ΠΑΝΕΠΙΣΤΗΜΙΟ ΔΥΤΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ
UNIVERSITY OF WESTERN MACEDONIA

INTERDEPARTMENTAL POSTGRADUATE PROGRAM

"Digital Health & Health Management Services"

STUDY GUIDE
2025 – 2026

COLLABORATING DEPARTMENTS

Department of Electrical and Computer Engineering
Department of Midwifery

Kozani, May 2025

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A. University of Western Macedonia

1. History

The University of Western Macedonia was founded in Kozani in 2003, under Presidential Decree No. 92 / 11-4-2003. The first members of the Interim University Administration / Body were appointed under the Ministerial Decision F. 120.61 / 132/61865 / B2 / 25.6.2003.

In 2015, after the first elections for a Rector, the University of Western Macedonia became a self-governing institution, and ran courses in 2 cities, Kozani and Florina, with 3 Schools and 6 Departments.

In 2019, the University of Western Macedonia was merged with the Technological Education Institute of Western Macedonia (Law 4610/2019, Government Gazette 70 / A / 07.05.2019). The TEI of Western Macedonia ran courses in 5 Schools and 11 Departments in 5 cities in Western Macedonia. The central campus was in Kozani.

The new University of Western Macedonia runs 7 Schools and 21 Departments in 5 cities (Kozani, Florina, Kastoria, Ptolemaida, and Grevena).

A new, state-of-the-art campus was constructed in the Active Urban Planning Zone (ZEP) of Kozani and started operating in September 2022. The new Campus houses the Rectorate Offices, Administration Services, and three Engineering School Departments.

2. Facilities

The University of Western Macedonia runs Schools and Departments in five cities in Western Macedonia (Kozani, Florina, Kastoria, Grevena, Ptolemaida). The main campus is in the Active Urban Planning Zone (ZEP) in Kozani, and accommodates the University Administration authorities, 3 departments of the School of Engineering and a library. The second campus in Kozani, located in the area of Kila, accommodates the School of Economics, 2 of the 5 departments of the School of Engineering, a library, the Hall of Residence, a student restaurant (there is a second restaurant in the city center) and the university gym.

- Three Departments of the **School of Engineering** (Departments of Mechanical Engineering, Electrical and Computer Engineering, and Chemical Engineering) are located in the main Campus, in the Active Urban Planning Zone (ZEP) in Kozani and two in the campus in the area of Kila in Kozani (Department of Mineral Resources Engineering and Department of Product & Systems Design Engineering). All Departments cater for cutting-edge training and research in state-of-the-art laboratories.
- **The School of Economics** runs 7 Departments, of which 4 (Accounting and Finance, International and European Economic Studies, Regional and Cross-border Development Studies and Management Science and Technology) run courses in Kozani. The Departments of Business Administration, Statistics &

Insurance Science, and the Department of Economics run courses in Grevena, and Kastoria, respectively.

- **The School of Humanities and Social Sciences** is in Florina (3rd km Florina-Niki) and Kastoria. The School runs 4 Departments in Florina (Primary Education, Early Childhood Education and Psychology), and one in Kastoria (Communication & Digital Media), where there is also a student restaurant and library.
- **The School of Agriculture** is located on the University farm in Florina, where there are the administration services building, the main building, the hall of Residence and student restaurant, the library and sports facilities.
- **The School of Fine Arts** is located in Florina (3rd km Florina-Niki), and in the village Psarades, Prespes, where there are laboratories and exhibition areas. The School is going to be re-located in a new campus building in Florina.
- **The School of Science** runs courses in Kastoria (Fourka) in 2 Departments, the Department of Mathematics and the Department of Informatics.
- **The School of Health Sciences** is located in Ptolemaida and runs 2 courses in the Department of Midwifery and the Department of Occupational Therapy.

The University of Western Macedonia offers free meals to students in all cities. There are 2 student restaurants in Kozani (on Kila campus and at 20 Constantinople Street), 2 in Florina (in the buildings of the School of Humanities and Social Sciences and the School of Agriculture), in Ptolemaida, and on campus in Kastoria and Grevena.

Free accommodation is offered in the Halls of Residence in Kozani, Grevena and Florina.

3. University Vision, Mission, and Values

3.1. Vision

The vision in the UoWM strategic planning is to establish the university as a major reference point among Greek and European academic institutions in terms of science and culture. Based on excellence, fully featured academic profile and generated range of knowledge, UoWM envisions to achieve a high position in world university rankings and become an institution which provides substantial support to economic, social and cultural development, both at a local and national level.

As part of its vision, the University of Western Macedonia:

- pursues excellence in education, research and innovation by attracting, supporting and employing young researchers, academic and administrative staff, who are highly competent and professionally consistent and develop significant scientific activity

- aspires, through up-to-date curricula, which promote state-of-the- art research and extrovert scientific activities, to gain a high academic status and potential and focus on social welfare based on democratic ideals, such as meritocracy, free thinking and promotion of scientific knowledge
- promises to contribute, in as much as it is concerned, to prosperity, social progress and national and European culture, especially in the Balkans, through knowledge, scientific thinking, and creativity.

3.2. Mission

UoWM's mission is to promote and consolidate knowledge and progress through its dynamic, reliable and modern functions, both for the benefit of its academic community and society.

UoWM's mission involves the following three thematic axes:

(1) Education – Research – Culture:

Development and implementation of curricula in disciplines that engage in sustainability in West Macedonia, Greece, and the wider area of the Balkans and Europe. In particular, curricula focus on fostering knowledge, critical thinking, and ethics, which aim at students' personal development, successful professional career, and social status.

Support and enhancement of scientific research, innovation, and extroversion with a view to increasing UoWM's international prestige

Promotion of academic and scientific culture as well as scientific independence and ethics

(2) Economy – Development:

Significant contribution to solving local and national development problems and assisting with regional development planning

Development of business culture, ideas, and organizations to achieve positive results in employment and income, and offer new opportunities in research and the economy

Lifelong education and training emphasizing the importance of human resources as a key component in production

Exploitation of UoWM's assets and its intellectual, intangible, and innovative research outcomes

(3) Just, responsible and open society

Shaping modern citizens via promoting knowledge, participation, and cooperation with an aim to foster a responsible scientific outlook to contemporary problems and avoid discrimination and social exclusion

Promotion of scientific thinking, free dialogue, and exchange of ideas for the benefit of democratic values, tolerance, and societal progress

Support and promotion of cultural work, creative thinking, and environmental awareness

3.3. Values

The moral, social, cultural, and scientific values fostered by UoWM are the basic prerequisites and essential conventions of principles and ethics to meet mission and vision requirements. These values should be cherished by the entire UoWM academic community.

