monitors, sleep trackers).
- Compare wireless communication technologies (e.g., BLE, Wi-Fi, LPWAN) and understand their trade-offs in terms of energy consumption, range, and data transmission.
- Understand basic concepts of data transmission and IoT protocols (e.g., APIs, messaging concepts) and how data flows within IoT systems.
- Describe the role of cloud platforms and data pipelines, including real-time and batch data processing.
- Understand fundamental principles of time-series data analysis derived from wearable devices.
- Recognise key issues related to security, privacy, and ethics, particularly in paediatric populations (e.g., GDPR, informed consent, data protection).
- Describe emerging technologies (e.g., AIoT, digital twins) and their potential applications in personalised child health.

**B. Skills**

- Analyse and interpret wearable-derived data, identifying patterns in physical activity, sleep, and sedentary behaviour.
- Evaluate the quality and validity of data collected from children, comparing device-based and self-reported measurements.
- Apply basic data processing and visualisation techniques (e.g., preprocessing, simple analytics) to wearable datasets.
- Select appropriate communication technologies and system components based on technical and practical requirements (e.g., battery life, range, data needs).
- Map and describe IoT data flows (sensor → transmission → cloud → analysis).
- Design basic IoT system architectures for child health applications, including appropriate selection of sensors and infrastructure.
- Link IoT-derived data with health outcomes, such as physical activity levels, sleep patterns, and obesity-related indicators.
- Assess practical challenges and facilitators for implementing IoT solutions in real-world settings (schools, primary care, community).

**C. Competences**

- Integrate technological and clinical knowledge to design and evaluate IoT-based interventions in child health.
- Make informed decisions regarding technology selection, considering technical constraints, user needs and implementation context.
- Critically evaluate digital health solutions, identifying limitations, biases, and potential risks.
- Apply IoT solutions in real-world environments, including schools, primary care, and community settings.
- Address ethical and data protection challenges, particularly in paediatric populations.
- Collaborate effectively within interdisciplinary teams (e.g., healthcare professionals, engineers, researchers).

- Communicate technological concepts and data insights to non-technical stakeholders, supporting decision-making in clinical and public health contexts.

The learning outcomes correspond to Level 7 of the European Qualifications Framework (EQF).

#### General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?

|                                                                                                  |                                                                                          |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Search, analysis and synthesis of data and information, with the use of the necessary technology | Project planning and management                                                          |
| Adaptability to new situations                                                                   | Respect for difference and multiculturalism                                              |
| Decision-making                                                                                  | Respect for the natural environment                                                      |
| Working independently                                                                            | Showing social, professional and ethical responsibility and sensitivity to gender issues |
| Team work                                                                                        | Criticism and self-criticism                                                             |
| Working in an international environment                                                          | Production of free, creative and inductive thinking                                      |
| Working in an interdisciplinary environment                                                      | ....                                                                                     |
| Production of new research ideas                                                                 | Other...                                                                                 |
|                                                                                                  | ....                                                                                     |

- Search, analysis and synthesis of data and information with the use of necessary technologies
- Adaptability to new situations
- Decision-making
- Working in an international environment
- Working in an interdisciplinary environment
- Production of new research ideas
- Project planning and management
- Showing social, professional and ethical responsibility
- Respect for the natural environment and sustainability
- Criticism and self-criticism
- Production of creative and inductive thinking

### 3. COURSE SYLLABUS

This course introduces students to IoT technologies and wearable devices as applied in child health and paediatric research. It develops the conceptual, analytical, and applied skills needed to understand, evaluate, and utilise IoT systems in health-related contexts. The course spans 13 thematic lectures covering the following key topics:

#### Lecture 1: Introduction to IoT in Health

- What is IoT, wearables, digital health
- Examples in paediatric populations

#### Lecture 2: IoT Architecture & Ecosystems

- Device – Edge – Cloud
- IoT reference models
- How information flows through IoT systems

#### Lecture 3: Sensors & Physiological Data

- Accelerometers (physical activity)
- Heart rate sensors
- Sleep tracking
- Key concepts: sampling, accuracy vs precision, validity

#### Lecture 4: Data Quality & Measurement in Children

- Device vs questionnaire
- Bias & limitations
- Cut-offs for children (MVPA, sedentary)
- Link to child health research (e.g., childhood obesity)

**Lecture 5: Communication Technologies**

- BLE, Wi-Fi, LPWAN (LoRa/NB-IoT)
- Trade-offs: battery, range, data size
- Selecting the appropriate technology

**Lecture 6: IoT Protocols & Data Flow**

- How data is transmitted in IoT systems
- Key protocols and messaging concepts

**Lecture 7: Cloud Platforms & Data Pipelines**

- Storage & processing
- Real-time vs batch
- Dashboards
- Overview of major platforms (e.g., AWS/Azure)

**Lecture 8: Data Analytics for Wearable Data**

- Time-series data
- Basic preprocessing
- Simple analysis (activity patterns)
- Practical understanding, not heavy statistics

**Lecture 9: Designing IoT Systems**

- How to design a system
- Component selection
- Scalability & feasibility
- Applied examples

**Lecture 10: Applications in Child Health Research**

- Physical activity monitoring
- Sleep & behaviour
- Obesity & lifestyle interventions

**Lecture 11: Implementation in Real Settings**

- Schools
- Primary care
- Community interventions
- Facilitators and barriers to real-world use

**Lecture 12: Security, Privacy & Ethics**

- GDPR (children)
- Data protection
- Ethical challenges in paediatric digital health

**Lecture 13: Emerging Trends & Future Directions**

- AIoT
- Digital twins
- Personalised child health

**4. TEACHING AND LEARNING METHODS - ASSESSMENT**

|                                                                         |                                                                                                                                                   |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i> | Distance learning using a combination of synchronous (live sessions) and asynchronous (pre-recorded lectures, online materials) teaching methods. |
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>            | Communication is conducted through:                                                                                                               |



|                                                                                                                                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>Weekly live (synchronous) sessions via teleconference platform</li> <li>Scheduled virtual office hours</li> <li>Course discussion forums and email</li> <li>Regular announcements and materials uploaded on the university LMS (Moodle)</li> </ul>                                                                                                                                                                               |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------|-----------------------|----|----------------------------|----|-----------------------------------|----|-------------------------|----|------------------------|----|-------------------|----|--------------|------------------|
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, x.a.</i>                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>Group discussion during live sessions</li> <li>Collaborative team assignments</li> <li>Online discussion forums</li> <li>Shared digital collaborative tools (e.g. GitHub, collaborative notebooks)</li> </ul>                                                                                                                                                                                                                    |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>Teleconference platform (Microsoft Teams or equivalent)</li> <li>Asynchronous learning platform (Moodle)</li> <li>Online assessment and plagiarism detection systems</li> </ul>                                                                                                                                                                                                                                                  |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>Computer or laptop (min. 8 GB RAM recommended for lab exercises)</li> <li>Reliable internet connection</li> <li>Webcam and microphone</li> <li>Access to university digital learning platforms</li> <li>IoT hardware kit (Arduino/ESP32 — provided or purchased; details on course page)</li> </ul>                                                                                                                              |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                                                                                                                                                                                                              | All assignments are checked using Turnitin or equivalent plagiarism detection software. Academic misconduct may lead to disciplinary procedures according to university regulations.                                                                                                                                                                                                                                                                                    |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br>(1) The use of Artificial Intelligence is prohibited in all circumstances<br>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor<br>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature<br>(4) Students are free to use Artificial Intelligence | The use of Artificial Intelligence tools is allowed only when clearly acknowledged and properly referenced. Students remain responsible for the originality and accuracy of their submitted work.                                                                                                                                                                                                                                                                       |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
| <b>ORGANISATION OF TEACHING</b><br>The mode and methods of teaching are described in detail.<br>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.                                             | <table> <tr> <th>Activity</th><th>Semester workload</th></tr> <tr> <td>Lectures and seminars</td><td>39</td></tr> <tr> <td>Study of lecture materials</td><td>40</td></tr> <tr> <td>Laboratory / hands-on assignments</td><td>40</td></tr> <tr> <td>Individual project work</td><td>40</td></tr> <tr> <td>Essay / report writing</td><td>25</td></tr> <tr> <td>Independent study</td><td>16</td></tr> <tr> <td>Course total</td><td><b>200 hours</b></td></tr> </table> | Activity | Semester workload | Lectures and seminars | 39 | Study of lecture materials | 40 | Laboratory / hands-on assignments | 40 | Individual project work | 40 | Essay / report writing | 25 | Independent study | 16 | Course total | <b>200 hours</b> |
| Activity                                                                                                                                                                                                                                                                                                                                                                          | Semester workload                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
| Lectures and seminars                                                                                                                                                                                                                                                                                                                                                             | 39                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
| Study of lecture materials                                                                                                                                                                                                                                                                                                                                                        | 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
| Laboratory / hands-on assignments                                                                                                                                                                                                                                                                                                                                                 | 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
| Individual project work                                                                                                                                                                                                                                                                                                                                                           | 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
| Essay / report writing                                                                                                                                                                                                                                                                                                                                                            | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
| Independent study                                                                                                                                                                                                                                                                                                                                                                 | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |
| Course total                                                                                                                                                                                                                                                                                                                                                                      | <b>200 hours</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                   |                       |    |                            |    |                                   |    |                         |    |                        |    |                   |    |              |                  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.</p>                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p><b>STUDENT ASSESSMENT</b></p> <p>Description of the assessment method</p> <p>Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other</p> <p>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</p> | <p><b>Description of the Assessment Method</b></p> <p>Assessment is designed to evaluate students' ability to design IoT systems, apply technical knowledge, critically analyse trade-offs, and communicate solutions effectively.</p> <p><b>Assessment Methods Include:</b></p> <ul style="list-style-type: none"> <li>IoT system design project and presentation (60% of final grade)</li> <li>Hands-on lab assignments (20% of final grade)</li> <li>Final written exam or quiz (20% of final grade)</li> </ul> <p><b>Description of Assessment Tasks</b></p> <p><b>IoT System Design Project and Presentation</b></p> <p>Students design, prototype, and document an end-to-end IoT solution addressing a real-world use case (e.g. Smart City, Industrial IoT, Smart Home). The project includes a written technical report (~3,000 words) and a 15-minute recorded or live presentation.</p> <p><b>Lab Assignments</b></p> <p>A series of structured lab tasks covering hardware programming (Arduino/ESP32), protocol implementation (MQTT), and cloud connectivity, demonstrating practical IoT competence.</p> <p><b>Final Exam / Quiz</b></p> <p>A structured exam combining multiple-choice questions and short applied responses, covering all course modules. Focuses on understanding and application rather than simple recall.</p> <p><b>Evaluation Criteria</b></p> <ul style="list-style-type: none"> <li>Technical correctness and depth of system design</li> <li>Critical analysis of technology choices and trade-offs</li> <li>Integration of security, sustainability and ethical considerations</li> <li>Quality and completeness of documentation</li> <li>Clarity and effectiveness of presentation</li> <li>Accuracy and application in lab and exam tasks</li> </ul> <p>Detailed rubrics and assessment guidelines are provided via the course digital learning platform at the start of the semester.</p> |

## 5. RECOMMENDED BIBLIOGRAPHY

The following textbooks, reference works, and online resources provide foundational and advanced coverage of IoT technologies and systems. Additional scientific articles and technical documentation will be provided throughout the course.

### Core Textbooks

- Buyya, R., & Dastjerdi, A. V. (Eds.) (2016). Internet of Things: Principles and Paradigms. Elsevier.
- Greengard, S. (2021). The Internet of Things. MIT Press Essential Knowledge Series.
- Pfister, C. (2011). Getting Started with the Internet of Things. O'Reilly Media.
- Guinard, D., & Trifa, V. (2016). Building the Web of Things. Manning Publications.
- Borgia, E. (2014). The Internet of Things vision: Key features, applications and open challenges. Computer Communications, 54, 1–31.

#### IoT Security

- OWASP IoT Project — IoT Top 10 Vulnerabilities: <https://owasp.org/www-project-internet-of-things/>
- ENISA (European Union Agency for Cybersecurity) — Good Practices for IoT Security: <https://www.enisa.europa.eu>

#### Cloud & Edge Platforms

- AWS IoT Core Documentation: <https://docs.aws.amazon.com/iot/>
- Microsoft Azure IoT Documentation: <https://docs.microsoft.com/azure/iot-hub/>
- Eclipse IoT Open-Source Projects: <https://iot.eclipse.org>

#### Standards & Interoperability

- oneM2M Standards: <https://www.onem2m.org>
- W3C Web of Things (WoT): <https://www.w3.org/WoT/>
- Connectivity Standards Alliance — Matter Protocol: <https://csa-iot.org/all-solutions/matter/>

#### Machine Learning & Analytics

- TensorFlow Lite / TinyML: <https://www.tensorflow.org/lite>
- Warden, P., & Situnayake, D. (2019). TinyML: Machine Learning with TensorFlow Lite on Arduino and Ultra-Low-Power Microcontrollers. O'Reilly Media.

#### Sustainability & Ethics

- European Commission — Green Digital Transition: <https://digital-strategy.ec.europa.eu/en/policies/green-digital>
- ITU-T Focus Group on Environmental Efficiency for Artificial Intelligence and other Emerging Technologies: <https://www.itu.int>

#### Dissertation Topics

Students will develop expertise applicable to Master's dissertation projects in areas including:

- IoT device development & prototyping (wearable sensors, smart home devices, portable systems)
- IoT data analytics (sensor data classification, anomaly detection, predictive analytics)
- IoT for Smart Cities (environmental monitoring, mobility, service delivery)
- Industrial IoT / Cyber-Physical Systems (machine monitoring, quality control, edge ML)
- IoT Security & Privacy (firmware security, secure communication, IoT device penetration testing)

## **ANNEX A**

## HUAUOE015 - Dissertation

### 1. GENERAL

|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------|
| SCHOOL                                                                                                                                                                                                                                                          | School of Health Sciences and Education, Harokopio University                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |                                                                                      |
| ACADEMIC UNIT                                                                                                                                                                                                                                                   | Department of Nutrition and Dietetics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                                                                                      |
| LEVEL OF STUDIES                                                                                                                                                                                                                                                | Postgraduate (Level 7 – MSc)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |                                                                                      |
| COURSE CODE                                                                                                                                                                                                                                                     | HUAUOE015                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SEMESTER | 3 <sup>rd</sup> Semester of Full-Time (FT)<br>3 <sup>rd</sup> Year of Part-Time (PT) |
| COURSE TITLE                                                                                                                                                                                                                                                    | Dissertation / Research Article                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |                                                                                      |
| INDEPENDENT TEACHING ACTIVITIES<br><i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits</i> | WEEKLY TEACHING HOURS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | CREDITS  |                                                                                      |
| Research supervision, statistical seminars, independent research and dissertation preparation                                                                                                                                                                   | FT: Individual supervision throughout semester<br>PT: Monthly supervision meetings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 15       |                                                                                      |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |                                                                                      |
| COURSE TYPE<br><i>general background, special background, specialization, general education, skills development</i>                                                                                                                                             | Specialised scientific research, independent study, skills development and applied research training.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |                                                                                      |
| PREREQUISITE COURSES                                                                                                                                                                                                                                            | Successful completion of core modules of the MSc programme.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                                                                                      |
| LANGUAGE OF INSTRUCTION AND OF ASSESSMENT                                                                                                                                                                                                                       | English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |                                                                                      |
| MODE OF TEACHING<br><i>in-person (%)<br/>synchronous distance learning (%)<br/>asynchronous distance learning (%)<br/>(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)</i>                                     | in-person (%): 0%<br>synchronous distance learning (%): 80%<br>asynchronous distance learning (%): 20%<br>The dissertation is delivered through supervised independent research supported by synchronous online supervision meetings and asynchronous research activities.<br>Synchronous activities include: <ul style="list-style-type: none"><li>● individual supervision meetings</li><li>● dissertation workshops</li><li>● research seminars</li><li>● progress presentations</li><li>● methodological support sessions</li></ul> Asynchronous activities include: <ul style="list-style-type: none"><li>● independent literature review</li><li>● data analysis</li><li>● dissertation writing</li><li>● online learning resources</li><li>● self-directed research activities</li></ul> |          |                                                                                      |
| AVAILABILITY TO ERASMUS STUDENTS                                                                                                                                                                                                                                | Yes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |          |                                                                                      |

|                             |                                         |
|-----------------------------|-----------------------------------------|
| <b>COURSE WEBSITE (URL)</b> | HUA Digital Learning Platform (Moodle). |
|-----------------------------|-----------------------------------------|

## 2. LEARNING OUTCOMES

### Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Brief Guide for drafting Learning Outcomes

### Knowledge

- Critically evaluate scientific literature related to children's health, exercise, nutrition, wellbeing and digital technologies.
- Demonstrate advanced understanding of quantitative, qualitative or mixed-methods research methodologies.
- Explain ethical, legal and methodological principles relevant to health-related research.
- Analyse complex health-related datasets and interpret findings appropriately.
- Understand principles of scientific dissemination and evidence-based practice.