Hard work, dedication, and passion

UoWM members' hard work, competence, enthusiasm, and passion are the cornerstone for achieving the University mission. Educational, research, and administrative work as well as creativity and commitment require effort, dedication, and consistency beyond regular duties and responsibilities for the benefit of the University.

Creativity and sustainability

The development of new ideas, innovation, and actions towards radical change and improvement of both processes and outcomes requires encouragement, originality, and going beyond conventions, which are critical components of a culture of creativity. Creativity, however, must be inextricably linked to collective efforts to preserve and improve the environment, natural resources, and infrastructure for the benefit of future generations and in order to ensure consistent university planning and functions.

Responsibility and consistency

All University members are committed to their own duties, but they also undertake additional tasks, both in order to fulfill their institutional role, which is associated with the accomplishment of UoWM's mission and create an academic setting in accordance with university principles and values.

Integrity and transparency

Decision-making processes and criteria, implementation of decisions, and management of several University-related issues are based on transparency, the widest possible consensus, and focus on consolidating meritocracy and justice in all aspects of academic life. Transparency and accountability in all University functions are crucial to the university members' integrity and provides a healthy work environment.

Academic freedom and respect for diversity

By showing respect for democracy and humanitarian values, UoWM defends the University members' right to prevent restrictive intervention in educational processes and scientific knowledge delivery. In addition, it protects the human and constitutional rights of the academic community members and encourages freedom of expression, constructive argumentation, and respect for diversity of views and attitudes. Non-discrimination policies, which prevent individuals' exclusion from access to knowledge due to different economic and social status or origin (gender, religion, disability, etc.), are indisputable and enduring University values.

4. Student Welfare Service

The Student Welfare service provides administrative support in all activities related to student welfare, in accordance with the current legislation, state funds and Governance decisions.

The Student Welfare team coordinates and provides high quality services and information on issues related mainly to free meals, accommodation and social welfare issues, such as student accommodation benefits.

In detail, the Student Welfare service:

- monitors the implementation of the decisions taken by the UoWM Administration bodies concerning student welfare and, in general, undergraduate students' wellbeing
- compiles legislation and decisions on student welfare issues
- implements current legislation about student welfare
- coordinates and monitors student welfare processes in all UoWM academic units (Kozani, Grevena, Ptolemaida, Kastoria and Florina)
- draws up instructions and circulars in order to ensure effective operation of student welfare services in all UoWM student welfare offices
- examines financial support documents and applications for granting student accommodation benefits, free meals and free accommodation on campus
- operates a database of beneficiaries and collects data about student welfare at UoWM
- supports students with disabilities
- monitors and updates information about student welfare on the university website

Student Support Unit for Vulnerable Groups

The Student Support Unit for Vulnerable Groups (MYFEO) operates under the Directorate of Academic Affairs and Student Welfare, specifically within the Department of Student Welfare, and functions under the supervision of the Vice Rector for International Relations, Global engagement and Student Affairs**.** MYFEO commenced operations in February 2020 and, during its initial phase, was co-financed by the European Union and

the Greek State through the Operational Program "Human Resources Development, Education and Lifelong Learning" (ESPA 2014–2020), under the project "Supporting Social Welfare Interventions for Students of the University of Western Macedonia" (MIS 5051039). The project's scientific coordinator is Professor Dimitrios Pneumatikos. Psychological and Counseling Support Services also operate within the Unit and is staffed by five qualified psychologists. The mission of MYFEO is to promote equitable access to academic studies for all students, particularly those with diverse abilities, needs, and circumstances, by providing: Environmental accommodations and accessibility services, Assistive information and communication technologies, Access and counseling services, financial aid and support mechanisms.

Holistic Wellbeing

The University of Western Macedonia visions itself as a community that fosters quality of life and comprehensive wellbeing. Within this framework, the University seeks to provide holistic support to its students, administrative staff, and academic and research personnel across all aspects of their personal and professional lives. Holistic support is understood as an approach that promotes a healthy relationship with one's body, enhances psychological resilience, and contributes to personal, professional, and social development. To this end, the University offers a range of bio-psycho-social services and initiatives, including Sports and cultural activities, Information and awareness campaigns, Health promotion and prevention programs, Counseling and psychological support services. These initiatives are informed by contemporary research and best practices in diversity management, equality, and inclusion ethics. In this context, during the 2020–2021 academic year, a project was launched under the Research Committee (ELKE) titled *"Management of Care and Wellbeing of the Human Resources at the University of Western Macedonia."* As part of this initiative, the University is developing Wellness Centers in its five campuses to promote health and enhance the physical and social wellbeing of its members. These centers will include: A fitness room equipped with exercise machines, facilities for Pilates, yoga, etc, and a psychologist's office, among others. The project also includes upgrading equipment in existing gymnasiums and student residence halls and expanding athletic and cultural programs to complement and strengthen the current ones.

Student Academic Identification Card

All undergraduate, postgraduate, and doctoral students enrolled in Higher Education Institutions in Greece are eligible to apply for a Student Academic Identification Card, which also serves as a Student Discount Card (Pass). Applications are submitted electronically via the official website: http://academicid.minedu.gov.gr. To complete the online application, undergraduate students must use the institutional credentials (username and password) created upon activation of their university account, which provide access to all institutional electronic services. Students admitted through

transfer or qualifying examinations (as graduates of other universities) are also entitled to receive a Student Academic Identification Card. However, in accordance with current legislation, their card does not grant travel discount privileges.

B. Regulations of the Interdepartmental Postgraduate Program "Digital Health and Health Management Services"

1. Department of Electrical and Computer Engineering

The **Department of Electrical and Computer Engineering (ECE)**, School of Engineering, is based in Kozani, the capital of the prefecture of Kozani, and the seat of the University of Western Macedonia (UoWM).

The Department began its academic activities and admitted its first students in the academic year 2005–2006, originally operating as "Department of Informatics and Telecommunications Engineering". In the academic year 2019–2020, it evolved into the Department of Electrical and Computer Engineering.

For the academic year 2023–2024, the Department admitted 183 new students, while the total number of active registered students is 894.

To meet its educational and research requirements, the Department employs 23 Academic Staff members (Professors and Lecturers), 6 members of Laboratory Teaching Staff (EDIP), and 2 members of Laboratory Technical Staff (ETEP). In addition, it collaborates with faculty from other university departments and appoints qualified adjunct instructors as needed to support its teaching activities.

ECE is the second founded UoWM School of Engineering Department with state - of - the - art technological facilities. Despite its short period of operation, it has acquired a leading and prominent position in Greek and International Academia. The development of the Department at educational, as well at research level, has been rapid, contributing to the emergence of a high-level scientific workforce in the field of technology. According to UoWM Careers Office, labor market absorption rates are high for department graduates, while many of them excel in academic, scientific and professional fields both in Greece and abroad.

The department facilities are within 2 - 3 km of the city center and are accessible by public transport.

Since its establishment, the Department of Electrical and Computer Engineering has been dedicated to advancing the fields of Informatics, Telecommunications, Electronics, Circuits, and Energy Systems. Through teaching, research, and practical applications, the Department prepares engineers equipped with all the necessary qualifications and skills required to keep pace with developments in the rapidly evolving disciplines of Electrical and Computer Engineering.

More specifically, the Department caters for the fundamental education and acquisition of professional skills and specialized knowledge in the following subject areas:

- **Computer Science:** Parallel, Distributed, Mobile and Wireless Computing, Design, Analysis and Algorithm Development.
- **Software and Systems Technologies:** Development and Design of Software, Databases, Internet, Mobile and Embedded Systems as well as Internet of Things applications.
- **Signals, Telecommunications and Networks:** Specialized communications expertise in the design and implementation of Computer Networks, Optical and Wireless Telecommunication Networks, Antenna and Microwave Communications, as well as Analysis and Processing of Digital Imaging and Signals and Biomedical Signals.
- **Electronics and Electrical Engineering:** Study, design and development of electric - electrical systems.
- **Energy:** Design, development and production of electricity systems, electromechanical energy conversion systems, electrical installations, measurements and automation system

The Department of Electrical and Computer Engineering (coordinating department), School of Engineering, in collaboration with the Department of Midwifery, School of Health Sciences, based in Ptolemaida, at the University of Western Macedonia, jointly organize and offer, starting from the academic year 2025–2026, an Interdepartmental Postgraduate Program (MSc) entitled "Digital Health and Health Management". The program operates in accordance with the provisions of Law 4957/2022 (Government Gazette 141/A'), as amended and currently in force.

The administrative support of the program is provided by the Department of Electrical and Computer Engineering, School of Engineering, University of Western Macedonia.

2. Master's Degree Title

The Interdepartmental Postgraduate Program confers a Master's Degree (MSc) entitled: «Ψηφιακή Υγεία και Διοίκηση Υπηρεσιών Υγείας» in Greek and "MSc in Digital Health and Health Management" in English.

The Degree is issued and awarded by the Department of Electrical and Computer Engineering (the coordinating department) and is signed by the Rector of the University of Western Macedonia and the Director of the Interdepartmental Postgraduate Program. A Diploma Supplement is also provided, in accordance with Article 15 of Law 3374/2005 and Ministerial Decision Φ5/89656/ΒΕ/13-8-2007 (Government Gazette 1466/B'). This

explanatory document does not replace the official degree or the transcript of academic records issued by the university.

3. Program Scope and Objectives

The Interdepartmental Postgraduate Program "Digital Health and Health Management" operates entirely through state-of-the-art distance learning methods, in compliance with Law 4957/2022, and is designed to provide advanced postgraduate education, research, and training in Digital Health and Health Services Management.

The program aspires to become a center of excellence in education and research—both at the national and international levels.

Its primary goal is to equip graduates with:

- Technological expertise and in-depth understanding of Digital Health systems and applications
- A solid background in Health Services Management, including operational, strategic and resource management competencies
- The ability to assess and implement innovative technologies to enhance healthcare delivery, patient outcomes, and organizational efficiency.

Graduates of the Program will:

- Critically apply advanced theoretical knowledge, methods, and concepts related to digital health technologies and health services management.
- Acquire specialized technical knowledge and practical skills for design, implementation, and management of digital health systems and healthcare resources.
- Gain transferable professional skills to enhance career prospects in the Digital Health and Health Management sectors.
- Develop advanced research competencies, either as independent researchers or as professional consultants within their areas of expertise, to conduct independent or collaborative research, develop innovative digital health solutions, and enhance administrative practices using cutting-edge tools and methodologies.

Specifically, the program aims to:

- offer in-depth knowledge and skills in Digital Health and Health Services Management, enabling graduates to be fully prepared for roles in public and private healthcare organizations.

- promote research excellence and innovation in the broader field of Health Sciences through the preparation of theses, studies, scientific publications, textbooks, and participation in European and national research projects.
- foster collaboration and partnerships with healthcare organizations within the region of Western Macedonia, across Greece, and internationally.

The ultimate goal of the collaborating Departments is to ensure the quality and continuous improvement of all aspects of the Program, including its educational and research processes, as well as to promote collaborations with related Programs and Centers both in Greece and abroad.

4. Quality Assurance Policy

In accordance with current Greek legislation, Higher Education Institutions are responsible for ensuring and continuously improving the quality of their educational and research activities, as well as the effective performance of their services. This aligns with the best international practices, the principles of the European Higher Education Area (EHEA), and the guidelines of the Hellenic Authority for Higher Education (HAHE).

The Department of Electrical and Computer Engineering of the University of Western Macedonia, as the coordinating academic unit, has fully aligned the program's quality assurance policy with that of UoWM. The program's quality objectives focus on delivering high-quality outcomes in:

- Teaching and learning excellence
- Research performance and innovation
- Quality of academic and administrative services
- Labor market relevance
- Social responsibility and accountability

5. Learning Outcomes

Upon successful completion, graduates of the program will be able to:

- Demonstrate in-depth knowledge in Digital Health and Health Services Management concepts, methods, and technologies.
- Utilize health information systems, medical data management tools, and analytical methods to support evidence-based decision-making processes.

- Understand and apply fundamental principles of health service administration, organizational management, and contemporary health policies.
- Integrate project management methodologies and leadership techniques into digital healthcare environments.
- Design and implement Digital Health solutions aligned with healthcare system and societal needs.
- Exhibit ethical awareness and responsible handling of medical data, particularly for vulnerable populations.
- Critically evaluate technological systems, emphasizing interoperability, usability, and security.
- Apply modern research methodologies to assess and improve healthcare interventions.
- Employ innovative digital solutions (e.g., telemedicine, mobile health apps, eHealth records, AI-driven tools) in practical contexts.
- Synthesize technical and theoretical knowledge to develop strategic initiatives at organizational or system-wide healthcare levels.