### Skills

- Develop an independent research proposal and research question.
- Conduct systematic literature searches and evidence synthesis.
- Apply appropriate research methodologies and statistical or qualitative analytical techniques.
- Critically interpret research findings within scientific and clinical contexts.
- Produce a scientifically structured dissertation following academic conventions.
- Present and defend research findings effectively to academic audiences.

### Competences

- Conduct independent scientific research at postgraduate level.
- Demonstrate critical thinking and scientific reasoning.
- Integrate interdisciplinary knowledge into applied research.
- Demonstrate professional, ethical and responsible conduct in research practice.
- Manage research projects independently within agreed timelines.
- Reflect critically on research limitations, implications and future directions.

Learning outcomes correspond to Level 7 of the European Qualifications Framework (EQF).

### General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?

|                                                                                                  |                                                                                          |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Search, analysis and synthesis of data and information, with the use of the necessary technology | Project planning and management                                                          |
| Adaptability to new situations                                                                   | Respect for difference and multiculturalism                                              |
| Decision-making                                                                                  | Respect for the natural environment                                                      |
| Working independently                                                                            | Showing social, professional and ethical responsibility and sensitivity to gender issues |
| Team work                                                                                        | Criticism and self-criticism                                                             |
| Working in an international environment                                                          | Production of free, creative and inductive thinking                                      |
| Working in an interdisciplinary environment                                                      | ....                                                                                     |
| Production of new research ideas                                                                 | Other...                                                                                 |
|                                                                                                  | ....                                                                                     |

The dissertation aims to develop the following competences:

- Search, analysis and synthesis of data and information with the use of necessary technologies
- Decision-making
- Working independently
- Teamwork and interdisciplinary collaboration
- Working in international scientific environments

- Research design and project management
- Critical thinking and self-reflection
- Production of new research ideas
- Scientific writing and communication
- Ethical and professional responsibility
- Creativity and inductive thinking

### 3. COURSE SYLLABUS

The dissertation represents the independent research component of the MSc programme. It provides students with the opportunity to apply research, analytical and scientific writing skills to a topic within children's health, exercise, nutrition, wellbeing, public health, digital health or artificial intelligence.

The dissertation will primarily use existing datasets and databases rather than primary data collection. Projects may include:

- secondary dataset analysis
- epidemiological analysis
- public health surveillance data analysis
- systematic reviews
- scoping reviews
- meta-analyses
- digital health and wearable data analysis
- AI-assisted health data interpretation
- evaluation of existing intervention datasets

#### Indicative Dissertation Areas

- physical activity and sedentary behaviour in children and adolescents
- nutrition and dietary assessment
- childhood obesity prevention and management
- mental health and wellbeing
- digital health technologies
- artificial intelligence in child and family health
- public health surveillance
- school-based health promotion
- behaviour change and lifestyle medicine
- health inequalities and vulnerable populations
- corporate and occupational wellbeing
- secondary analysis of cohort or registry data

#### Indicative Data Sources

Students may use publicly available, institutional or approved datasets, such as:

- Existing datasets of European, UK and Global research projects
- OECD Health Statistics
- UK Biobank
- ALSPAC
- NHANES
- HBSC
- PANIC study
- Active Healthy Kids Global Alliance data
- national health surveys
- school-based health datasets
- wearable and accelerometer datasets
- clinical or public health registries, subject to permissions

#### Dissertation Stages

##### Stage 1 — Topic Development and Proposal



|                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• identification of research area</li> <li>• development of research question and aims</li> <li>• initial literature review</li> <li>• feasibility assessment</li> <li>• proposal preparation</li> </ul>                                                                               |
| <b>Stage 2 — Ethics, Governance and Methodology</b> <ul style="list-style-type: none"> <li>• research ethics and GDPR</li> <li>• secondary data governance</li> <li>• methodological design</li> <li>• statistical or review protocol development</li> <li>• supervisor approval</li> </ul>                                   |
| <b>Stage 3 — Secondary Data Analysis and Evidence Synthesis</b> <ul style="list-style-type: none"> <li>• dataset familiarisation</li> <li>• data cleaning and variable selection</li> <li>• statistical or thematic analysis</li> <li>• systematic or scoping review methods</li> <li>• interpretation of findings</li> </ul> |
| <b>Stage 4 — Dissertation Writing</b> <ul style="list-style-type: none"> <li>• introduction and literature review</li> <li>• methodology</li> <li>• results</li> <li>• discussion</li> <li>• conclusions</li> <li>• referencing and appendices</li> </ul>                                                                     |
| <b>Stage 5 — Scientific Presentation and Reflection</b> <ul style="list-style-type: none"> <li>• oral presentation of findings</li> <li>• response to academic questions</li> <li>• reflection on implications, limitations and future research</li> </ul>                                                                    |

#### 4. TEACHING AND LEARNING METHODS - ASSESSMENT

|                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MODE OF TEACHING</b><br><i>Face-to-face, distance learning, etc.</i>                                                                                                                       | Distance learning through supervised independent research.<br>Teaching methods include: <ul style="list-style-type: none"> <li>• individual supervision meetings</li> <li>• online research seminars</li> <li>• methodological workshops</li> <li>• statistical support sessions</li> <li>• guided independent study</li> <li>• literature review activities</li> <li>• secondary data analysis</li> <li>• peer discussion and feedback</li> <li>• dissertation progress presentations</li> </ul> |
| <b>MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS</b>                                                                                                                                  | Communication is conducted through: <ul style="list-style-type: none"> <li>• scheduled supervision meetings</li> <li>• dissertation progress reviews</li> <li>• email communication</li> <li>• online office hours</li> <li>• Moodle announcements</li> <li>• discussion forums</li> </ul>                                                                                                                                                                                                        |
| <b>ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS</b><br><i>Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, x.a.</i> | Student interaction is supported through: <ul style="list-style-type: none"> <li>• research seminars</li> <li>• peer feedback sessions</li> <li>• online discussion groups</li> <li>• dissertation progress presentations</li> <li>• collaborative digital tools</li> </ul>                                                                                                                                                                                                                       |

| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, in laboratory training, in the communication with students</i>                                                                                                                                                                                                                                                                                                                                              | ICT tools include: <ul style="list-style-type: none"> <li>• HUA Moodle LMS</li> <li>• Zoom / Google Meet / Microsoft Teams</li> <li>• statistical software such as SPSS, R or Jamovi</li> <li>• reference management tools</li> <li>• online databases</li> <li>• systematic review tools such as Rayyan or Covidence where available</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------|---------------------------------|------|------------------------------------------------|------|-------------------------------|------|-------------------------------------------------------------|------|---------------------------------------------|------|-------------------------------------------|------|----------------------|-------|--------------------------|------|---------------------------------|------|--------------------|-------|
| <b>TECHNOLOGICAL EQUIPMENT REQUIREMENTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Students require: <ul style="list-style-type: none"> <li>• computer or laptop</li> <li>• reliable internet connection</li> <li>• webcam and microphone</li> <li>• access to university digital platforms</li> <li>• access to statistical or reference management software</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| <b>PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                              | All dissertations are checked using Turnitin or equivalent plagiarism detection software.<br>Students must comply with university regulations on: <ul style="list-style-type: none"> <li>• plagiarism</li> <li>• academic integrity</li> <li>• research ethics</li> <li>• authorship</li> <li>• referencing</li> <li>• responsible data use</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| <b>ARTIFICIAL INTELLIGENCE POLICY</b><br>(1) The use of Artificial Intelligence is prohibited in all circumstances<br>(2) The use of Artificial Intelligence is allowed only with the permission of the instructor<br>(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature<br>(4) Students are free to use Artificial Intelligence                                                                                                                 | Use of Artificial Intelligence tools is allowed only when clearly acknowledged and appropriately referenced.<br>Students remain responsible for: <ul style="list-style-type: none"> <li>• originality of submitted work</li> <li>• factual accuracy</li> <li>• correct interpretation of data</li> <li>• ethical and responsible use of AI</li> <li>• compliance with research governance and GDPR</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                         |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| <b>ORGANISATION OF TEACHING</b><br>The mode and methods of teaching are described in detail.<br>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.<br><br>The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS. | <table border="1"> <thead> <tr> <th>Activity</th><th>Semester workload</th></tr> </thead> <tbody> <tr> <td>Individual supervision meetings</td><td>15 h</td></tr> <tr> <td>Research seminars and methodological workshops</td><td>15 h</td></tr> <tr> <td>Literature review and reading</td><td>75 h</td></tr> <tr> <td>Research design, protocol and ethics/governance preparation</td><td>35 h</td></tr> <tr> <td>Dataset familiarisation and data management</td><td>50 h</td></tr> <tr> <td>Statistical analysis / evidence synthesis</td><td>80 h</td></tr> <tr> <td>Dissertation writing</td><td>100 h</td></tr> <tr> <td>Presentation preparation</td><td>15 h</td></tr> <tr> <td>Independent study and revisions</td><td>15 h</td></tr> <tr> <td>Dissertation Total</td><td>400 h</td></tr> </tbody> </table> | Activity | Semester workload | Individual supervision meetings | 15 h | Research seminars and methodological workshops | 15 h | Literature review and reading | 75 h | Research design, protocol and ethics/governance preparation | 35 h | Dataset familiarisation and data management | 50 h | Statistical analysis / evidence synthesis | 80 h | Dissertation writing | 100 h | Presentation preparation | 15 h | Independent study and revisions | 15 h | Dissertation Total | 400 h |
| Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Semester workload                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| Individual supervision meetings                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 15 h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| Research seminars and methodological workshops                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 15 h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| Literature review and reading                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 75 h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| Research design, protocol and ethics/governance preparation                                                                                                                                                                                                                                                                                                                                                                                                                                       | 35 h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| Dataset familiarisation and data management                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 50 h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| Statistical analysis / evidence synthesis                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 80 h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| Dissertation writing                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 100 h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| Presentation preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 15 h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| Independent study and revisions                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 15 h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| Dissertation Total                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 400 h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |
| <b>STUDENT ASSESSMENT</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Description of Assessment Method</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                   |                                 |      |                                                |      |                               |      |                                                             |      |                                             |      |                                           |      |                      |       |                          |      |                                 |      |                    |       |

#### Description of the assessment method

Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other

Specifically-defined evaluation criteria are given, and if and where they are accessible to students.

Assessment evaluates the student's ability to design, conduct, analyse and communicate an independent postgraduate research project using existing datasets, secondary data, public health databases or evidence synthesis methods.

All assessments are conducted in English.

Assessment focuses on:

- research question development
- methodological appropriateness
- quality of analysis
- interpretation of findings
- scientific writing
- critical reflection
- oral communication

| Assessments                             | Weight |
|-----------------------------------------|--------|
| Written Dissertation / Research Article | 70%    |
| Oral Presentation / Viva                | 30%    |

#### Written Dissertation / Research Article – 70%

Students submit an individual dissertation in the format of a scientific research article suitable for publication.

The dissertation should be approximately 4,000 words excluding references, tables, figures and appendices.

The research article format normally includes:

- Title
- Abstract
- Introduction
- Methods
- Results
- Discussion
- Conclusions
- References
- Tables and Figures

The dissertation may involve:

- secondary dataset analysis
- epidemiological analysis
- systematic or scoping reviews
- digital health and wearable datasets
- public health surveillance data
- AI-supported health data analysis

Students are expected to demonstrate:

- critical evaluation of literature
- methodological rigor
- appropriate analytical methods
- interpretation of findings
- scientific writing quality
- ethical and responsible use of data

#### Oral Presentation / Viva – 30%

Students deliver a 15 minute oral presentation and discussion of their dissertation project.

The presentation includes:

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>• background and rationale</li> <li>• research aims and objectives</li> <li>• methodology and analytical approach</li> <li>• presentation of key findings</li> <li>• interpretation and implications</li> <li>• strengths and limitations</li> <li>• future recommendations</li> </ul> <p>Students are expected to demonstrate:</p> <ul style="list-style-type: none"> <li>• scientific understanding of the topic</li> <li>• critical interpretation of findings</li> <li>• ability to justify methodological and analytical choices</li> <li>• professional presentation and communication skills</li> <li>• ability to respond critically to academic questions</li> </ul> <p><b>Evaluation Criteria</b></p> <p>Student performance is evaluated according to:</p> <ul style="list-style-type: none"> <li>• originality and relevance of research topic</li> <li>• quality of literature review</li> <li>• methodological appropriateness</li> <li>• quality of data analysis or evidence synthesis</li> <li>• interpretation and discussion of findings</li> <li>• scientific writing quality</li> <li>• presentation quality and communication skills</li> <li>• critical reflection and defence of research</li> <li>• ethical and responsible research conduct</li> <li>• appropriate use of references and datasets</li> </ul> <p><b>Accessibility of Evaluation Criteria</b></p> <p>Detailed dissertation guidelines, assessment rubrics, formatting requirements and submission instructions are made available to students through the course digital learning platform at the beginning of the semester. Students receive formative feedback during scheduled supervision meetings and summative written and/or recorded feedback following submission of the written dissertation and oral presentation. Assessment criteria, deadlines and presentation requirements are communicated clearly through Moodle and during dissertation workshops and supervision sessions.</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 5. RECOMMENDED BIBLIOGRAPHY

- Suggested bibliography:

*The following textbooks and guidelines provide an overview of the scientific principles and applied practices related to exercise, physical activity and health in children and adolescents. Additional scientific articles will be provided throughout the course.*

### Scientific Writing and Research Articles

- Murray, R. (2017). *How to Write a Thesis* (4th ed.). Open University Press.
- Day, R. A., & Gastel, B. (2022). *How to Write and Publish a Scientific Paper* (9th ed.). Cambridge University Press.
- Silvia, P. J. (2018). *How to Write a Lot: A Practical Guide to Productive Academic Writing* (2nd ed.). American Psychological Association.
- Greenhalgh, T. (2019). *How to Read a Paper: The Basics of Evidence-Based Medicine and Healthcare* (6th ed.). Wiley-Blackwell.
- [Elsevier Researcher Academy – Scientific Writing](#)
- [Springer Nature Author Academy](#)

- [BMJ Research to Publication Programme](#)

#### Presentation and Scientific Communication Skills

- Alley, M. (2013). *The Craft of Scientific Presentations* (2nd ed.). Springer.
- Reynolds, G. (2019). *Presentation Zen: Simple Ideas on Presentation Design and Delivery* (3rd ed.). New Riders.
- [TED Talks – Presentation Skills](#)
- [Nature Masterclasses – Research Communication](#)
- [Elsevier Researcher Academy – Presenting Research](#)