Additional skills developed include:

Personal and professional skills:

- Effective communication, teamwork, and leadership in interdisciplinary environments.
- Flexibility and adaptability to rapidly evolving technological landscapes.
- Critical and creative problem-solving.
- Responsibility, ethical conduct, and social awareness in health-related decision-making.

Social and intercultural skills:

- Respect for diversity, human rights, and intercultural communication in healthcare.
- Initiative in promoting equitable access to healthcare services through digital technologies.

6. Program Governance

The competent bodies responsible for the establishment, revision, organization, and operation of the program are the following:

a) The University Senate
b) The Study Program Committee: Specifically, for interdepartmental, interinstitutional, and joint postgraduate programs, the responsibilities of the Department Assembly are exercised by the Study Program Committee.
c) The Coordinating Committee
d) The Interdepartmental Postgraduate Program Director

The **University Senate** holds ultimate authority over the program, exercising powers in accordance with Article 82, paragraph 1 of Greek law. Its responsibilities include:

a) Approving the establishment of the program or modifications to its founding decision.
b) Authorizing extensions of the program's operational duration.
c) Approving the termination of the program if necessary.
d) Exercising any other responsibilities not delegated by law to other governing bodies.

The **Study Program Committee** consists of five (5) Academic Staff members from the collaborating Departments, including at least: a) two (2) members from the Department of Midwifery of UoWM, and b) two (2) members from the Department of Electrical and Computer Engineering of UoWM. The Committee is established by the decision of the Senate of UoWM, which undertakes the administrative support of the Interdepartmental Postgraduate Program, following the recommendation of the Assemblies of the collaborating Departments (Article 81, paragraph 5).

Emeriti Professors of the Department or the collaborating Departments may also participate in the Study Program Committee, provided they undertake teaching duties within the Interdepartmental Postgraduate Program.

The Study Program Committee is responsible for the organization, administration, and management of the Interdepartmental Postgraduate Program, and in particular:

a) establishes committees for the evaluation of applications from prospective postgraduate students and approves their admission to the Interdepartmental Postgraduate Program

b) assigns teaching duties to the instructors of the Interdepartmental Postgraduate Program
c) submits proposals to the Senate regarding modifications to the founding decision of the Interdepartmental Postgraduate Program and any extension of its duration
d) establishes examination committees for the assessment of postgraduate theses and appoints supervisors for each project
e) certifies the successful completion of studies for the award of the Interdepartmental Postgraduate Program degree
f) approves the program's annual report following a proposal by the Coordinating Committee
g) may, following a justified proposal from the Coordinating Committee, decide to suspend the operation of the Interdepartmental Postgraduate Program for one academic year.

The **Coordinating Committee** is appointed by the Study Program Committee for a two-year term and consists of the Program Director and four (4) Academic Staff members from the collaborating Departments with relevant academic expertise, engaged in the Program teaching activities.

The Coordinating Committee oversees the operational coordination and monitoring of the program and in particular:

a) prepares the initial annual budget of the Program and any revisions thereto (when the program has resources in accordance with Article 84), and submits it to the Research Committee of the Special Account for Research Funds (E.L.K.E.) for approval
b) reviews the program's annual report and submits it to the Study Program Committee for approval
c) approves program-related expenditures
d) approves the awarding of scholarships, remunerated or otherwise, in accordance with the Program and the Postgraduate and Doctoral Studies Regulations
e) submits recommendations to the Study Program Committee regarding the allocation of teaching duties and the assignment of teaching tasks in accordance with Article 83,
f) proposes to the Study Program Committee the invitation of Visiting

Professors to meet teaching needs of the Program

g) proposes modifications of the study program to the Study Program Committee
h) recommends to the Study Program Committee reallocation of courses across academic semesters and other measures aimed at the qualitative enhancement of the curriculum.

The **Director of the Interdepartmental Postgraduate Program** is elected by the Study Program Committee during its first session. He/She must be an Academic Staff member, preferably a professor from the coordinating department, serves a two-year term, renewable with unlimited renewal, and chairs the Study Program Committee.

The Director has the following responsibilities:

a) presides over the Study Program Committee, in the case of interdepartmental, interinstitutional, or joint programs, prepares the agenda and convenes meetings (Article 82, paragraph 4a)
b) submits to the Interdepartmental Postgraduate Program proposals related to the effective operation of the Program
c) serves as the Scientific Coordinator of the program in accordance with Article 234 and exercises the relevant duties (Article 82, paragraph 4d),
d) monitors the implementation of the decisions made by the program's governing bodies and ensures compliance with the Internal Regulation for Postgraduate and Doctoral Studies, as well as the execution of the program's budget,
e) performs any other duty defined in the founding decision of the Program
f) The Director as well as the members of the Study Program Committee are not entitled to any remuneration or compensation for executing their administrative and academic duties.

7. Academic and Teaching Staff

The Academic and Teaching Staff members are the following:

Angelidis Pantelis	**Professor**, *Department of Electrical and Computer Engineering*, UoWM (Kozani)
Diploma	Electrical and Computer Engineering Department, Aristotle University of Thessaloniki (1989)
Doctoral Degree (PhD)	Electrical and Computer Engineering Department, Aristotle University of Thessaloniki (1993)
Academic Field	Bioinformatics – Biomedical Signal Processing
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Itziou Aikaterini	**Assistant Professor**, *Department of Midwifery,* UoWM (Ptolemaida)
Bachelor's Degree	Department of Biology, Aristotle University of Thessaloniki (2004)
Doctoral Degree (PhD)	Department of Biology, Aristotle University of Thessaloniki (2010)
Academic Field	Biology specializing in the study of cellular-biochemical-molecular pollution biomarkers during pregnancy
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Bogiatzidis Panagiotis	**Assistant Professor**, *Department of Midwifery,* UoWM (Ptolemaida)
Bachelor's Degree	Department of Mathematics, Aristotle University of Thessaloniki (1990)
Master's Degree	*MSc in Health Care Management*, Hellenic Open University (2004)
Doctoral Degree (PhD)	Department of Business Administration of Food and Agricultural Products, University of Ioannina (2012)
Academic Field	Health Care Management
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Orovou Eirini	**Assistant Professor**, *Department of Midwifery,* UoWM (Ptolemaida)
Bachelor's Degree	Department of Nursing, University of Thessaly (2000) Department of Midwifery, University of West Attica (2007)
Master's Degree	*MSc in Public Health*, European University of Cyprus (2017)
Doctoral Degree (PhD)	Department of Midwifery, University of West Attica (2022)
Academic Field	Midwifery Care and Women's Mental Health
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Papoutsis Dimitrios	**Associate Professor**, *Department of Midwifery,* UoWM (Ptolemaida)
Medical Degree (MD)	Medical School of National and Kapodistrian University of Athens, (1998)
Master's Degree	*MSc in Health Care Management*, Hellenic Open University (2013)
Doctoral Degree (PhD)	Medical School of National and Kapodistrian University of Athens (2012)
Academic Field	Midwifery Care - Natural Childbirth
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Ploskas Nikolaos	**Associate Professor,** *Department of Electrical and Computer Engineering*, UoWM (Kozani)
Bachelor's Degree	Department of Applied Informatics, University of Macedonia, Thessaloniki (2007)
Master's Degree	*MSc in Applied Informatics*, University of Macedonia, Thessaloniki (2009)
Doctoral Degree (PhD)	Department of Applied Informatics, University of Macedonia, Thessaloniki (2014)
Academic Field	Algorithms for combinatorial problems
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Tzitiridou Maria	**Associate Professor,** *Department of Midwifery,* UoWM (Ptolemaida)
Medical Degree (MD)	Medical School, Aristotle University of Thessaloniki (1998)
Doctoral Degree (PhD)	Medical School, Aristotle University of Thessaloniki (2003)
Academic Field	Pediatrician – Neonatologist specializing in Developmental Pediatrics
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Tsalikakis Dimitrios	**Assistant Professor**, *Department of Electrical and Computer Engineering*, UoWM (Kozani)
Bachelor's Degree	Department of Mathematics, University of Ioannina (2001)
Master's Degree	*MSc in Health Care Management,* University of Macedonia, Thessaloniki (2017) *MSc in Business Information Systems,* Open University of Cyprus (2018)
Doctoral Degree (PhD)	Medical School, University of Ioannina (2006)
Academic Field	Modeling and Analysis of Electrophysiological Data
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Tsipouras Markos	**Professor**, *Department of Electrical and Computer Engineering*, , UoWM (Kozani)
Bachelor's Degree	Department of Computer Science, University of Ioannina (1999) Department of Natural Sciences, Hellenic Open University (2013)
Master's Degree	Department of Computer Science, University of Ioannina (2002)
Doctoral Degree (PhD)	Department of Computer Science, University of Ioannina (2008)
Academic Field	Digital Signal Processing
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8. Administrative Staff

Vasiliki Melliou	*Head of ECE Administration Office*
Theodora P. Trigoni	*Postgraduate Program Secretary*

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9. Interdepartmental Postgraduate Program Regulations

9.1. Master's Degree Title

The Interdepartmental Postgraduate Program confers a Master's Degree (MSc) entitled: **«Ψηφιακή Υγεία και Διοίκηση Υπηρεσιών Υγείας»** in Greek and **"MSc in Digital Health and Health Management"** in English.

The Degree is issued and awarded by the Department of Electrical and Computer Engineering (the coordinating department) and is signed by the Rector of the University of Western Macedonia and the Director of the Interdepartmental Postgraduate Program. A Diploma Supplement is also provided, in accordance with Article 15 of Law 3374/2005 and Ministerial Decision Φ5/89656/BE/13-8-2007 (Government Gazette 1466/B'). This explanatory document does not replace the official degree or the transcript of academic records issued by the university.

9.2. Eligible Candidates

The Postgraduate Program is addressed to graduates of Electrical Engineering, Computer Engineering, Schools of Health Professionals (Medical, Paramedical, Nursing, Obstetrics) and other Health Scientists as well as to graduates of Departments of Physics, Mathematics, Pharmacy, Dentistry, Economics and Biology, who wish to staff Nursing Institutions. Candidates should be graduates of Higher Education Institutions in Greece and/or recognized equivalent institutions abroad and should hold a degree with "Good" as a minimum grade.

9.3. Number of Admitted Students

The maximum number of admitted students is set at sixty (60) per study cycle, divided into two groups of thirty (30) students each. In the event of a tie among candidates, all those with the same final score as the last successful candidate will be admitted as additional students. The number of admitted students may be modified by decision of the Study Program Committee. The number of groups per study cycle is determined in accordance with the Postgraduate Studies Regulations of the University of Western Macedonia.

9.4. Duration - Terms and Conditions of study

The duration of the Interdepartmental Postgraduate Program is three (3) semesters. During the first two semesters, lectures are delivered, while the third semester focuses on the preparation and completion of a Master's Thesis. Each semester includes four compulsory courses, with three teaching hours per week per course (a total of 12 contact hours per week).

The Program offers the possibility of part-time study, provided that it does not exceed twice the time of the regular study, following a reasonable application by the postgraduate students and approval by the Study Program Committee. The terms and conditions for part-time study apply as for the First Cycle of Studies (Undergraduate Studies).

The following are eligible to apply for part-time study:

- students proven to work at least twenty (20) hours per week
- students with disabilities and special educational needs
- parents of children with disabilities and single-parent families

In exceptional cases, suspension of studies may be granted by the Study Program Committee for a period that may not exceed two (2) consecutive semesters. The time of suspension of studies is not counted in the maximum duration of study. After the end of the suspension of studies, the postgraduate student is obliged to attend all courses, seminars, practical exercises, etc. in which he/she has not been successfully evaluated before his/her suspension of studies.

9.5. Tuition Fees

The Tuition Fees for the Postgraduate Program amount to three thousand and nine hundred (3,900.00) euros, paid in three equal installments of 1,300.00 euros upon registration of the candidates and before the start of the second and third semesters

respectively. Payment is made on specific dates, notified in time. In case of interruption of studies, the tuition fees already paid are non-refundable.

Tuition fees are considered necessary for the effective operation of the program and the provision of high-quality educational services which otherwise cannot be ensured through alternative funding sources. The amount of the tuition fee is determined based on the principle of reciprocity, reflecting the value of the services provided — including teaching, access to educational materials and digital platforms, and the availability of scholarships.

Up to 30% of the enrolled students may apply for Tuition Fee exception provided they meet the criteria defined in Article 86 of Law 4957/2022. To be exempted from tuition fees, their individual and household equivalent disposable income should not exceed 100% and 70% respectively of the national median equivalent disposable income, according to the most recent data published by the Hellenic Statistical Authority (ELSTAT).