#### Statistics and Data Analysis

- Field, A. (2018). *Discovering Statistics Using IBM SPSS Statistics* (5th ed.). Sage Publications.
- Pallant, J. (2020). *SPSS Survival Manual* (7th ed.). McGraw-Hill Education.
- Tabachnick, B. G., & Fidell, L. S. (2019). *Using Multivariate Statistics* (7th ed.). Pearson.
- Motulsky, H. (2022). *Intuitive Biostatistics* (4th ed.). Oxford University Press.
- [IBM SPSS Tutorials](#)
- [Laerd Statistics](#)
- [StatQuest with Josh Starmer](#)
- [CrashCourse Statistics](#)
- [jamovi Statistical Software](#)
- [JASP Statistical Software](#)
- [R Project for Statistical Computing](#)
- [RStudio / Posit](#)

#### Systematic Reviews and Evidence Synthesis

- Higgins, J. P. T., Thomas, J., Chandler, J., et al. (2023). *Cochrane Handbook for Systematic Reviews of Interventions* (Version 6.4). Cochrane.
- Aromataris, E., & Munn, Z. (2020). *JBIM Manual for Evidence Synthesis*. Joanna Briggs Institute.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., et al. (2021). The PRISMA 2020 Statement: An Updated Guideline for Reporting Systematic Reviews. *BMJ*, 372, n71.
- [PRISMA 2020 Guidelines](#)
- [Cochrane Interactive Learning](#)
- [Joanna Briggs Institute Evidence Synthesis](#)
- [Rayyan Systematic Review Tool](#)

#### Research Ethics and Open Science

- World Medical Association. (2013). Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects. *JAMA*, 310(20), 2191–2194.
- [Declaration of Helsinki](#)
- [UK Research Integrity Office](#)
- [Open Science Framework](#)
- [GDPR Information Portal](#)

#### Reference Management and Academic Tools

- [Mendeley](#)
- [Zotero](#)
- [EndNote](#)
- [Connected Papers](#)
- [ResearchRabbit](#)

#### Scientific Databases and Data Sources

- [PubMed](#)
- [Scopus](#)
- [Web of Science](#)
- [Cochrane Library](#)
- [WHO Global Health Observatory](#)
- [OECD Health Statistics](#)
- [UK Biobank](#)
- [ALSPAC](#)
- [NHANES](#)
- [HBSC Study](#)

## Guide to Dissertation Writing

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To ensure consistency and uniformity, Master's Dissertations should follow the structure below, in accordance with the guidelines of the University Library [Library Guidelines](#):

- Cover page (according to the template)
  - Title page (according to the template)
  - Acknowledgements (optional)
  - Table of Contents (including page numbers)
  - Main body of the dissertation
  - Appendices
- 

### *Technical Specifications*

The page size must be A4. Margins should be set at 2 cm on the top, bottom, and right side, and 2.5 cm on the left side. Text alignment should be justified. The font should support Greek characters (e.g., Times New Roman, Arial), font size should be 12 pt, and line spacing should be 1.5. A spacing equivalent to 1.5 lines should be left between paragraphs.

It is recommended that dissertations are organised into Chapters or include Chapters. Chapters and subchapters should be numbered using Arabic numerals, e.g., 1.1, 1.2. or 1.1.1, 1.2.1, 1.2.2., etc.

---

**The main body of the dissertation should include the following sections and subsections:**

1. Title
  2. Abstract and keywords
  3. Introduction
  4. Methods
  5. Results
  6. Discussion
  7. Conclusions
  8. References
  9. Appendices
- 

### **Abstract**

The Abstract should provide an informative summary of the study design, procedures, and findings. It should be structured into the following sections:

- Introduction and Aim
- Materials and Methods

- Results
- Conclusions

It is recommended that the Abstract does not exceed 500 words.

---

## Keywords

Immediately after the Abstract, up to five (5) keywords should be listed. These should correspond to internationally recognised indexing terms. For biomedical sciences, students may use the Index Medicus terminology.

---

## Introduction

The Introduction should systematically present the scientific background related to the research field of the dissertation. Initially, a review of the broader scientific area should be provided, followed by a review of the specific topic addressed in the dissertation. Subsequently, the research gap should be identified and the issues requiring further investigation should be highlighted.

---

## Aim

This subsection should identify the research gaps in the relevant literature and subsequently present the hypotheses and specific objectives constituting the subject of the dissertation research.

---

## Methodology

This section presents the methods used for conducting the dissertation . It is recommended that it is divided into subsections:

- **Research design**, describing whether the study is laboratory-based research, an observational epidemiological study, a double-blind randomised intervention trial, or a systematic scoping review or meta-analysis, as well as the study location and duration. All outcomes, exposures, predictors, and, where relevant, diagnostic criteria should be clearly defined.
- **Study sample**, where the type of study (human study, animal study, in vitro study) and sample size are described in detail, together with the sampling method (e.g., simple random sampling, stratified sampling, cluster sampling, consecutive sampling, convenience sampling), participant selection criteria (inclusion and exclusion criteria), participation rate (for studies involving humans), methods of data collection (personal interview, self-administered questionnaires, telephone interviews, etc.), and study timeline.



- **Measured variables**, where detailed descriptions are provided regarding chemical and/or biochemical analyses, clinical and laboratory examinations, molecular genetics analyses, bioinformatics applications, and questionnaires used (including relevant permissions if copyrighted by other researchers). For each variable, references to the methodology and details regarding assessment methods, measurements, and instruments used should be provided.
  - **Statistical analysis**, where statistical methods should be described, including descriptive statistics used (e.g., mean  $\pm$  standard deviation, median and quartiles, percentages), statistical tests used for hypothesis testing, methods applied to assess assumptions for parametric or non-parametric tests, methods used to examine interactions between variables, statistical power analyses, and the statistical software used.
  - **Bioethics**, where it should be stated that the research was conducted according to Bioethical principles for humans and animals, as defined by the National Bioethics Committee and Greek legislation. In studies involving humans, it should be clarified that the Declaration of Helsinki (1989) was followed and that participants were informed about the study aims and provided written informed consent for participation. Any potential conflict of interest arising during the conduct of the study should also be declared in this section.
- 

## Results

This section presents the findings obtained from the data analysis accurately and clearly, without interpretation or comparison with findings from other studies.

For example, in studies involving field-collected data, the number of participants at each stage of the study should first be reported (number potentially eligible, assessed for eligibility, considered suitable, included in the study, completing follow-up/intervention, and finally analysed). The use of a flowchart is recommended for presenting this information.

Subsequently, descriptive characteristics of participants should be reported (sociodemographic, clinical, laboratory, nutritional characteristics, exposure to potential risk factors). Similarly, in studies involving chemical or microbiological analyses of foods or biological samples, the main characteristics of the analysed samples should first be presented.

Regarding the main findings, unadjusted estimates should initially be presented, followed by estimates adjusted for confounding factors. Any additional analyses performed (e.g., subgroup analyses, interaction analyses) should also be reported.

The use of Tables, Figures, and Diagrams is recommended for presenting results more effectively. Each table column should have a brief explanatory heading, while vertical lines separating columns should be avoided. Every Table, Figure, or Diagram should be self-explanatory. Any explanatory notes (e.g., abbreviations, methods of data presentation) should appear immediately below the Table, Figure, or Diagram.

Results presented in Tables should not be repeated verbatim in the text and vice versa.

---

## Discussion

This section should be linked to the Introduction and particularly to the subsection describing the study aim.

Initially, the key findings should be summarised in relation to the study objectives. Subsequently, the findings should be interpreted overall, taking into account the study objectives and potential limitations.

The findings should be compared with those of other researchers who have investigated similar topics, and similarities or differences should be discussed.

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## Limitations

The limitations of the study should be reported and discussed, taking into consideration possible sources of bias. Any attempts to minimise or address these potential biases should also be described.

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## Conclusions

This section should conclude the dissertation by discussing the broader implications of the findings, prospects arising from their application, public health recommendations derived from the findings, recommendations for future investigation of the topic through additional studies, and potential research questions emerging from the presented results.

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## References

This section should include all bibliographic sources used in the dissertation (books, book chapters, journal articles, conference proceedings, etc.).

References should follow the author guidelines of the *American Journal of Clinical Nutrition*:

[http://ajcn.nutrition.org/site/misc/ifa\\_format.xhtml#ref](http://ajcn.nutrition.org/site/misc/ifa_format.xhtml#ref)

References in the text should be numbered consecutively according to the order of appearance. The same numbering sequence should be followed in the reference list, which should contain only references cited in the dissertation .

References are recommended to be recent (usually from the last 10 years), unless they are primary references or landmark studies directly relevant to the topic.

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## Examples of References

### Journal article:

Hamer M, Steptoe A. Prospective study of physical fitness, adiposity, and inflammatory markers in healthy middle-aged men and women. *Am J Clin Nutr* 2009;89:85–89.

### Book chapter:

Young VR, Tharakan JF. Nutritional essentiality of amino acids and amino acid requirements in healthy adults. 2nd ed. In: Cynober LA, ed. *Metabolic and therapeutic aspects of amino acids in clinical nutrition*. Boca Raton, FL: CRC Press, 2004:439–447.

### Website reference:

Food and Agriculture Organization [FAO] (2010) Rice farming in Kenya. Accessed February 24, 2010, at <http://www.fao.org/isfp/isfp-home/en/>

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## Appendices

The Appendices should include the study questionnaires and any additional material necessary for understanding the dissertation .

If publications and/or presentations at international conferences have resulted from the dissertation work, it is recommended that they are included in the Appendices at the end of the dissertation .

#### **4. ACADEMIC PROFILES OF MODULE LEADERS** (*listed in alphabetical order*)

## CURRICULUM VITAE 1.

**School:** School of Electrical and Electronic Engineering, National Technical University of Athens (NTUA)

**Personal Information:**

First Name: Athanasios

Last Name: Anastasiou

E-mail: aanastasiou@biomed.ntua.gr

**Academic Qualifications:**

- PostDoctoral Research, Harokopio University of Athens — Innovative, AI-Enabled Tools and Methodologies for Hospital Transformation
- Data Protection Officer — ISO/IEC 17024 certification
- **PhD** — Biomedical Engineering Laboratory, School of Electrical and Electronic Engineering, National Technical University of Athens (2015). Thesis: “Monitoring of compliance on an individual treatment through Mobile Innovations”
- **MSc** in Biomedical Engineering — National Technical University of Athens (2010)
- **MSc** in Digital Signal and Image Processing — University of Central Lancashire (2006)
- **BEng** in Electrical and Electronic Engineering — University of Newcastle upon Tyne (2005)

**Teaching Experience:**

- Lecturer, Interdepartmental Postgraduate Program “Applied Innovations and Digital Technologies in Health” — University of West Attica (2023–present). Course: Human-Centered Design and Evaluation of Health Technology Innovations.
- Lecturer, Department of Informatics and Telematics, Harokopio University — Course: IoT Technologies and Applications (2023–present).
- Lecturer, School of Health Sciences and Education, Harokopio University — Course: Informatics Applications in Health Professions (2023–present).
- Lectures on Digital Image and Signal Processing — National Technical University of Athens (NTUA) (2023–present).
- Postgraduate teaching in Biomedical Engineering (7th and 8th Semester) — NTUA; Postgraduate studies in Medical Informatics, Robotic Surgery, Telemedicine, Cardiology, and IoT at University of Patras, Athens Medical School, and Harokopio University (2009–present).

**Professional Experience / Activities:**

**April 2025–present:** Scientific Coordination and Data Analysis, National Public Health Program (UNICEF). Coordinated prevention actions, statistical analysis, data visualization, and support for the European Center for Prevention of Obesity.

**December 2023–present:** Project Manager, Motor Oil Group. Overseeing strategic industrial and technology projects, managing cross-functional teams, and driving digital transformation initiatives.

**December 2023–present:** Project and Technical Coordinator, Harokopio University of Athens (ICSA) and ANADELTA P.C. Coordination of 5 Horizon Europe and 2 National Projects in Biomedical Engineering.

**December 2021–present:** Data Protection Officer. Leading GDPR compliance across multiple research projects, developing data protection frameworks, and conducting privacy impact assessments.

**January 2020–present:** Co-Founder, Tecreando ([www.tecreando.com](http://www.tecreando.com)). Partnership providing solutions in Biomedicine, Wellness, Assisted Living, Transport, Telecommunications, and Defense.

**September 2012–present:** Research Funding Specialist / Proposal Writer. Wrote and reviewed 84 H2020 proposals (47 funded); supported 13 MSCA proposals. Strategic guidance on Horizon Europe funding and grant development.

**March 2009–present:** Project and Technical Coordinator, NTUA / ICCS Biomedical Engineering Laboratory. Coordination of 42 Horizon and 16 National projects in Biomedical and Electrical/Electronic Engineering.

**September 2017–present:** Leader, Applied Informatics in mHealth (AiM) research team — managing 4 senior researchers and 6 PhD students.

**March 2020–present:** Occupational Health and Safety Officer (OHSO).

**December 2014–present:** Senior Researcher and Systems Architect, ICCS — Leader of the Applied Informatics in m-Health (AiM) Research Team.

### Research Activity:

Over 16 years of research experience in Biomedical Engineering, eHealth, and Medical Informatics at NTUA/ICCS and Harokopio University of Athens. Participant in 58+ European (H2020/Horizon Europe) and national research projects, including MSCA-RISE actions (PROPHETIC, ENDORSE, Bio-Phoenix, RESPECT). Research areas: AI-enabled healthcare, mHealth, IoT applications in health, patient monitoring, image and signal processing, machine learning, GDPR in digital health, and obesity prevention.

**Selected key projects:** ALADDIN, Go-myLife, HPVGuard, PD\_manager, HEARTEN, HOLOBALANCE, CAPTAIN, EVOTION, SmarTool, HARMONICS, MODELHealth, ASCAPE, and NanoDrop-UAS (ongoing).

### Scientific Publications:

**Journals:** 82 peer-reviewed journal articles (selected recent publications include works in Cancers, Electronics, Applied Sciences, Healthcare, Bioengineering, Future Internet, Microorganisms, Frontiers in Digital Health, PLoS One, and Studies in Health Technology and Informatics).

**Books/Chapters:** 9 book chapters (IGI Global, Kallipos Open Academic Editions, Springer).

**Conferences:** 46 conference papers (IEEE EMBC, IEEE BHI, ACM PETRA, MDM, GENEDIS, WorldS4, and others).

**Editorial roles:** Associate Editor and Editorial Review Board member for 11 international journals (IJEHMC, IJUDH, IJBCE, IJARPHM, IJPCH, IJBDCN, IJMCMC, IJNCR, IJRQEH, IJPHME, IJMDWTFE). Reviewer for 18 international journals including IEEE Transactions on Biomedical Engineering and IEEE Transactions on Information Technology in Biomedicine.

### Number of Citations (Google Scholar) / h-index:

Total Citations: 1,421 (904 since 2020) | h-index: 18 (15 since 2020) | i10-index: 33 (24 since 2020)

## CURRICULUM VITAE 2.

**School:** Department of Nutrition and Dietetics, School of Health Science and Education, Harokopio University

### Personal Information:

First Name: Konstantinos ("Costas")

Last Name: Anastasiou

E-mail: acostas@hua.gr

### Academic Qualifications:

PhD in Nutrition & Dietetics, Harokopio University (2010)

Thesis: The effect of weight loss on intramyocellular lipids in obese and diabetic subjects

MSc in Nutrition & Dietetics, Harokopio University (2002)

BSc in Nutrition & Dietetics, Harokopio University (2000)

### Teaching Experience:

Associate Professor, Harokopio University (2025–present)

Assistant Professor, Harokopio University (2020–2024)

Visiting Assistant Professor, Harokopio University (2016–2017)

Adjunct Professor, University of the Aegean (2010–2013)

### Teaching Areas:

Exercise, Nutrition and Health

Nutrition & Metabolism

Nutritional Assessment

Public Health Nutrition

### Supervision:

3 PhD students (as primary supervisor)

54 MSc dissertation students

36 BSc dissertation

### Professional Experience / Activities:

### Research Activity:

Lifestyle community interventions: impact on cardiometabolic health

Diet and physical activity in older adults and their impact in cognitive function

Diet and appetite regulation, with emphasis on pro-glucagon derived peptides

Lifestyle for weight loss maintenance

Intramyocellular lipid metabolism in insulin resistance states

### Methodologies:

Randomised Controlled Trials (RCTs)

Longitudinal cohort studies

Laboratory controlled trials



**Principal Investigator funding:**

Tackling micronutrient malnutrition and hidden hunger to improve health in the EU (Zero Hidden Hunger EU), Funding: European Commission, Co-Investigator

Food systems transformation towards healthy and sustainable dietary behaviour (PlanEat), Funding: European Commission, Co-Investigator

Breakfast consumption in relation to obesity indices and diet quality and Adequacy, Funding: Friesland Hellas, Principal Investigator

An intersectoral innovative solution involving DIGital tools, empowering families and integrating community CARE services for the prevention and management of type 2 diabetes and hypertension, DigiCare4You, Funding: European Commission, Co-Investigator

**Scientific Publications:**

Google Scholar list:

<https://scholar.google.com/citations?user=7OKSwq8AAAAJ&hl=en&oi=sra>

Pubmed list:

[https://pubmed.ncbi.nlm.nih.gov/?sort=date&term=Anastasiou+CA&cauthor\\_id=42204799](https://pubmed.ncbi.nlm.nih.gov/?sort=date&term=Anastasiou+CA&cauthor_id=42204799)

Peer-reviewed journal articles: 95

Conference presentations: >30

**Number of Citations (Google Scholar) / h-index:**

**Citations: 5402**

**h-index: 40**

**i10-index: 65**

## CURRICULUM VITAE 3.

**School:** Lab of Clinical Nutrition and Dietetics, Department of Nutrition and Dietetics, School of Physical Education, Sport Science and Dietetics, University of Thessaly

### Personal Information:

First Name: Odysseas  
Last Name: Androutsos  
E-mail: oandroutsos@uth.gr

### Academic Qualifications:

#### Background:

2005: BSc in Nutrition and Dietetics, Department of Nutrition and Dietetics, Technological Institute of Crete, Greece

2006: MSc (Medical Science) in Human Nutrition, University of Glasgow, UK

2015: PhD (title of thesis: "*Effect of intrauterine and postnatal factors on the development of cardiovascular risk factors in later life and the role of early intervention in childhood*"), 1<sup>st</sup> Pediatric Clinic of the University of Athens "Agia Sofia" Children's Hospital, Greece

#### Current Position:

Professor of Nutrition and Clinical Dietetics, Director of Lab of Clinical Nutrition and Dietetics

### Teaching Experience:

#### BSc-level (at the University of Thessaly):

Total experience: 8 years

Responsible for the Modules: "Pediatric Nutrition", "Clinical Nutrition", "Introduction to Clinical Nutrition", "Nutritional Assessment", "Nutrition Education", "Nutrition and Prevention of Non-Communicable Diseases", "Nutritional Psychology".

#### MSc-level (at the University of Thessaly and the European University Cyprus):

Total experience: 7 years

Responsible for the Modules: "Clinical Nutrition and Dietetics for Children and Adolescents", "Nutritional Behaviour and Education", "Prevention and Treatment of Obesity and Obesity-related Diseases", "Nutrition and Nutritional Assessment at different Stages of Life"

#### Supervisions:

6 post-doctoral researchers (2 completed)

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 PhD-students (1 completed)<br>External examiner in 5 international PhD-theses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 20 MSc-students (all completed)<br>57 BSc-students (53 completed)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Professional Experience / Activities:</b><br><br><u>Academic positions:</u><br><br>2016-2018: Lecturer (under contract) at Harokopio University of Athens, Greece<br>2018-2019: Lecturer (under contract) at University of Thessaly, Greece<br>2019-2024: Associate Professor of Nutrition and Clinical Dietetics, University of Thessaly, Greece<br>2024-today: Professor of Nutrition and Clinical Dietetics, University of Thessaly, Greece<br><br><u>Professional/Clinical Experience</u><br><br>2008-2013: Dietitian-Nutritionist (freelancer)<br>2024-today: Pediatric Dietitian-Nutritionist, Unit for Children and Adolescents with Obesity and Co-morbidities, Pediatric Clinic, University General Hospital of Larissa, Greece                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Research Activity:</b><br><br>2008-today: participation in several research projects as Principal Investigator, Project Manager or Member of research groups.<br><br><u>Indicative projects:</u><br>- «Addressing Child Obesity: Strengthening primary, secondary and tertiary prevention» (Ministry of Health and UNICEF)<br>- «Multimodal engagement and sustainable lifestyle interventions optimizing breast cancer risk reduction supported by artificial intelligence» (European Commission)<br>- “Addressing childhood obesity in vulnerable groups in Greece” (UNICEF).<br>- “Obesity and obesity-related diseases” (Dianeosis)<br>- «Science Engagement to Empower Disadvantaged Adolescents» (SEEDS) (European Commission)<br>- «An intersectoral innovative solution involving DIGital tools, empowering families and integrating community CARE services for the prevention and management of type 2 diabetes and hypertension: Digicare4U» (European Commission)<br>- «Development and implementation of a community-based intervention for the creation of a supportive social and physical environment for the improvement of lifestyle and the prevention of type 2 diabetes in high-risk families across Europe (Feel4Diabetes) (European Commission).<br>- «Multicomponent approach for the prevention of obesity at preschool age: use of behavioural models to understand factors influencing nutrition and physical activity and to develop policies for the promotion of healthy lifestyle: TOYBOX» (European Commission) |

### Scientific Publications:

- Moschonis G, Tanagra S, Koutsikas K, Nikolaidou A, **Androutsos O**, Manios Y. (2009) Association between serum 25-Hydroxyvitamin D levels and body composition in postmenopausal women: The Postmenopausal Health Study. *Menopause* 16(4):701-717 (Erratum in: *Menopause*. 2010; 17 (5): 1091).
- Moschonis G, Tanagra S, Vandrova A, Kyriakou AE, Dede V, Siatitsa PE, Koumpitski A, **Androutsos O**, Grammatikaki E, Kantilafti M, Naoumi A, Farmaki AE, Siopi A, Papadopoulou EZ, Voutsadaki E, Chlouveraki F, Maragkopoulou K, Argyri E, Giannopoulou A, Manios Y. (2010) Social, economic and demographic correlates of overweight and obesity in primary-school children: preliminary data from the Healthy Growth Study. *Public Health Nutr.* 13(10A):1693-1700.
- Manios Y, Kourlaba G, Grammatikaki E, **Androutsos O**, Moschonis G, Roma-Giannikou E. (2010) Development of a diet-lifestyle quality index for young children and its relation to obesity: The Preschoolers Diet-Lifestyle Index. *Public Health Nutr.* 13 (12): 2000-2009.
- Manios Y, Kourlaba G, Grammatikaki E, **Androutsos O**, Ioannou E, Roma-Giannikou E. (2010) Comparison of two methods for identifying dietary patterns associated with obesity in preschool children: the GENESIS study. *Eur J Clin Nutr.* 64:1407-1414.
- Yildirim M, Verloigne M, de Bourdeaudhuij I, **Androutsos O**, Manios Y, Felso R, Kovács E, Doessegger A, Bringolf-Isler B, te Velde SJ, Brug J, Chinapaw MJM. (2011) Study protocol of physical activity and sedentary behaviour measurement among schoolchildren by accelerometry - Cross-sectional survey as part of the ENERGY-project. *BMC Public Health.* 11:182.
- 6. Manios Y, Grammatikaki E, **Androutsos O**, Chinapaw MJM, Gibson EL, Buijs G, Iotova V, Socha P, Annemans L, Wildgruber A, Mouratidou T, Yngve A, Duvinage K, De Bourdeaudhuij I, on behalf of the ToyBox-study group. (2012) A systematic approach for the development of a kindergarten-based intervention for the prevention of obesity in preschool age children: The ToyBox-study. *Obesity Reviews* 13 Suppl 1: 3-12.
- Verloigne M, Van Lippevelde W, Maes L, Yildirim M, Chinapaw M, Manios Y, **Androutsos O**, Kovács E, Bringolf-Isler B, Brug J, De Bourdeaudhuij I. (2012) Levels of physical activity and sedentary time among 10- to 12-year-old boys and girls across 5 European countries using accelerometers: an observational study within the ENERGY-project. *Int J Behav Nutr Phys Act.* 9:34.
- Manios Y, Kanellakis S, **Androutsos O**, Maragkopoulou K, Giannopoulou A, Argyri E, Moschonis G. (2012) Development and validation of a simple model based on anthropometry: estimating fat mass for white postmenopausal women. *Menopause.* 19(4):467-470.

- **Androutsos O**, Grammatikaki E, Moschonis G, Roma-Giannikou E, Chrousos G, Manios Y, Kanaka-Gantenbein C. (2012) Neck Circumference: A useful screening tool of cardiovascular risk in children. *Pediatr Obes.* 7(3):187-195.
- Jiménez-Pavón D, Fernández-Alvira JM, te Velde S, Brug J, Bere E, Jan N, Kovacs E, **Androutsos O**, Manios Y, De Bourdeaudhuij I, Moreno LA. (2012) Associations of parental education and parental physical activity (PA) with children's PA: The ENERGY cross-sectional study. *Prev Med.* 55(4):310-314.
- Verloigne M, Lippevelde WV, Maes L, Yildirim M, Chinapaw M, Manios Y, **Androutsos O**, Kovács E, Bringolf-Isler B, Brug J, De Bourdeaudhuij I. (2013) Self-reported TV and computer time do not represent accelerometer-derived total sedentary time in 10 to 12-year-olds. *Eur J Public Health.* 23(1):30-32.
- Soriano-Maldonado A, Cuenca-García M, Moreno LA, González-Gross M, Leclercq C, **Androutsos O**, Guerra-Hernández EJ, Castillo MJ, Ruiz JR. (2013) Egg intake and cardiovascular risk factors in adolescents: role of physical activity; the HELENA study. *Nutr Hosp.* 28(3):868-877.
- Vik FN, Bjørnarå HB, Overby NC, Lien N, **Androutsos O**, Maes L, Jan N, Kovacs E, Moreno LA, Dössegger A, Manios Y, Brug J, Bere E. (2013) Associations between eating meals, watching TV while eating meals and weight status among children, ages 10-12 years in eight European countries: the ENERGY cross-sectional study. *Int J Behav Nutr Phys Act.* 15; 10:58.
- De Decker E, De Craemer M, De Bourdeaudhuij I, Wijndaele K, Duvinage K, **Androutsos O**, Iotova V, Lateva M, Alvira JM, Zych K, Manios Y, Cardon G. (2013) Influencing factors of sedentary behavior in European preschool settings: an exploration through focus groups with teachers. *J Sch Health.* 83(9):654-661.
- Guibas GV, Moschonis G, Xepapadaki P, Roumpedaki E, **Androutsos O**, Manios Y, Papadopoulos NG. (2013) Conception via in vitro fertilization and delivery by Caesarean section are associated with paediatric asthma incidence. *Clin Exp Allergy.* 43(9):1058-1066.
- De Bourdeaudhuij I, Verloigne M, Maes L, Van Lippevelde W, Chinapaw M, te Velde S, Manios Y, **Androutsos O**, Kovacs E, Dössegger A, Brug, J. (2013) Associations of physical activity and sedentary time with weight and weight status among 10- to 12- year- old boys and girls in Europe: a cluster analysis within the ENERGY-project. *Pediatr Obes* 8(5):367-375.
- Manios Y, **Androutsos O**, Moschonis G, Birbilis M, Maragkopoulou K, Giannopoulou A, Argyri E, Kourlaba G. (2013) Criterion validity of the Physical Activity Questionnaire for Schoolchildren (PAQ-S) in assessing physical activity levels: the Healthy Growth Study. *J Sports Med Phys Fitness.* 53(5):502-508.
- Jiménez-Pavón D, Sesé MA, Huybrechts I, Cuenca-García M, Palacios G, Ruiz JR, Breidenassel C, Leclercq C, Beghin L, Plada M, Manios Y, **Androutsos O**,

Dallongeville J, Kafatos A, Widhalm K, Molnar D, Moreno LA. (2013) Dietary and lifestyle quality indices with/without physical activity and markers of insulin resistance in European adolescents: the HELENA study. *Br J Nutr.* 110(10):1919-1925.

- **Androutsos O**, Moschonis G, Koumpitski A, Mantzou A, Roma-Giannikou E, Chrousos GP, Manios Y, Kanaka-Gantenbein C, on behalf of the “Healthy Growth Study” Group. (2014) The correlation of right 2D:4D finger length ratio to the low-grade inflammation marker IL-6 in children. *The Healthy Growth Study. Early Hum Dev.* 90(1):61-65.
- Van Stralen MM, Yildirim M, Wulp A, Te Velde SJ, Verloigne M, Doessegger A, **Androutsos O**, Kovács E, Brug J, Chinapaw MJ. (2014) Measured sedentary time and physical activity during the school day of European 10- to 12-year-old children: The ENERGY project. *J Sci Med Sport.* 17(2):201-206.
- **Androutsos O**, Moschonis G, Mavrogianni C, Roma-Giannikou E, Chrousos GP, Kanaka-Gantenbein C, Manios Y. (2014) Identification of lifestyle patterns, including sleep deprivation, associated with insulin resistance in children: the Healthy Growth Study. *Eur J Clin Nutr.* 68(3):344-349.
- Manios Y, Moschonis G, **Androutsos O**, Filippou C, Van Lippevelde W, Vik FN, Te Velde SJ, Jan N, Dössegger A, Bere E, Molnar D, Moreno LA, Chinapaw MJ, De Bourdeaudhuij I, Brug J. (2015) Family sociodemographic characteristics as correlates of children's breakfast habits and weight status in eight European countries. The ENERGY (European Energy balance Research to prevent excessive weight Gain among Youth) project. *Public Health Nutr.* 18(5):774-783.
- Meulenijzer E, Vyncke K, Labayen I, Meirhaeghe A, Béghin L, Breidenassel C, España-Romero V, Manios U, Ferrari M, Moreno LA, Gottrand F, De Henauw S, González-Gross M, Kafatos A, Widhalm K, Molnár D, Sjöström M, Marcos A, **Androutsos O**, Wärnberg J, Gilbert CC, Huybrechts I. (2015) Associations of early life and sociodemographic factors with menarcheal age in European adolescents. *Eur J Pediatr.* 174(2):271-278.
- Manios Y, **Androutsos O**, Katsarou C, Iotova V, Socha P, Geyer C, Moreno L, Koletzko B, De Bourdeaudhuij I; ToyBox-study group. (2014) Designing and implementing a kindergarten-based, family-involved intervention to prevent obesity in early childhood: the ToyBox-study. *Obes Rev.* 15 Suppl 3:5-13.
- Duvinage K, Ibrügger S, Kreichauf S, Wildgruber A, De Craemer M, De Decker E, **Androutsos O**, Lateva M, Iotova V, Socha P, Zych K, Mouratidou T, Mesana Graffe MI, Manios Y, Koletzko B; ToyBox-study group. (2014) Developing the intervention material to increase physical activity levels of European preschool children: the ToyBox-study. *Obes Rev.* 15 Suppl 3:27-39.
- Payr A, Birnbaum J, Wildgruber A, Kreichauf S, **Androutsos O**, Lateva M, De Decker E, De Craemer M, Iotova V, Manios Y, Koletzko B; ToyBox-study group. (2014) Concepts and strategies on how to train and motivate teachers to implement a kindergarten-based, family-involved intervention



to prevent obesity in early childhood. The ToyBox-study. *Obes Rev.* 15 Suppl 3:40-47.