9.6. Students' Rights and Obligations

Postgraduate students admitted to the Interdepartmental Postgraduate Program "Digital Health Services Management" are required to:

- ✓ Attend all courses and scheduled academic activities of the approved curriculum without interruption. The maximum number of permitted absences for each student is one third (1/3) of the total teaching hours, regardless of whether the absences are excused or unexcused.
- ✓ Submit all required course assignments on time and within the specified deadlines.
- ✓ Comply with the decisions of the governing bodies of the Program and uphold the standards of academic ethics.
- ✓ Submit to the Administration Office, prior to the evaluation of their master's thesis, a signed declaration stating that the thesis was completed independently and does not contain any plagiarized material.
- ✓ Participate in educational activities, conferences, workshops, symposia, and other academic events organized by the Postgraduate Program.
- ✓ Fulfill their financial obligations by the deadlines set by the Administration Office. Tuition fees amount to a total of €3,900, payable in three equal

installments of €1,300 each — upon registration and before the beginning of the second and third semesters, respectively. Tuition fees must be paid on the specified dates announced in advance. In the event of withdrawal from the program, any fees already paid are non-refundable.

✓ Register on the Postgraduate Program alumni platform upon completion of their studies.

Postgraduate students are entitled to:

- A Student Academic identity card.
- A university email account at the University of Western Macedonia (UoWM).
- Access to UoWM library network.
- Access to electronic databases subscribed to by UoWM (Hellenic Academic Libraries Link – HEAL-Link).

10. Program Structure and Curriculum

To be conferred a Master's Degree in Digital Health and Health Services Management, students must successfully complete eight (8) courses during the first and second semesters. The third semester concerns thesis preparation, provided that students have fulfilled both their academic and financial obligations from the previous semesters.

10.1. Course Outlines

The Master's Thesis and the 1st and 2nd semester courses are graded on a 10-point scale, with 10 being the highest grade. All postgraduate courses carry 7.5 ECTS credits, corresponding to a total of 30 ECTS per semester. The Master's Thesis also carries 30 ECTS credits. A Master's Degree (MSc) is conferred upon the successful completion of 90 ECTS credits in total.

The structure of the Program is as follows:

1st Semester			
S/N	Course Title	ECTS credits	Hours/ Week
1	Digital Health – Principles of Health Information Systems	7,5	3

2	Fundamental Principles of Management in Health Services	7,5	3
3	Management of Personal Health Data – Bioethics in Healthcare	7,5	3
4	Health Data Processing Algorithms	7,5	3
	Total	**30**	**12**

S/N	Course Title	ECTS credits	Hours/ Week
1	Elective Course A'	7,5	3
2	Elective Course B'	7,5	3
3	Elective Course C'	7,5	3
4	Elective Course D'	7,5	3
	Total	**30**	**12**
3rd Semester			
1	Master's Thesis	30	-

In the 2nd semester, students are required to select a total of four (4) elective courses as follows:

- ✓ **Option 1: Three** (3) courses from **Group A** and one course (1) from **Group B**.
- ✓ **Option 2: Three** (3) courses from **Group B** and one course (1) from **Group A**.
- ✓ **Option 3: Two** (2) courses from **Group A** and two (2) courses from **Group B**.

Students must choose one of the above combinations to ensure a balanced distribution between the subject areas of the two groups.

S/N	Elective Courses - Group A'

1	Diagnostic, Sensory, and Imaging Technologies
2	Introduction to Artificial Intelligence
3	UX in Digital Health: Methodologies and Applications

S/N	Elective Courses – Group B'
1	Evaluation of Economic Efficiency of Health Services and Technologies
2	Fundamental Principles of Data Collection and Evaluation of Epidemiological Studies
3	Bioethics and Health Law in Public Health Policies
4	Administration and Quality Management in Healthcare Services

10.2. Course Scheduling

Each semester consists of thirteen (13) full weeks of instruction. All Compulsory courses have a total duration of 39 teaching hours per semester. The languages of instruction are Greek and/or English. Courses may be offered in English following a decision by the Study Program Committee. For this to be considered, at least twenty (20) students must submit a formal request. Supervision of the theses will be allocated among the teaching staff members of the teaching staff of the Program based on each member's total teaching hours. The maximum duration for completing the Program is three (3) years. Students may request a study leave of up to one (1) year for personal, subject to approval by the Study Program Committee Each course involves three (3) teaching hours per week for 13 weeks per semester and concludes with a final examination.

10.3. Postgraduate Students' Assessment

Students are evaluated for each course by the instructor according to the method established prior to the start of the course (examination/written assignment/ or both). Performance is graded on a 1-10 scale, with 5 as the passing grade. Students who fail a course exam/written assignment submission repeat the examination or resubmit the project in September. If a student fails to meet the requirements of one or more courses to the extent that they have not successfully completed the Program according to the

Postgraduate Program Regulations, they may request a re-examination by a three-member faculty committee. Committee members must have the expertise in the same or a closely related field as the course being evaluated and are appointed by the Department Assembly. The course instructor is excluded from the committee. Instructors are required to release exam/written assignments results within thirty (30) days of the examination or submission date. Postgraduate students are required to attend all lectures and associated activities for each course. The maximum allowable absence is one third (1/3) of total teaching hours (13 hours per course), regardless of whether absences are justified or not. Exceeding this limit may result in the student being required to repeat the course or may lead to the exclusion from the Postgraduate Program as determined by the Interdepartmental Committee for Postgraduate Studies.

10.4. Master's Thesis

At the beginning of the third semester, students apply to the Department Assembly for approval of a proposed thesis topic, after consultation with a proposed supervisor. The application must be accompanied by a summary of the proposed research assignment. The supervisor must be a member of the teaching staff assigned partially or fully to teach a course in the program. The supervisor is responsible for monitoring and evaluating the progress of the thesis, ensuring that the research objectives and requirements are met. The supervisor may be an Academic Staff Member (DEP) of UoWM, the Democritus University of Thrace, or another higher education institution in Greece or abroad. Members of Special Teaching Staff (EDIP), Laboratory Teaching Staff (EEP), or Special Technical Staff (ETEP) holding a doctoral degree may also act as supervisors.

Members of the Three-Member Examination Committee must possess expertise in the scientific field of the postgraduate program and may belong to either the collaborating department or other university departments, provided they have the appropriate specialization.

Theses may be written in a foreign language, upon agreement with the supervisor.

A change of thesis topic is permitted only following a justified request by the student and approval by the Program Committee. Such a change does not constitute grounds for extending the submission deadline. In exceptional circumstances, and for justified reasons, replacement of the supervisor or a member of the Examination Committee may be approved by the Department Assembly.

Upon thesis completion and approval by the supervisor, the final evaluation is scheduled within a specified timeframe and includes an oral defense before a three-member Examination Committee.