- **Androutsos O**, Katsarou C, Payr A, Birnbaum J, Geyer C, Wildgruber A, Kreichauf S, Lateva M, De Decker E, De Craemer M, Socha P, Moreno L, Iotova V, Koletzko BV, Manios Y; ToyBox-study group. (2014) Designing and implementing teachers' training sessions in a kindergarten-based, family-involved intervention to prevent obesity in early childhood. The ToyBox-study. *Obes Rev.* 15 Suppl 3:48-52.
- Mouratidou T, Miguel ML, **Androutsos O**, Manios Y, De Bourdeaudhuij I, Cardon G, Kulaga Z, Socha P, Galcheva S, Iotova V, Payr A, Koletzko B, Moreno LA; ToyBox-study group. (2014) Tools, harmonization and standardization procedures of the impact and outcome evaluation indices obtained during a kindergarten-based, family-involved intervention to prevent obesity in early childhood: the ToyBox-study. *Obes Rev.* 15 Suppl 3:53-60.
- González-Gil EM, Mouratidou T, Cardon G, **Androutsos O**, De Bourdeaudhuij I, Gózdź M, Usheva N, Birnbaum J, Manios Y, Moreno LA; ToyBox-study group. (2014) Reliability of primary caregivers reports on lifestyle behaviours of European pre-school children: the ToyBox-study. *Obes Rev.* 15 Suppl 3:61-66.
- De Miguel-Etayo P, Mesana MI, Cardon G, De Bourdeaudhuij I, Gózdź M, Socha P, Lateva M, Iotova V, Koletzko BV, Duvinage K, **Androutsos O**, Manios Y, Moreno LA; ToyBox-study group. (2014) Reliability of anthropometric measurements in European preschool children: the ToyBox-study. *Obes Rev.* 15 Suppl 3:67-73.
- **Androutsos O**, Apostolidou E, Iotova V, Socha P, Birnbaum J, Moreno L, De Bourdeaudhuij I, Koletzko B, Manios Y; ToyBox-study group. (2014) Process evaluation design and tools used in a kindergarten-based, family-involved intervention to prevent obesity in early childhood. The ToyBox-study. *Obes Rev.* 15 Suppl 3:74-80.
- Pil L, Putman K, Cardon G, De Bourdeaudhuij I, Manios Y, **Androutsos O**, Lateva M, Iotova V, Zych K, Gózdź M, González-Gil EM, De Miguel-Etayo P, Geyer C, Birnbaum J, Annemans L; ToyBox-study group. (2014) Establishing a method to estimate the cost-effectiveness of a kindergarten-based, family-involved intervention to prevent obesity in early childhood. The ToyBox-study. *Obes Rev.* 15 Suppl 3:81-89.
- **Androutsos O**, Gerasimidis K, Karanikolou A, Reilly JJ, Edwards CA. (2015) Impact of eating and drinking on body composition measurements by bioelectrical impedance. *J Hum Nutr Diet.* 28(2):165-171.
- Ferrari M, Cuenca-García M, Valtueña J, Moreno LA, Censi L, González-Gross M, **Androutsos O**, Gilbert CC, Huybrechts I, Dallongeville J, Sjöström M, Molnar D, De Henauw S, Gómez-Martínez S, de Moraes AC, Kafatos A, Widhalm K, Leclercq C. (2015) Inflammation profile in overweight/obese



adolescents in Europe: an analysis in relation to iron status. *Eur J Clin Nutr.* 69(2):247-255.

- Pérez de Heredia F, Garaulet M, Gómez-Martínez S, Díaz LE, Wärnberg J, **Androutsos O**, Michels N, Breidenassel C, Cuenca-García M, Huybrechts I, Gottrand F, Ferrari M, Santaliestra-Pasías AM, Kafatos A, Molnár D, Sjöström M, Widhalm K, Moreno LA, Marcos A; HELENA Study Group. (2014) Self-reported sleep duration, white blood cell counts and cytokine profiles in European adolescents: the HELENA study. *Sleep Med.* 15(10):1251-1258.
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- Balafouti T, Svolos V, Argyropoulou M, Roussos R, Strongylou DE, Mavrogianni C, Halilagic A, Koukouli S, Moschonis G, Manios Y, **Androutsos O**, Mouratidou T. Barriers and Facilitators to Increased Parental, Caregiver, and Community Engagement in Obesity Prevention Targeting Vulnerable Children: A Qualitative Study in Greece. *Healthcare (Basel)*. 2026 Feb 28;14(5):620. doi: 10.3390/healthcare14050620.
- Pardali EC, Kontouli KM, Gkouvi A, Samara M, **Androutsos O**, Katsiari CG, Goulis DG, Bogdanos DP, Grammatikopoulou MG. Systemic lupus erythematosus is associated with an increased risk for orthorexia nervosa: a cross-sectional study. *Rheumatol Int*. 2026 Apr 1;46(4):70. doi: 10.1007/s00296-026-06107-2.

Number of Citations (Google Scholar) / h-index: 9523/ 50

## CURRICULUM VITAE 4.

**School:** Department of Nutrition & Dietetics, School of Health Sciences & Education, Harokopio University

### Personal Information:

First Name: Giannis  
Last Name: Arnaoutis  
E-mail: [garn@hua.gr](mailto:garn@hua.gr)

### Academic Qualifications:

1. Bachelor of Science (B.Sc.) in Sports Sciences, Department of Physical Education & Sports Sciences, Democritus University of Thrace, Greece, 2004.
2. Master of Medical Science (M. Med. Sc.) in Applied Nutrition & Dietetics, sub-direction: Nutrition and Exercise, School of Health Science & Education, Department of Nutrition and Dietetics, Harokopio University, Athens, Greece, 2006.
3. Doctor of Philosophy (Ph.D.) in Applied Nutrition & Dietetics, School of Health Science & Education, Department of Nutrition and Dietetics, Harokopio University, Athens, Greece, 2012.
4. Post Doc in Applied Nutrition & Dietetics, School of Health Science & Education, Department of Nutrition and Dietetics, Harokopio University, Athens, Greece, 2018

### Teaching Experience:

2012 – onwards: Graduate (lessons: Nutrition and exercise & nutrition for elite athletes) & Post-Graduate Program in Nutrition & Dietetics (lessons: Sports physiology, Ergometry testing, Sports nutrition, Nutrition for elite athletes), Department of Nutrition and Dietetics, Harokopio University, Athens, Greece.

2018 – onwards: Post-Graduate Program in Exercise & Health, Medical School of Athens, Greece.

### Professional Experience / Activities:

**2025-2026:** Scientific Associate, Hellenic Swimming Federation – Preparation for the European Swimming Championships.

**2019-2024:** Director of the Nutrition & Ergometric Center of Bioiatriki.

**2018-onwards:** Sports nutritionist of elite athletes, including Olympians, contributing to medal-winning performances.

**Research Activity:**

1. Hydration Status and Health
2. Hydration Status and Athletic Performance
3. Ergogenic supplements and Athletic Performance
4. Exercise and oxidative stress
5. Exercise and health

**Scientific Publications:** 46

**Number of Citations (Google Scholar) / h-index:** 1861 / 21

## CURRICULUM VITAE 5.

### School:

Honorary Fellow, University of Exeter Medical School, Public Health and Sport Sciences  
 External Advisor, University of Illinois, Personalized Nutrition Initiative  
 Affiliate Researcher, VU Amsterdam, Environmental Economics Group, Institute of Environmental Studies

### Personal Information:

First Name: Sophie  
 Last Name: Attwood  
 E-mail: sophie@sophieattwood.co.uk

### Academic Qualifications:

PhD, Centre for Diet and Activity Research, Medical Research Council, University of Cambridge  
 MPhil Public Health, Institute of Public Health and Primary Care, University of Cambridge  
 MSc Nutrition, Physical Activity and Public Health, University of Bristol  
 BSc Psychology, University of Leeds

### Teaching Experience:

Visiting Lecturer  
 University of Exeter Medical School, Public Health and Sport Sciences  
 University of Illinois, Personalized Nutrition Initiative  
 VU Amsterdam, Environmental Economics Group, Institute of Environmental Studies

### Teaching Areas:

Behavioural Science  
 Public Health Intervention  
 Health Psychology  
 Physical Activity Promotion  
 Dietary Change Interventions

### Supervision:

1 PhD Student

1 PhD Advisor

### Professional Experience / Activities:

Founder and Director, Behavior Global, Independent Consultancy  
 Senior Behavioral Scientist, World Resources Institute, Diet Team  
 Behavioral Science Research Fellow, Nuffield Health  
 Health Psychologist, Atlantis Healthcare  
 Research Associate, Kings College London

### Research Activity:

Sustainable Dietary Change  
 Real World Interventions  
 Digital Behaviour Change Interventions  
 Intervention Equity  
 Wellbeing Measurement  
 Physical Activity Promotion



Health Risk Communication  
Behaviour Change

**Methodologies:**

Randomised Controlled Trials (RCTs)  
Real World Interventions  
Online Randomised Trials  
Qualitative and Mixed Methods Research  
Implementation Research

**Principal Investigator funding:**

**Key funded projects:**

United Nations Environment Programme (UNEP) and the US Environmental Protection Agency (EPA). 'Addressing unique drivers of United States Household Food Waste'. \$135k. Awarded April 2023.

Meta Data for Good collaboration. "Leveraging social norms messages to reduce household food waste in the UK and Germany". £40k. Awarded March 2021.

Climate and Land Use Alliance. Research Grant. 'How to curtail growth of beef consumption in Asia using behavioural science'. £230k. Awarded November 2020.

ESRC Research Grant. "Using consumption and reward simulations to create desire for plant-based foods". £25k. Awarded May 2020.

Walmart Foundation Program Grant. "Reducing household food waste using behavioural science". \$300k. Awarded January 2020.

Sports England National Lottery Grant Funding. "Tackling inactivity and Economic Disadvantage". £25k. Awarded September 2017.

**Scientific Publications:**

**Publications:** <https://www.behaviorglobal.com/publications>

**Media:** <https://www.behaviorglobal.com/media>

Peer-reviewed journal articles: 13

Book chapters: 2

Policy/impact reports: 15

Media articles: 24

**Number of Citations (Google Scholar) / h-index:**

**Citations:** 1420

**h-index:** 17

**i10-index:** 20

**Awards and Recognition**

Chartered Health Psychologist, British Psychological Society

## CURRICULUM VITAE 6.

**School:** Department of Informatics and Telematics, School of Digital Technology, Harokopio University

### Personal Information:

First Name: Christos  
Last Name: Diou  
E-mail: cdiou@hua.gr

### Academic Qualifications:

1. PhD in Electrical and Computer Engineering, Aristotle University of Thessaloniki (2010)
2. Diploma in Electrical and Computer Engineering, Aristotle University of Thessaloniki (2004)

### Teaching Experience:

Harokopio University of Athens, 2020-2025:

- Machine Learning and Applications (undergraduate)
- Artificial Intelligence (undergraduate)
- Health and Communication Technologies (undergraduate and postgraduate). Module jointly taught with Rutgers University
- Programming I (undergraduate)
- Artificial Intelligence and Applications on the Internet of Things (postgraduate)
- Artificial Intelligence and Deep Learning in Healthcare (postgraduate)
- Data Management II (postgraduate - Applied Informatics)
- Machine Learning (postgraduate - MPhil in Computer Science)

#### Previous teaching experience:

I have designed and taught the following courses at the Electrical and Computer Engineering

Department, Aristotle University of Thessaloniki, Greece:

2018-2019 Internet of Things and Applications (postgraduate, independent teaching of 40% of the course)

2018-2019 Machine learning (postgraduate, independent teaching of the entire course)

2017-2018 Multimedia Systems (undergraduate, independent teaching of the entire course)

2016-2017 Human-Computer Interaction (postgraduate, independent teaching of the entire course)

2016-2017 Multimedia Systems and Graphics (postgraduate, independent teaching of the entire course)

2005-2009 Algorithm design and analysis (undergraduate, teaching assistant)

|                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2005-2007 Computer systems (undergraduate, teaching assistant)<br/> <b>Professional Experience / Activities:</b></p> | <p>2024-today Associate Professor:<br/> Department of Informatics and Telematics, Harokopio University of Athens, Greece</p> <p>2024-today Affiliated Researcher:<br/> ARCHIMEDES AI Unit, Athena Research Center, Greece</p> <p>2020-2024 Assistant Professor:<br/> Department of Informatics and Telematics, Harokopio University of Athens, Greece</p> <p>2013-2020 Research fellow and adjunct professor:<br/> Multimedia Understanding Group, Information Processing Lab, Electrical and Computer Engineering Department, Aristotle University of Thessaloniki, Greece</p> <p>2011-2013 Postdoctoral researcher:<br/> Information Technologies Institute, Centre for Research and Technology Hellas, Greece</p> <p>2005-2011 Research associate:<br/> Multimedia Understanding Group, Information Processing Lab, Electrical and Computer Engineering Department, Aristotle University of Thessaloniki, Greece</p> |
| <p><b>Research Activity:</b></p>                                                                                        | <p>Research interests include Artificial Intelligence, Machine Learning, Explainable AI, Causal Machine Learning, Domain Generalisation, Digital Health, Wearable Technologies, Behaviour Monitoring and AI applications in Healthcare. Principal Investigator and Work Package Leader in several Horizon Europe, Horizon 2020 and FP7 projects.</p> <p><b>Scientific Publications:</b><br/> Author of more than 100 scientific publications in international peer-reviewed journals and conference proceedings in Artificial Intelligence, Machine Learning, Multimedia Analysis and Digital Health.</p> <p><b>Number of Citations (Google Scholar) / h-index:</b> 1134/18</p>                                                                                                                                                                                                                                         |

## CURRICULUM VITAE 7.

**School:** Department of Nutrition and Dietetics, School of Health Science and Education, Harokopio University

**Personal Information:**

First Name: Andriana

Last Name: Kaliora

E-mail: akaliora@hua.gr

**Academic Qualifications:**

- Ph.D. (2003)-Food Chemistry, Biochemistry & Physicochemistry Laboratory of Foods, Department of Nutrition and Dietetics, Harokopio University of Athens.
- Thesis: "Study of the biological behavior of natural products and their derivatives regarding their ability to modify LDL in vitro. A nutritional approach."
- Supervisor: Prof. Nikolaos Andrikopoulos
- B.Sc. (1999)- Nutritional Science and Dietetics, Harokopio University of Athens, Greece
- Language Proficiency: English-Excellent (Cambridge Certificate of Proficiency in English)

**Teaching Experience:****Undergraduate Program (Harokopio University, Department of Nutrition & Dietetics)**

- Nutrition through the life cycle (2009-present, full course and lab, also taught in English via Erasmus)
- Food physical chemistry laboratory (2010-present)
- Food chemistry laboratory (2022-present)
- Internship (2023-present)
- Foods (2022-present)

**Postgraduate Program: "Applied Dietetics and Nutrition" (Harokopio University)**

- Principles of nutrition (2017–present)
- Functional foods (2015–2018)
- Innovative foods (2009–2016)
- Foods of the Mediterranean (2017–2018)
- Supervision Record: 45 B.Sc. theses, 50 M.Sc. theses, 7 Ph.D. dissertations, 3 Post Doctoral fellows.

**Professional Experience / Activities:**

- Professor, Department of Nutrition and Dietetics, Harokopio University of Athens (2008 to present - Lecturer, Assistant, Associate)
- Research focus: Dietary interventions, bioactive microconstituents of foods (polyphenols, terpenes, other phytochemicals), Mediterranean diet, metabolic

syndrome, IBD, MASLD, osteoarthritis, nutraceuticals).