Students are solely responsible for the originality and authorship of their thesis. Plagiarism—defined as the partial or complete copying or use of another person's work, published or not, without proper citation—is a serious academic offense. Proven cases of plagiarism may lead, upon recommendation of the supervisor, to permanent expulsion from the postgraduate program.

The maximum period for a Master's Thesis submission is 18 months from the approval date. In exceptional cases, and upon justified request, the period may be extended for up to two additional semesters with approval from the Program Committee.

10.5. Master's Degree Final Grade

The final grade of the Master's Degree is calculated on a 10-point scale as the weighted average of the grades obtained in all individual courses and the Master's Thesis, according to their respective weighting factors.

The grading scale is as follows:

Excellent	≥ 8,50
Very Good	6,50 ≤ 8,49
Good	5 ≤ 6,49

10.6. Scholarships

The Postgraduate Program may, by decision of the Department Assembly, award scholarships to postgraduate students based on academic and objective criteria.

11. Transitional Provisions

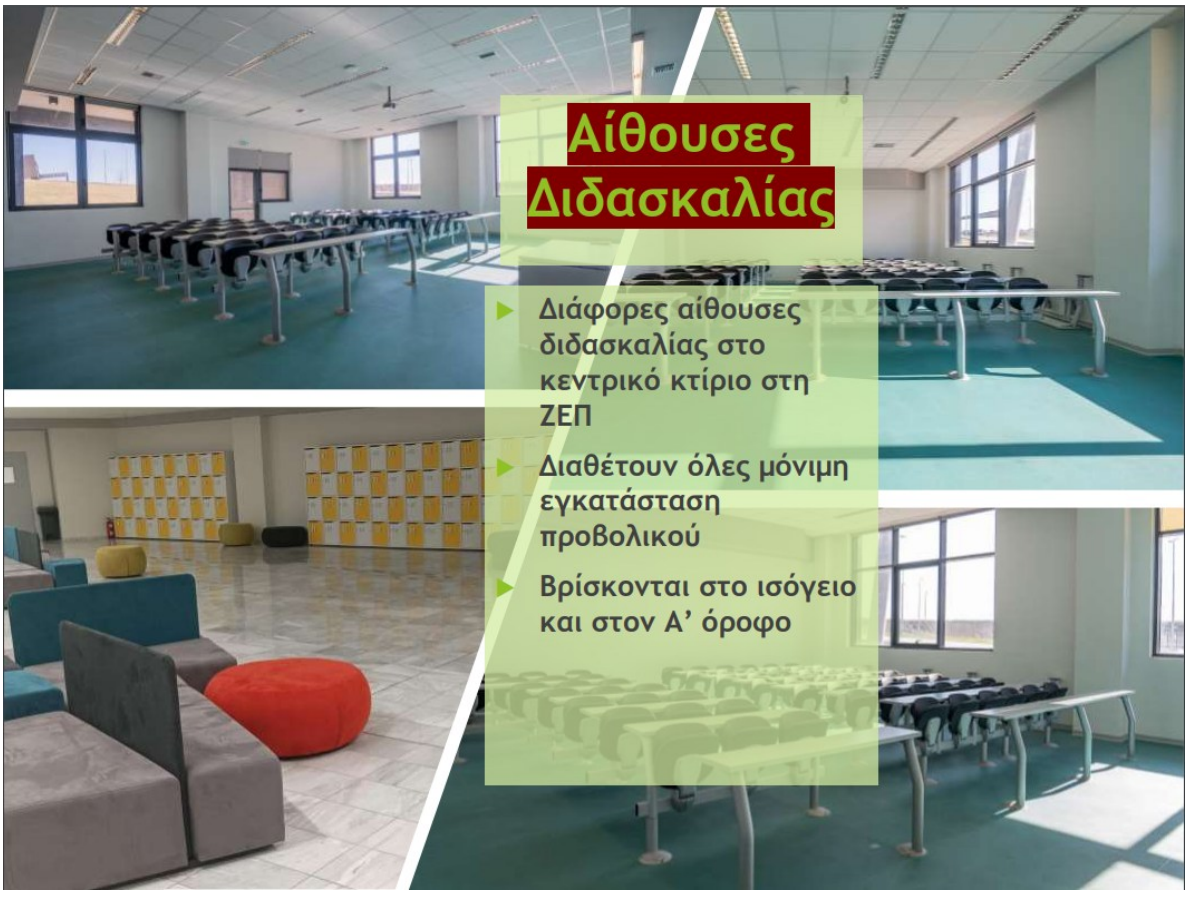
Any issues not regulated in these Internal Regulations, as well as specific issues that may arise during the operation of the Postgraduate Program, shall be regulated by decisions of the Department Assembly in accordance with the applicable legislation.

12. Facilities

The Department of Electrical and Computer Engineering is housed at ZEP Campus in the southwestern entrance of Kozani. The following Facilities exist and operate in the Department:

- Lecture Rooms
- Wellness rooms

- Auditorium
- Library
- Department Administration Service
- Informatics Laboratories
- Department Laboratories