• Principal Investigator / Scientific Coordinator in multiple nationally and EU funded projects such as:

-MAST4HEALTH (Horizon 2020, MSCA RISE)

-AdvanceCarob (ELIDEK Basic Research, 2023-25)

-Development of Next Generation Dietary Supplements (EPANEK 2014-20)

-Nutritional Intervention Trials on Mastiha and Carob Bioactivity

Total managed funding: €500.000+

#### **Editorial Roles:**

- Topical Advisory Panel Member, Nutrients (MDPI)
- Editorial Board Member: Pharmacological Research, Pharmacological Research–MCM, Dietetics, Foods
- Guest Editor of Special Issues in Nutrients, Frontiers in Nutrition, Foods
- Reviewer for International Journals (indicative): Atherosclerosis, Pharmacological Research, Food Chemistry, Nutrients, Molecular Nutrition & Food Research, Phytomedicine, European Journal of Nutrition.

#### **Evaluator of Scientific Proposals:**

- National Science Centre (NCN, Poland).
- Greek National Textbook Initiative Kallipos+ / Medical & Health Sciences section.

#### **Research Activity:**

#### **Domains of Interest**

- Nutritional modulation of inflammation and oxidative stress
- Effects of non-nutrient phytochemicals on chronic diseases
- Postprandial metabolism and metabolic homeostasis
- Nutrigenomics and nutrigenetics (gene-diet interactions)
- Sustainable functional food
- Valorization of food industry by products for health and environmental benefit

#### **Selected Projects (Scientific PI):**

- Functional properties of Corinthian raisin components - SKOS Cooperative (2011-2014)
- Chios Mastiha bioavailability and efficacy in IBD -Chios Mastiha Producers Association (2015-2018)
- Innovative dietary supplements for osteoarthritis – EPANEK 2014–2020
- Mastiha oil and metabolic syndrome – Chios Research Center (2019–2023)
- AdvanceCarob – HFRI Basic Research 2023- (Carob and metabolic health)

#### **Scientific Publications:**

As of April 2026 (Scopus ID 6508114138):

- Peer reviewed publications: 112
- Book chapters: 12
- Conference presentations: >100
- Citations (Scopus): 3,653
- h index (Scopus): 33

#### **Number of Citations (Google Scholar) / h-index:**

5192/39



## CURRICULUM VITAE 8.

**School:** Department of Nutrition and Dietetics, School of Health Sciences and Education, Harokopio University

### Personal Information:

**First Name:** Ioannis

**Last Name:** Manios

Professor, Department of Nutrition and Dietetics

Harokopio University of Athens

Address: 70 El. Venizelou Ave., 17676 Kallithea, Athens, Greece

Tel: +30 210 9549156

Email: manios@hua.gr

### Academic Qualifications:

- Postdoctoral Research — Medical School, University of Crete (1998–1999)
- PhD — Preventive Medicine and Nutrition, Medical School, University of Crete (1994–1998)
- M.Phil. in Human Nutrition — University of Sheffield, UK (1992–1994)
- M.Med.Sc. in Sports Medicine — University of Sheffield, UK (1989–1990)
- BSc — Physical Education & Sports Science, Democritus University of Thrace (1985–1989)

### Teaching Experience:

#### Undergraduate Teaching

- Harokopio University of Athens (2001–present)

Courses:

Nutritional Assessment

Nutrition Education & Health Promotion

#### Postgraduate Teaching

- Harokopio University of Athens — MSc Applied Dietetics & Nutrition (2008–present)
- European University Cyprus (2014–2021)
- National and Kapodistrian University of Athens — Health Promotion (2005–2013)
- Agricultural University of Athens (2005–2011)
- Graz University — ERASMUS Intensive Programme (TOOLTIPS) (2009–2012)

### Professional Experience / Activities:

- Professor, Department of Nutrition & Dietetics, Harokopio University (2017–present)
- Associate Professor (2013–2017)
- Assistant Professor (2007–2013)
- Lecturer (2001–2007)
- Teaching staff, Technological Educational Institute of Crete (1998–2000)

### Research Activity:

More than 20 years of research experience in:

- Public health nutrition
- Childhood obesity prevention



- Nutritional epidemiology
- School- and community-based interventions
- Clinical trials combining behavioral and nutritional approaches

Extensive participation and coordination in European, national, and industry-funded projects:

Key EU Projects:

- HELENA
- ENERGY
- ToyBox
- HabEat
- Full4Health
- Food4Me
- ODIN
- Feel4Diabetes
- SWEET
- GATEKEEPER
- DigiCare4You
- PLANEAT
- MELIORA
- Zero\_HiddenHunger\_EU

Industry & National Projects:

- Healthy Growth Study
- GENESIS Study
- CALCIPLUS Trials
- UNICEF Childhood Obesity Initiative

**Scientific Publications:**

- 668+ peer-reviewed publications
- 51,860+ citations
- h-index: 81
- Author of 7 academic books and multiple book chapters
- 11 scientific awards

**Number of Citations (Google Scholar) / h-index: >51,860/81**

## CURRICULUM VITAE 9.

**School:** Department of Nutrition and Dietetics, School of Health Sciences and Education, Harokopio University

### Personal Information:

First Name: Antonia  
Last Name: Matalas  
E-mail: amatala@hua.gr

### Academic Qualifications:

Ph.D. in Nutrition, Department of Nutrition University of California, Davis CA 1993  
B.Sc. in Chemistry, Department of Chemistry Aristotelion University of Thessaloniki, Greece 1985

### Teaching Experience:

Professor (2015-present) / Associate Professor (2008-2015) / Assistant Professor (1999-2008), Department of Nutrition and Dietetics, Harokopio University, Athens, Greece

Associate Lecturer In the Department of Nutrition, University of California Davis (1991-1992)

Has supervised 12 Ph.D. and 26 Masters theses.

### Professional Experience / Activities:

Cyprus Food Virtual Museum, partner in the development team, 2011-present  
Professor - Global Environmental Policy, CIEE Athens, 2026  
Edited two scientific volumes on issues that relate to health and anthropological perspectives of the Mediterranean Diet

### Research Activity:

Development of a methodology for systematically describing traditional Greek diet and its cultural connotations  
European Network for the Promotion of Fermented Foods PIMENTO, Partner (<https://fermentedfoods.eu/>).  
EFSA (European Food Safety Authority) «Update of the EFSA Comprehensive Food Consumption Database Project» (2013-2015), Partner  
Nutritional and social aspects of breastfeeding and their policy implications in Greece

**Scientific Publications (Selected out of 121:**

Matalas, A., Panagiotakos, D., Fardet, A., Savary-Auzeloux, I., et al. (2026). Fermented foods consumption, all-cause, and cause-specific mortality: a meta-analysis of prospective cohort studies. *Frontiers Nutrition*, 1, 1714437. doi: 10.3389/fnut.2026.1714437

Ntantou, A. Lazaridis, G., Matalas, A. (2026). Development of a unifying tool for the substantiation of traditional food products, *International Journal of Gastronomy and Food Science*, 44, 101500

Matalas, AL. & Lazaridis, G. (2024). Street Food in Greece through the Eyes of Foreign Visitors, *Food, Culture and Society* <https://doi.org/10.1080/15528014.2023.2287292>

Tzoutzou, M., Bathrellou, E. & Matalas, A. (2022). Food content in children's animated programmes: A review. *Public Health and Toxicology*, 114. <https://doi.org/10.18332/pht/149636>

Tzoutzou, M., Bathrellou, E., & Matalas, A.L. Food consumption and related messages in animated comic series addressed to children and adolescents (2019) *Public Health Nutrition*, 22 (8), pp. 1367-1375.

Tourlouki, E., Matalas, AL, Bountziouka, V. et al. (2012). Are current dietary habits in Mediterranean islands a reflection of the past? Results from the MEDIS Study. *Ecology of Food and Nutrition* 2013 52,1-16.

Antonakou, A., Chiou, A., Anastasiou, C., Bakoula, C. & Matalas AL. (2013). Breast milk fat concentration and fatty acid pattern during the first six months in exclusively breastfeeding Greek women. *Eur Journal of Nutrition* 52, 963-971.

Lazarou, C, Panagiotakos, DB. & Matalas AL. (2010). Physical activity mediates the protective effect of the Mediterranean diet on children's obesity status: The CYKIDS study. *Nutrition*, 26, 61.

Lazarou, C., Panagiotakos, DB., Sidossis, L. & Matalas, A. L. (2007). Diet composition in preadolescent Cypriot children in relation to their dietary beliefs it behaviours-A multivariate analysis. In *ANNALS of Nutrition and Metabolism*, 51, 101-111.

**Number of Citations (Google Scholar) / h-index:** 4770/38

## CURRICULUM VITAE 10.

**School:** School of Education, Faculty of Humanities and Social Sciences, University of Exeter

### Personal Information:

First Name: Darren

Last Name: Moore

E-mail: D.Moore@exeter.ac.uk

### Academic Qualifications:

Doctor of Philosophy (Education). Hard to reach? Young people's experiences and understandings of the post-16 transition. University of Exeter (2012).

Diploma for Teaching in the Lifelong Learning Sector. Petroc (2009).

Executive Diploma in Management. Petroc (2008).

MSc. Educational Research (Distinction). University of Exeter (2007).

BSc. (Hons) Psychology (1st). University of Surrey (2005).

### Teaching Experience:

Associate Professor in Education and Psychology, University of Exeter (full-time, 2024-)

Senior Lecturer in Education, University of Exeter (full-time, 2020-)

Lecturer in Education, University of Exeter (full-time, 2017-)

Associate Lecturer in Education, University of Exeter (0.2fte 2015-2017)

### Teaching Areas:

Children and Young People's Mental Health

Educational Psychology

Research Methods

Special Educational Needs and Disability

### Supervision:

4 Postdoctoral researchers

15 PhD students (12 primary supervisor)

### Professional Experience / Activities:

### Research Activity:

co-lead the School of Education Wellbeing, Inclusion and Disability in Education Research Centre  
school mental health and wellbeing

school climate.

implementation science applied to schools

school-based interventions for ADHD

school attendance

### Methodologies:

Systematic Reviews

Intervention impact and process evaluation

Interview studies

### Principal Investigator funding:

1. **Understanding school and classroom climate – evidence review.** [External: Education Endowment Foundation] Principal Investigator and Project Coordinator £178,000 (2025-2027).
2. **Implementation for schools – Sharing evidence-informed best practice with schools and educators.** [Internal: ESRC Impact Acceleration] Principal Investigator £23,187 (2024-2025).
3. **Review of evidence on implementation in education.** [External: Education Endowment Foundation] Principal Investigator and Project Coordinator £174,471 (2021-2023).
5. **Review of evidence on behaviour.** [External: Education Endowment Foundation] Principal Investigator and Project Coordinator £31,215 (2018-2019).

#### **Key funded projects:**

METIUS: Transforming global evidence: AI-driven evidence synthesis for policymaking. [External: ESRC] Collaborator £11,500,000 (2025-2030).

Mental health leadership, provision and practice in schools. [Internal: ESRC Impact Acceleration] Co-Investigator £19,989 (2018-2019).

Improving the experience of care for people with dementia in hospital. [External: NIHR HS&DR Programme] Co-Investigator £323,022 (2017-2018).

#### **Scientific Publications:**

Google Scholar list:

<https://scholar.google.com/citations?user=bf05UwcAAAAJ&hl=en>

ORCID list:

<https://orcid.org/0000-0003-0628-3323>

Books: 2

Peer-reviewed journal articles: 52

Book chapters: 4

Policy/impact reports: 5

Conference presentations: 12

#### **Number of Citations (Google Scholar) / h-index:**

**Citations: 3148**

**h-index: 30**

**i10-index: 45**

#### **Awards and Recognition**

Shortlisted for BERJ Editors' Choice Award 2023

Award: Child and Adolescent Mental Health Journal Best Paper 2020

## CURRICULUM VITAE 11.

**School:** Department of Nutrition and Dietetics, School of Health Science & Education, Harokopio University

### Personal Information:

First Name: George

Last Name: Moschonis

E-mail: gmoschonis@hua.gr

### Academic Qualifications:

- Post-doctoral Research Harokopio University, Greece (2013-2017)
- PhD in Nutrition and Dietetics, Harokopio University, Athens, Greece (2013)
- Master of Science in Applied Dietetics and Nutrition (Clinical Nutrition), Harokopio University, Athens, Greece (2006)
- Bachelor of Science in Nutrition and Dietetics, Harokopio University, Athens, Greece (2004)

### Teaching Experience:

- Coordinator of the Honours in Human Nutrition Program at La Trobe University since 2017, including course and subject coordination of the Honours in Human Nutrition and Major of Food and Nutrition programs.
- Subject coordinator and lecturer for undergraduate and postgraduate subjects in nutrition, nutritional epidemiology, research methods, and public health nutrition at La Trobe University.
- Teaching Associate at the Master of Science in Applied Nutrition, European University Cyprus, Nicosia, Cyprus (2015–2017).
- Supervision of Honours, Master's, and PhD students in the fields of nutrition, dietetics, obesity prevention, and public health nutrition.
- Graduate Research Coordinator, Department of Dietetics, Human Nutrition and Sport, La Trobe University (2017–2019), providing academic guidance and mentorship to higher degree research students.
- Recipient of multiple outstanding student feedback scores (average SFS score: 4.47/5) for teaching performance and curriculum leadership.
- More than 5,000 hours of undergraduate and postgraduate teaching experience across Australia, Greece, and Cyprus.

### Professional Experience / Activities:

- Associate Professor in Community Nutrition, Department of Nutrition and Dietetics, Harokopio University, Athens, Greece (2026–present).
- Professor in Human Nutrition and Dietetics, La Trobe University, Melbourne, Australia (2022–2025).
- Associate Professor in Human Nutrition and Dietetics, La Trobe University, Melbourne, Australia (2018–2021)
- Senior Lecturer in Human Nutrition and Dietetics, La Trobe University, Melbourne, Australia (2017–2018).
- Head of the Department of Nutrition and Dietetics, La Trobe University, Melbourne, Australia (2018–2019)
- Member of the Academic Board, La Trobe University, Melbourne, Australia (2022–2025)
- Member of the Research Committee, School of Allied Health, Human Services and Sport, La Trobe University, Melbourne, Australia (2019–2025)
- Graduate Research Coordinator, Department of Nutrition and Dietetics, La Trobe University, Melbourne, Australia (2017–2019)
- Accredited Practicing Dietitian (APD), Dietitians Association of Australia (2017-2022).
- Expert evaluator and reviewer of grant applications for National Health and Medical Research Council (Australia), Auckland Medical Research Foundation (New Zealand), Netherlands Organisation for Scientific Research (NWO), Hong Kong Polytechnic University and European Commission.

- Director of a private dietetic practice in Greece (2009-2017).

### Research Activity:

- Research expertise in community nutrition, paediatric nutrition, obesity, diabetes and non-communicable disease (NCD) prevention and management, dietary interventions, functional foods, dietary supplements, gut health, nutritional epidemiology, and digital health interventions.
- Internationally recognised researcher in the design, implementation, and evaluation of scalable, personalised nutrition and lifestyle interventions targeting obesity and chronic disease prevention across the lifespan.
- Principal Investigator and coordinator of multiple nationally and internationally funded research projects, including:
  - DigiCare4You (NHMRC–EU Collaborative Grant)
  - Defeat Diabetes Study
  - Probone21 Study



- Biome Lift Study
- OLIVAUS Study
- PN4Growth Study

- Investigator and collaborator in major European Commission (FP6, FP7, Horizon2020) funded multicenter projects, including:

- Feel4Diabetes
- ToyBox
- Food4Me
- Full4Health
- HELENA
- HabEat
- ENERGY
- ODiN
- Early Nutrition

- Extensive experience in leading multicentre intervention studies, randomised controlled trials, digital health programs, and translational nutrition research in collaboration with international academic institutions, health organisations, and industry partners.
- Total competitive research funding as Principal Investigator exceeds AUD 1.28 million at La Trobe University, in addition to substantial European Commission and Greek national funding contributions.
- Author/co-author of more than 300 peer-reviewed scientific publications, with research published in leading international peer-reviewed journals including The Lancet, American Journal of Clinical Nutrition, Public Health Nutrition, European Journal of Nutrition, Nutrients, British Journal of Nutrition etc.
- Ranked among the top 3% most-cited researchers worldwide in Nutrition and Dietetics (AD Scientific Index 2024), with an h-index of 66 and more than 43,900 citations on Google Scholar.
- Recipient of the 2024 Research Excellence Award on Research Impact at La Trobe University.

#### Scientific Publications:

- Author/co-author of 278 peer-reviewed scientific publications in international journals.
- Research published in high-impact journals in nutrition, obesity, diabetes, and public health.
- Extensive presentations in international scientific conferences and invited lectures.
- Editorial leadership roles including Section Editor-in-Chief in Nutrients ("Nutrition Methodology & Assessment").

#### Number of Citations (Google Scholar) / h-index:

- Google Scholar citations: 43,900+
- Google Scholar h-index: 75

- Scopus citations: 33,700+
- Scopus h-index: 52

## CURRICULUM VITAE 12.

**School:** Department of Nutrition and Dietetics, School of Health Sciences and Education, Harokopio University of Athens

### Personal Information:

First Name: Tzortzis

Last Name: Nomikos

E-mail: [tnomikos@hua.gr](mailto:tnomikos@hua.gr)

### Academic Qualifications:

PhD in Biochemistry, Department of Chemistry, National and Kapodistrian University of Athens, 2002

M.Sc. in Biochemistry, Department of Chemistry, National and Kapodistrian University of Athens, 1997

BSc, Department of Chemistry, National and Kapodistrian University of Athens, 1995

### Teaching Experience:

#### Undergraduate level

Organic Chemistry, Department of Nutrition and Dietetics (since 2005)

Biochemistry I, Department of Nutrition and Dietetics (since 2005)

Biochemistry II, Department of Nutrition and Dietetics (since 2005)

#### Postgraduate level

Advanced Topics in Biochemistry, Department of Nutrition and Dietetics (since 2005)

Advanced Topics in Biochemistry and Metabolism, Department of Nutrition and Dietetics (since 2005)

Nutrition and Signal Transduction Pathways, Department of Nutrition and Dietetics (since 2018)

Guest lecturer for the courses Exercise Biochemistry and Metabolism, Metabolomics, Nutrition and Exercise for Body Weight Management, Department of Nutrition and Dietetics (since 2015)

Guest lecturer for Postgraduate Programme Cardiovascular Disease, Aristotelian University of Thessaloniki, Greece (since 2023)

**Professional Experience / Activities:**

2005 – 2009: Lecturer in Biochemistry, Department of Nutrition and Dietetics, Harokopio University, Athens, Greece  
2009 – 2020: Assistant Professor in Biochemistry, Department of Nutrition and Dietetics, Harokopio University, Athens, Greece  
2020 - today: Associate Professor in Biochemistry, Department of Nutrition and Dietetics, Harokopio University, Athens, Greece

Member of the editorial board of 6 international journals.

Member of the Executive Committee of the Hellenic Atherosclerosis Society (Treasurer)

Associate Dean of the School of Health Sciences and Education, Harokopio University of Athens.

**Research Activity:**

My research interests focus on the relationship between nutrition and cardiovascular disease with emphasis on the metabolism and actions of Platelet Activating Factor, the relationship between postprandial dysmetabolism and platelet activation and on the assessment of anti-thrombotic and anti-inflammatory action of phytochemicals characterizing the Mediterranean Diet. I have a long experience in working with both cell cultures and animal models and conducting interventional studies in the field of human nutrition.

**Scientific Publications:**

(selected)

Arnaoutis G, Vallas G, Toubekis AG, Nomikos T. Acute Beetroot Juice Supplementation and Repeated Maximal Effort in Elite Swimmers: A Randomized Double-Blind Study. *Int J Sport Nutr Exerc Metab.* 2026 Apr 22;1-10. doi: 10.1123/ijsnem.2026-0014. Epub ahead of print. PMID: 42019929.

Krokidas A, Gakis AG, Aktypi O, Antonopoulou S, Nomikos T. Effect of Spirulina Nigrita® Supplementation on Indices of Exercise-Induced Muscle Damage after Eccentric Protocol of Upper Limbs in Apparently Healthy Volunteers. *Nutrients.* 2024 May 28;16(11):1651. doi: 10.3390/nu16111651. PMID: 38892584; PMCID: PMC11174877.

Katsa ME, Ketselidi K, Kalliostra M, Ioannidis A, Rojas Gil AP, Diamantakos P, Melliou E, Magiatis P, Nomikos T. Acute Antiplatelet Effects of an Oleocanthal-Rich Olive Oil in Type II Diabetic Patients: A Postprandial Study. *Int J Mol Sci.* 2024 Jan 11;25(2):908. doi: 10.3390/ijms25020908. PMID: 38255980; PMCID: PMC10815739.

Katsa ME, Kostopoulou E, Nomikos T, Ioannidis A, Sarris V, Papadogiannis S, Spiliotis BE, Rojas Gil AP. The Response of Antioxidant Enzymes and Antiapoptotic Markers to an Oral Glucose Tolerance Test (OGTT) in Children and Adolescents with Excess Body Weight. *Int J Mol Sci.* 2023 Nov 20;24(22):16517. doi: 10.3390/ijms242216517. PMID: 38003707; PMCID: PMC10672007.

Katsa ME, Nomikos T. Olive Oil Phenolics and Platelets-From Molecular Mechanisms to Human Studies. Rev Cardiovasc Med. 2022 Jul 19;23(8):255. doi: 10.31083/j.rcm2308255. PMID: 39076644; PMCID: PMC11266954.

Nomikos T, Fragopoulou E, Antonopoulou S, Panagiotakos DB. Mediterranean diet and platelet-activating factor; a systematic review. Clin Biochem. 2018 Sep;60:1-10. doi: 10.1016/j.clinbiochem.2018.08.004. Epub 2018 Aug 22. PMID: 30142319.

**Number of Citations (Google Scholar) / h-index:**

(accessed: 30/4/2026)

4213 / 41 (Google Scholar)

2928 / 33 (Scopus)

## CURRICULUM VITAE 13.

**School:** Department of Nutrition and Dietetics, School of Health Sciences and Education, Harokopio University

### Personal Information:

First Name: Demosthenes

Last Name: Panagiotakos

E-mail: dbpanag@hua.gr

### Academic Qualifications:

2018

Certificate in ICH Good Clinical Practice (E6, R2), The Global Health Network

Certificate in Clinical Research, The Global Health Network

Certificate in Informed Consent for Good Clinical Practice, The Global Health Network

Certificate in Research Question for Good Clinical Practice, The Global Health Network

2014

Certificate in PRINCIPLES OF EPIDEMIOLOGY IN PUBLIC HEALTH PRACTICE, Centres for Disease Control and Prevention (CDC).

Certificate in DATA ANALYSIS AND CAUSAL INFERENCE, University of North Carolina Gillings School of Global Public Health.

Certificate in FOOD CRISIS EXERCISE, European Food Safety Authority (EFSA), Parma, Italy.

2009

Certificate in "Ischemic Heart Disease"

University of Pisa, Department of Cardiology, Pisa, Italy

2008

Certificate in "Implementing CVD prevention in clinical practice: a global public health strategy".

European Society of Cardiology, Nice, France

2006

Certificate in "Atherosclerosis"

EAS Summer School, Hamburg, Germany

2002-2003

post-Doctorate in "Cardiovascular Epidemiology", Veterans Affairs Medical Center, Georgetown University Medical Center, Washington DC, USA

1999-2002

PhD in Medicine (CVD Epidemiology)

School of Medicine, University of Athens, Athens, Greece

1998-2000

MSc in Biostatistics

School of Medicine and Department of Mathematics, University of Athens, Athens, Greece

1998-1999

Certificate in “Epidemiology: Climate Change and Human Health”

London School of Hygiene and Tropical Medicine (LSHTM), University of London, London, UK

1989-1994

MSc/PhD program in Mathematical Statistics

Department of Mathematics, University of Athens, Athens, Greece

1985–1989

BSc in Mathematics

Department of Mathematics, University of Patras, Greece

### Teaching Experience:

2003–today

Professor in Biostatistics & Epidemiology, Department of Nutrition and Dietetics, School of Health Sciences & Education, Harokopio University, Athens, Greece

Courses: Biostatistics I, Biostatistics II, Data Analysis, Research Methods in Nutrition (undergraduate), Biostatistics, Research Methods, Nutrition Epidemiology (graduate).

Supervisor in 25 PhD theses (19 completed).

2017 - today

Adjunct Professor, Faculty of Health, University of Canberra, Canberra, Australia

2017 - 2019

Adjunct Professor, College of Science, Health and Engineering, La Trobe UNIVERSITY, Melbourne, Australia

2016 - 2022

Visiting Distinguished Professor, Department of Kinesiology, Rutgers University, The State University of New Jersey, NJ, USA

2015 – 2025

Senior Research Associate, Research Center on Atherothrombosis, University of Ioannina, Ioannina, Greece – Design and Analysis of Clinical Trials, Epidemiologic Studies

2008–2014

Visiting Professor in Biostatistics & Research Methods, in MSc in Food Science, Agricultural University of Athens, Greece

2008–2015

Visiting Professor in Advanced Biostatistics, in PhD in Dentistry Science, School of Dentistry, University of Athens, Greece

2002-2003

Research Fellow, Cardiology Department, School of Medicine, Georgetown University and Veterans Affairs Medical Center, Washington DC, USA

2001–2015

Visiting Professor in School of Medicine, University of Athens, Greece

(a) MSc in Biostatistics (2001-2015)

(b) MSc Public Health (2006-2010)

(c) MSc in Intensive Care Units (2008-2014)

(d) MSc in Cardiovascular Nursing (2008-2014)

in Multivariate Data Analysis, Biostatistics &amp; Research Methods

1996–1998

Lecturer in Data Analysis &amp; Research Methods, Department of Sports Science, University of Portsmouth, Portsmouth, UK

### Professional Experience / Activities:

2016 – 2026

Member, supreme Scientific Committee on Health, Environmental &amp; Emerging Risks (SCHEER), DG SANTE, EUROPEAN COMMISSION, Luxembourg,

2022 – 2027

Expert, European Court of Auditors | CEI 788 | Luxembourg

2022-2025

Member, Scientific Council of Food Safety Authority, Ministry of Health

2019 – 2022

Member, Executive BoD, National Public Health Organization (EODY / CDC), Ministry of Health, Greece

2016-2022

Member, Scientific Council of National Nutrition Policy, Ministry of Health

2011-2014

Member, National Council Public Health, Ministry of Health (Epidemiology)

2010-2016

Member, Scientific Council of Food Safety Authority, Ministry of Health

2023-2025

Member and Deputy Director, Executive Committee | Graduate Program, MSc in Epidemiology, Hellenic Open University

2016 - 2019

Vice Rector of Financial Affairs, Research &amp; Development, Harokopio University | Chair of the Research Committee, Harokopio University

2022 – 2028

Chair, Bioethics Committee, Harokopio University



2013–2019

Member of the Senate, Harokopio University

2013–2016

Dean, School of Health Science & Education, Harokopio University | Department of Nutrition and Dietetics, Harokopio University

2012–2013

Chair, Department of Nutrition and Dietetics, Harokopio University

2011-2015

Director of the Graduate Program, Applied Nutrition and Dietetics, Harokopio University

### **Research Activity:**

Principal Investigator (PI) in 23 research projects (total grants awarded 2.7M euro)

Co- Principal investigator in 6 research projects

Research associate in 22 projects

### *Interests*

Epidemiology General and Specific: Cardiovascular Disease & Cancer

Healthy Aging

Risk analysis, Risk assessment in Public Health

Evidence Synthesis & Meta-analysis

Biostatistics, Multivariate analysis, Path analysis

Clinical trials design and analysis

Bioethics

### **Scientific Publications:**

1,039 original research articles, meta-analyses and review articles in international peer reviewed journals

80 original research or review articles in national peer reviewed journals or conference proceedings

5 Books (in Greek) | Biostatistics (GUTENBERG Pub., 2007); CVD Epidemiology (KOSTAKIS Ltd, Pub., 2007); Medical Research Methods (DIONIKOS Pub., 3<sup>rd</sup> Edition, 2011); General Epidemiology (DIONIKOS Pub., 2021); Applied Biostatistics, using IBM SPSS and Stata (NEON Pub., 2024)

39 chapters in books (11 in international books)

1,500+ presentations in National and International Conferences

### **Number of Citations (Google Scholar) / h-index:**

66.857 citations (Scopus), 161,737 (Google Scholar)

h-index: 102 (Scopus), 136 (Google Scholar)

## CURRICULUM VITAE 14.

**School:**

- 1) University of Exeter Medical School, Public Health and Sport Sciences, Children's Health and Exercise Research Centre (CHERC)
- 2) University of Edinburgh, Honorary Researcher

**Personal Information:**

First Name: Raquel

Last Name: Revuelta Iniesta

Email: r.revuelta-iniesta@exeter.ac.uk

Professional registrations/memberships: HCPC DT26136; RNut 04425; Nutrition Society 49156; SIOP 24204; Society for Endocrinology 123457; ESPGHAN 1301

**Academic Qualifications:**

PhD in Clinical Nutrition, Paediatric Oncology, Queen Margaret University and University of Edinburgh (2016)

Thesis: The Determinants of Nutritional Risk in Paediatric Cancer

BSc (Hons) Dietetics, Queen Margaret University (2011; 1st Class Honours)

BA (Hons) History of Art, Universidad Autónoma de Madrid / University of Edinburgh (ERASMUS) (2005; 2:1)

**Teaching Experience:**

Senior Lecturer in Nutrition, University of Exeter; Programme Director, BSc Nutrition; Director, MSc Public Health with Nutrition (2023-present)

Lecturer in Nutrition, University of Exeter; Programme Director, BSc Nutrition (2019/2020-2023)  
Programme Leader, MSc Public Health Nutrition and BSc Nutrition (2017-2019)

Lecturer / Part-time Lecturer in Nutrition, Queen Margaret University (2014-2019)

Visiting Lecturer, University of Edinburgh, School of Medicine (2012-2014)

**Teaching Areas:**

Nutrition and dietetics

Public health nutrition

Paediatric, clinical and oncology nutrition

Nutrition, physical activity and health

Professional conduct in nutrition; literature review; evidence synthesis; research methods

**Supervision:**

2 PhD students supervised to completion; 9 PhD students currently supervised/co-supervised

2 research fellows currently supervised; 2 research fellows supervised to completion

External/internal examiner roles for PhD viva and upgrade examinations

**Professional Experience / Activities:**

Honorary Researcher, University of Edinburgh (2015-present)

Member, International Guidelines Harmonization Group - Undernutrition (2026)

Co-Lead, SIOP HIC Nutrition Guideline Development for Children and Young People with Cancer (2024-present)

Member, SIOP Nutrition Network Steering Group (2024-present)

Co-chair, NIHR Nutrition in Children, Teenagers and Young Adults with Cancer (2022-present)

External Examiner, BSc Nutrition, University of Westminster (2024-present)

Public Health and Sport Sciences Ethics Committee Member, University of Exeter (2020-present)

Programme development, validation and accreditation across nutrition, dietetics and public health nutrition

**Research Activity:**

Nutritional screening and assessment in paediatric oncology  
 Malnutrition and body composition in children and young people with cancer  
 Nutrition, diet and physical activity in childhood cancer survivors  
 Micronutrient status, vitamin D and clinical outcomes  
 Gut microbiome, gastrointestinal side effects and cancer-treatment outcomes  
 Nutrition in chronic conditions including cystic fibrosis and autism  
 Public health nutrition, obesity, muscle health and cardiometabolic health

**Methodologies:**

Prospective cohort studies  
 Systematic reviews, scoping reviews and meta-analyses  
 Quality improvement and clinical service evaluation projects  
 Nutrition support, behaviour-change interventions and feasibility studies  
 Randomised controlled and cross-over trials  
 Dietary assessment, anthropometry, body composition and biochemical markers  
 Clinical guideline development and evidence synthesis

**Principal Investigator / Co-Investigator funding:**

Key funded projects/awards: ~£1.16 million + €10,000 listed across PI, Co-I, supervisory and travel awards  
 Yorkshire Cancer Research Healthy Behaviours Service/Programme for children and young people post-cancer treatment (£519,887; Co-I; 2025-2026)  
 Chinese Scholarship: diet and physical activity on cardiovascular health in young childhood cancer survivors (£107,250; PI; 2022)  
 DSTL gut microbiome/performance-related outcomes in military personnel (£99,945; Co-I; 2025-2026)  
 QUICHE mycoprotein dietary intervention (£103,000; Co-I; 2020); EPSRC DTP muscle loss/rehabilitation (£80,000; co-supervisor; 2020)  
 Other awards: CCLG/NIHR paediatric oncology projects (~£49,729), Cancer and Leukaemia Fund (£10,000), SIOP Nutrition Research Forum (€10,000)

**Consultant and collaborator with:**

SIOP Nutrition Network  
 International Guidelines Harmonization Group  
 NIHR Nutrition in Children, Teenagers and Young Adults with Cancer  
 University of Exeter, University of Edinburgh and Queen Margaret University collaborators  
 Paediatric oncology collaborators including Bristol Children's Hospital and Sheffield Children's Hospital  
 Industry/research collaborations including Quorn and DSTL-funded microbiome/performance work

**Scientific Publications:**

Google Scholar list:  
<https://scholar.google.com/citations?hl=en&user=nwSood4AAAAJ>  
 PubMed list:  
<https://pubmed.ncbi.nlm.nih.gov/?term=%22Revuelta+Iniesta%22>

Peer-reviewed journal articles: 30 listed in attached CV

Book chapters: NR

Policy/impact reports: NR

Conference presentations: NR

**Number of Citations (Google Scholar) / h-index:**

Citations: 830

h-index: 13

i10-index: 14

Citations since 2021: 585

h-index since 2021: 13

i10-index since 2021: 14

**Awards and Recognition**

Fellow of the Higher Education Academy (FHEA) - 2021

Registered Dietitian / HCPC registration (DT26136)

Registered Nutritionist (RNut) (04425)

SIOP Nutrition Research Forum funding - 2025

ESPGHAN Paediatric Nutrition Summer School - 2017

Multiple research, travel and development awards from University of Exeter, Society for Endocrinology, Santander and Princess Alice Award

NR = not reported in the attached CV.

## CURRICULUM VITAE 15.

### School:

- 1) University of Exeter Medical School, Public Health and Sport Sciences, Children's Health and Exercise Research Centre (CHERC)
- 2) Harokopio University of Athens, Department of Nutrition and Dietetics, European Centre for Obesity (ECO)

### Personal Information:

First Name: Dimitris

Last Name: Vlachopoulos

E-mail: D.Vlachopoulos@exeter.ac.uk

### Academic Qualifications:

PhD in Sport and Health Sciences, University of Exeter (2017)

Thesis: The impact of different loading sports and a jumping intervention on bone health in adolescent males (PRO-BONE study)

MSc in Paediatric Exercise and Health, University of Exeter (2013)

Qualified Teacher Status (QTS), UK Department for Education (2013)

BSc in Physical Education and Sport Science, Democritus University of Thrace (2010)

### Teaching Experience:

Senior Lecturer, University of Exeter (2020–present)

Lecturer, University of Exeter (2018–2020)

Associate Lecturer & Research Fellow, University of Exeter (2017–2018)

Visiting Associate Professor, Harokopio University (2024–present)

### Teaching Areas:

Paediatric Exercise and Health

Paediatric Human Physiology

Anatomy & Kinanthropometry

Nutrition & Metabolism

Research Methods

Clinical Exercise Prescription

### Supervision:

2 Postdoctoral researchers

14 PhD students (5 primary supervisor)

36 MSc dissertation students

63 BSc dissertation

### Professional Experience / Activities:

### Research Activity:

Child and adolescent health

Physical activity and movement behaviours

Musculoskeletal development and bone health

Body composition and cardiometabolic health

Digital health technologies and AI applications

### Methodologies:

Randomised Controlled Trials (RCTs)  
Longitudinal cohort studies  
Large-scale datasets (ALSPAC, UK Biobank, PANIC, ABCD Growth)

### Principal Investigator funding:

**Key funded projects:** ~€3.5–3.75 million total funding secured

Joint MSc Programme (Greece 2.0)  
Active Healthy Kids Global Alliance Greece  
SEEDS Horizon 2020 project  
PANIC Study (Finland)  
PRO-BONE study (EU Marie Curie)  
Multiple international PhD studentships

Co-Director, Children's Health and Exercise Research Centre (CHERC), University of Exeter  
Visiting Associate Professor, European Centre for Obesity, Department of Nutrition and Dietetics, Harokopio University of Athens  
Lead development of Joint MSc programme (Exeter–Harokopio)

Consultant and collaborator with:

WHO initiatives  
Active Healthy Kids Global Alliance (AHKGA)  
Industry collaborations on:  
Medical imaging technologies  
Digital health tools  
Screening and risk stratification systems

### Scientific Publications:

Google Scholar list:

<https://scholar.google.com/citations?user=uYWT1BcAAAAJ&hl=en>

Pubmed list:

<https://pubmed.ncbi.nlm.nih.gov/?term=vlachopoulos+d&sort=date&size=20>

Peer-reviewed journal articles: 68

Book chapters: 3

Policy/impact reports: 2

Conference presentations: >60

### Number of Citations (Google Scholar) / h-index:

**Citations: 1498**

**h-index: 24**

**i10-index: 40**

### Awards and Recognition

Fellow of Royal Society for Public Health (FRSPH) - 2025  
Fellow of the European College of Sport Science (FECSS) - 2023  
Fellow of the Higher Education Academy (FHEA) - 2020

## CURRICULUM VITAE 16.

**School:** University of Exeter Medical School / Public Health and Sport Sciences, Children's Health and Exercise Research Centre (CHERC), University of Exeter Medical School

### Personal Information:

First Name: Craig

Last Name: Williams

**Position:** Professor, University of Exeter

**Academic Unit:** Public Health and Sport Sciences

**Centre:** Children's Health and Exercise Research Centre (CHERC)

**ORCID:** 0000-0002-1740-6248

**Email:** C.A.Williams@exeter.ac.uk

**Address:** University of Exeter, Baring Court, St Luke's Campus, Heavitree Road, Exeter, EX1 2LU, UK

### Academic Qualifications:

2006 Fellow of the Higher Education Academy

PhD - University of Exeter, Exeter, Exeter, United Kingdom 1 Sep 1992 - 19 Jul 1995

MSc - University of Alberta, Edmonton, Canada 1 Sep 1992 - 30 Jul 1992

BEd (Hons) - University of Exeter, Exeter, United Kingdom 25 Sep 1983 - 26 Jun 1987

### Teaching Experience:

Professor of Paediatric Physiology and Health, University of Exeter  
 Director, Children's Health and Exercise Research Centre (CHERC), University of Exeter  
 Former Director of Postgraduate Studies / postgraduate teaching leadership in Sport and Health Sciences, University of Exeter  
 2012-present Professor of Paediatric Physiology and Health  
 2006-present Honorary Research Fellow at RD&E Hospital Trust, Exeter  
 2006-2012 Associate Professor, University of Exeter  
 2003-2006 Full time Senior Lecturer, University of Exeter  
 1999-2003 Full time Lecturer, University of Exeter  
 1995-1999 Full time Lecturer, University of Brighton

### Teaching Areas:

Paediatric Exercise Physiology

Paediatric Exercise and Health

Children's Physical Activity and Fitness

Clinical Exercise Testing and Exercise Prescription

Exercise in Paediatric Chronic Disease

Youth Sport and Performance Physiology

Research Methods in Sport, Exercise and Health Sciences

Cardiorespiratory Fitness and Exercise Testing in Children and Adolescents

### Supervision:

Supervision of >35 PhD, >85 MSc and >190 undergraduate research students in paediatric exercise physiology, clinical exercise science, child health, youth sport performance, and exercise testing.

### Professional Experience / Activities:

Professor of Paediatric Physiology and Health, University of Exeter



Director, Children's Health and Exercise Research Centre (CHERC), University of Exeter  
Internationally recognised researcher in paediatric exercise physiology, with work applied to healthy school-aged children, clinical paediatric populations, and youth sport performance.  
Founding Chair / initiator of the Paediatric Exercise Science group, 2006–2009, according to the University of Exeter professional activities profile.  
Research collaborator with paediatric clinicians and NHS partners, including work linked to children with chronic diseases, congenital heart disease, cystic fibrosis and exercise physiology.  
Series Editor, Routledge Research in Paediatric Sport and Exercise Science, with the series including applied sport performance and clinical exercise/chronic disease studies.

### Research Activity:

Paediatric exercise physiology  
Children's health and exercise science  
Physical activity and fitness in children and adolescents  
Exercise testing and training in paediatric chronic disease  
Cystic fibrosis and exercise physiology  
Congenital heart disease and physical activity  
Youth sport performance  
Cardiorespiratory fitness and cardiopulmonary exercise testing  
High-intensity exercise responses in children and adolescents  
Clinical exercise prescription for young people

### Methodologies:

Cardiopulmonary exercise testing  
Exercise intervention studies  
Clinical paediatric exercise studies  
Laboratory-based physiological testing  
Field-based physical activity and sport performance assessment  
Longitudinal monitoring of youth fitness and performance  
Clinical collaboration with NHS paediatric teams  
Exercise testing in chronic disease populations, including cystic fibrosis and congenital heart disease

### Principal Investigator funding:

Physical activity and exercise research in young people with cystic fibrosis, including a major Cystic Fibrosis Trust-supported research centre/initiative involving Exeter and international collaborators.  
Research and clinical collaboration in paediatric exercise physiology with children with chronic diseases, including cystic fibrosis and congenital heart disease.  
Leadership of CHERC, one of the internationally recognised centres in paediatric exercise physiology. CHERC was established in 1987 and has been recognised for major contributions to children's health and exercise research.

### Key funded projects:

1. Cardiopulmonary and Oxidative Exercise Responses in Young People with Cystic Fibrosis  
Research on exercise responses, oxygen uptake, muscle oxygenation, lung function and exercise tolerance in young people with cystic fibrosis.  
Collaborators: Dr Alan Barker; Dr Patrick Oades, Royal Devon and Exeter Foundation NHS Trust  
Funding body: RD&E Foundation NHS Trust

## 2. Helping Little Hearts Project

Project supporting safe physical activity and exercise participation in children with congenital heart defects. It developed an exercise prescription toolkit for children, parents, schools and clinicians, piloted in six UK cardiac centres and rolled out nationally.

Research Fellow: Lucy Gowing, CHERC

Collaborators: Dr Graham Stuart; Dr Guido Pieles; Barbara Harpham

Funding body: Heart Research UK

## 3. Exercise Echocardiography and Young People

Research on how the heart responds to exercise in young athletes and children with congenital heart disease, using echocardiography, cardiac MRI and mobile cardiac assessment.

Partners: Canon Medical Systems Ltd; University of Exeter; University of Bristol; Bristol Heart Institute; UCL; football academies and clinical collaborators

### Grants / Funding

Prof Craig Williams has secured and contributed to externally funded projects in paediatric exercise physiology, cystic fibrosis, congenital heart disease, physical activity, youth sport and clinical exercise prescription.

### Selected Funded Projects

2021–2023

EU Horizon 2020 SEEDS project — Science Engagement to Empower Disadvantaged adolescents

Funding: €1.3 million

Role: Co-Investigator

2020–2022

Helping the Active Stay Active When Life Changes

Funder: Sport England

Role: Principal Investigator

2020–2022

Physical Activity and Exercise Promotion Pathway for Young Patients with Congenital Heart Disease

Funder: Heart Research UK

Role: Principal Investigator

2021–2022

Digital intervention to promote physical activity in young people with cystic fibrosis

Funder: NIHR Research for Patient Benefit

Role: Co-Principal Investigator

2021–2022

Family-focused intervention to promote physical activity in young people with cystic fibrosis

Funder: NIHR Research for Patient Benefit

Role: Co-Principal Investigator

2019

CF Circle of Care / Improving physical activity in adolescents with cystic fibrosis

Funder: Vertex Pharmaceuticals Inc.

Role: Principal Investigator

2017

PETFIB

Funder: Royal Devon and Exeter NHS Foundation Trust

Role: Co-Principal Investigator

2016

Physical Activity, Exercise, Sport and Recreation Promotion for Adolescents with Cystic Fibrosis

Funder: Cystic Fibrosis Trust

Role: Principal Investigator

2014

British Council Researcher Links: UK–Qatar early career researcher collaboration

2014

Exercise echocardiography and ventricular dysfunction in congenital heart disease

Funder: David Telling Grant

2013

Exercise prescription and management in young cystic fibrosis patients

Funder: RD&E Foundation NHS Trust

2012

Oxygen uptake and muscle deoxygenation kinetics in paediatric cystic fibrosis

Funder: RD&E Foundation NHS Trust

2012

fMRI, nutrition and cognitive/physical performance

Funder: Kellogg's

2011

Exercise patterns during soccer coaching

Funder: Manchester United Soccer Schools

2010

Exercise testing and cystic fibrosis

Funder: RD&E Foundation NHS Trust

2010

Physical exercise patterns during soccer schools coaching

Funder: Manchester United Soccer Schools

2010

School-based factors and childhood overweight/obesity

Funder: Medical Research Council

2010

Sustainable physical activity and health in children

Funder: ESRC

2009

Regional, Educational, Leisure, Arts and Youth Sport — RELAYS

2008

Energy intake and energy balance in children and adolescents

Funder: Kellogg's Ltd

2007

Fluid balance in young adolescent footballers

Funder: GlaxoSmithKline

2006

Muscle perfusion in children using MRI

Funder: The Physiological Society

2005

Exercise responses in children with chronic chest disease

Funder: RD&E Foundation NHS Trust

2005

Taste perception and dehydration in children

Funder: GlaxoSmithKline

2004

Gastric emptying in trained youth cyclists

Funder: Gatorade Sports Science Institute

2003

Fat patterning and MRI

Funder: Northcott Devon Medical Foundation

1996

Muscle power in adolescents and adults

Funder: Nuffield Foundation

1993

Aerobic and anaerobic training study

Funder: Northcott Devon Medical Foundation

**Consultant and collaborator with:**

Royal Devon and Exeter / Royal Devon University Healthcare NHS-linked paediatric clinical collaborations

University Hospitals Bristol and Weston / Bristol Heart Institute-linked collaborations

Cystic Fibrosis Trust-supported research initiatives

International academic and clinical collaborators in paediatric exercise science

Schools, sport organisations and clinical paediatric services in relation to children's exercise, physical activity and health.

**Scientific Publications:**

**Google Scholar profile:**

<https://scholar.google.com/citations?user=Q5RxwfYAAAAJ&hl=en>

**Exeter Experts profile:**

<https://experts.exeter.ac.uk/192-craig-williams>

**Peer-reviewed journal articles / research outputs:**

The Exeter profile lists Craig Williams' research outputs, and ResearchGate currently lists more

than 500 publications, although ResearchGate counts may include conference papers and other outputs.

Peer-reviewed journal articles and research outputs: >220 original and review articles, based on book/profile material; ResearchGate lists 514 publications including broader research outputs. Citations: approximately 15,314, h-index: 65, i10-index: 230.

**Book / edited volume activity:**

Editor / Series Editor in paediatric sport and exercise science, including *Exercise and Respiratory Diseases in Paediatrics*.

**Awards and Recognition**

Fellow of the American College of Sports Medicine — FACSM

Fellow of the British Association of Sport and Exercise Sciences — FBASES

Fellow of the Higher Education Academy — FHEA