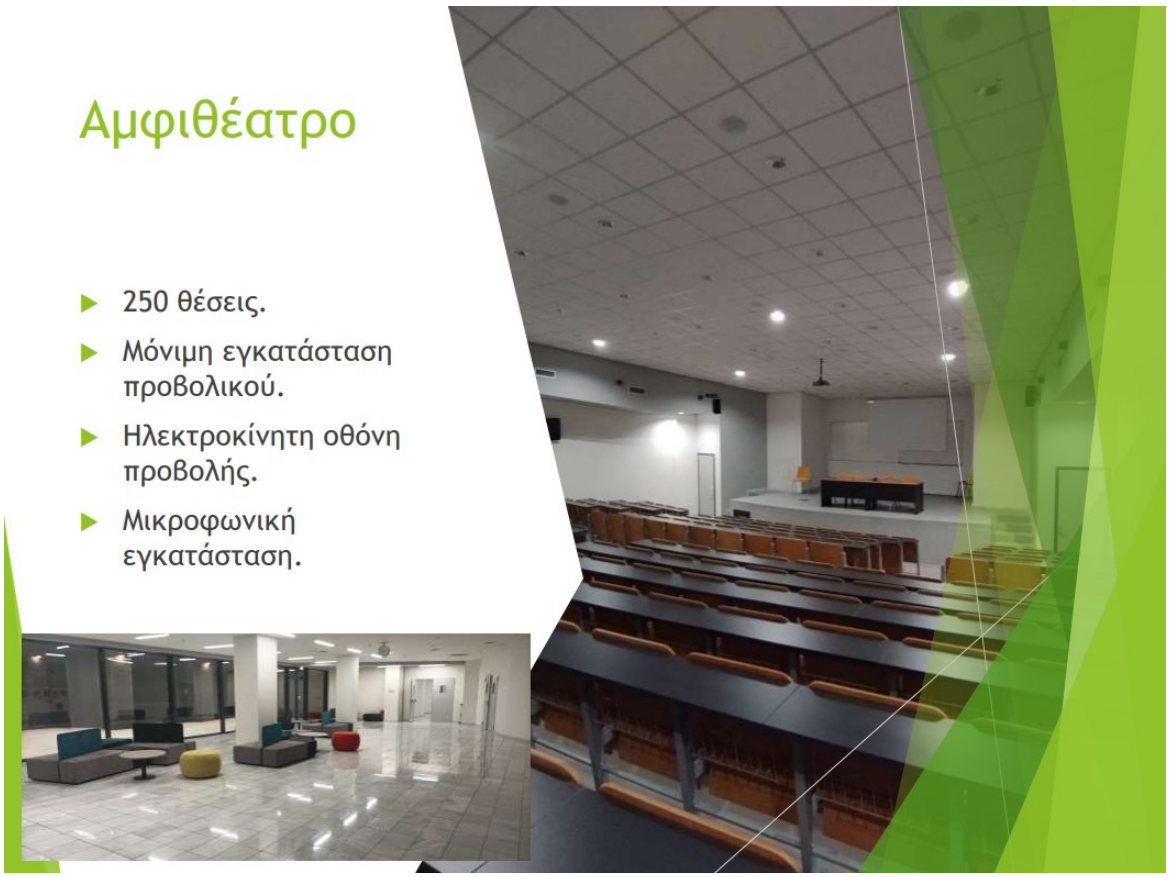


Αίθουσα Ευεξίας ΠΔΜ

- Πάρκο Αγ. Δημητρίου στην Κοζάνη, 1ος όροφος
- Αίθουσα πολλαπλών χρήσεων από την Ολιστική Μέριμνα του Πανεπιστημίου.
- Ομάδες (θα ξεκινήσουν σύντομα):
  - Latin
  - Παραδοσιακών Χορών
  - Pilates
  - Yoga
  - Tennis
  - Σκάκι
  - Μπάσκετ (στο κλειστό Γυμναστήριο στην Πανεπιστημιούπολή στα Κοίλα)
  - Οργάνων ενδυνάμωσης (στο κλειστό Γυμναστήριο στην Πανεπιστημιούπολή στα Κοίλα)

https://holistic.uowm.gr/

ΟΛΙΣΤΙΚΗ ΜΕΡΙΜΝΑ
ΠΑΝΕΠΙΣΤΗΜΙΟ ΔΥΤΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ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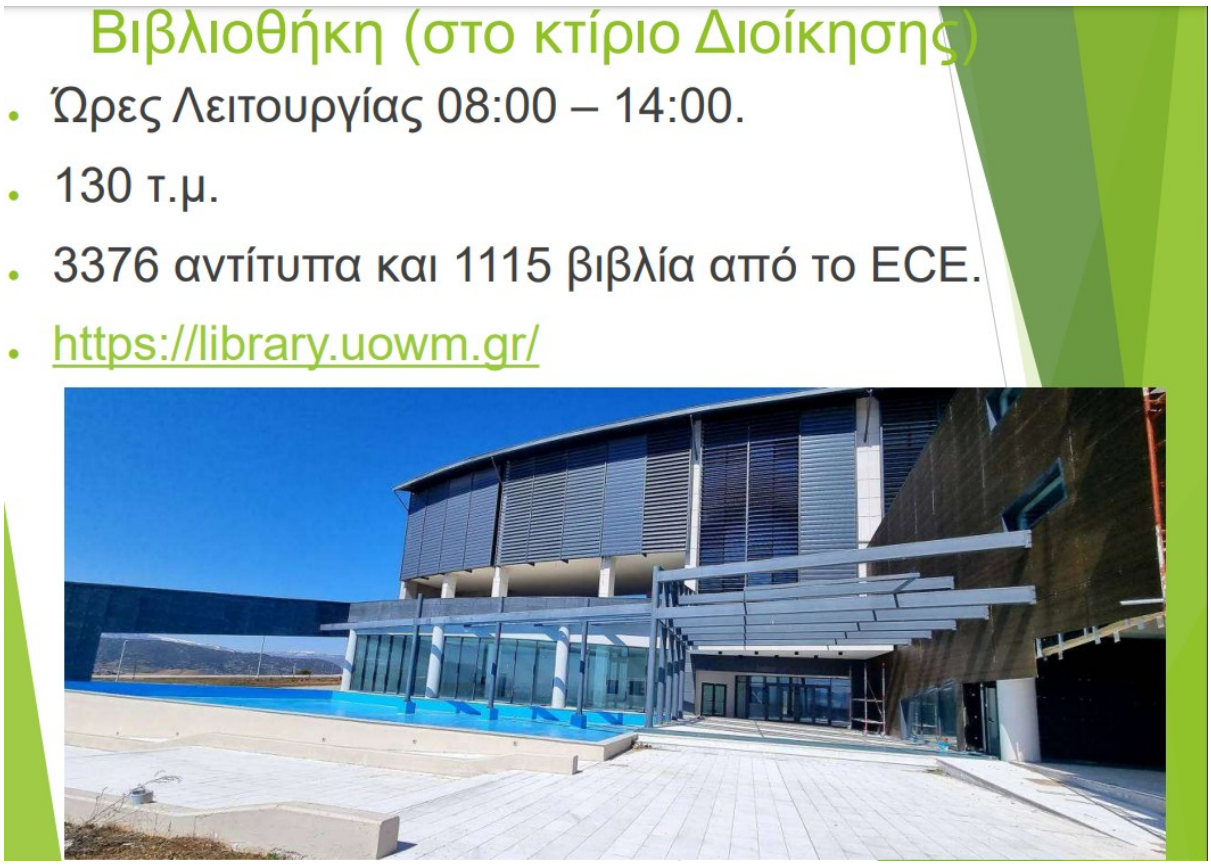
250 θέσεις.
Μόνιμη εγκατάσταση προβολικού.
Ηλεκτροκίνητη οθόνη προβολής.
Μικροφωνική εγκατάσταση.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Ώρες Λειτουργίας 08:00 – 14:00.
130 τ.μ.
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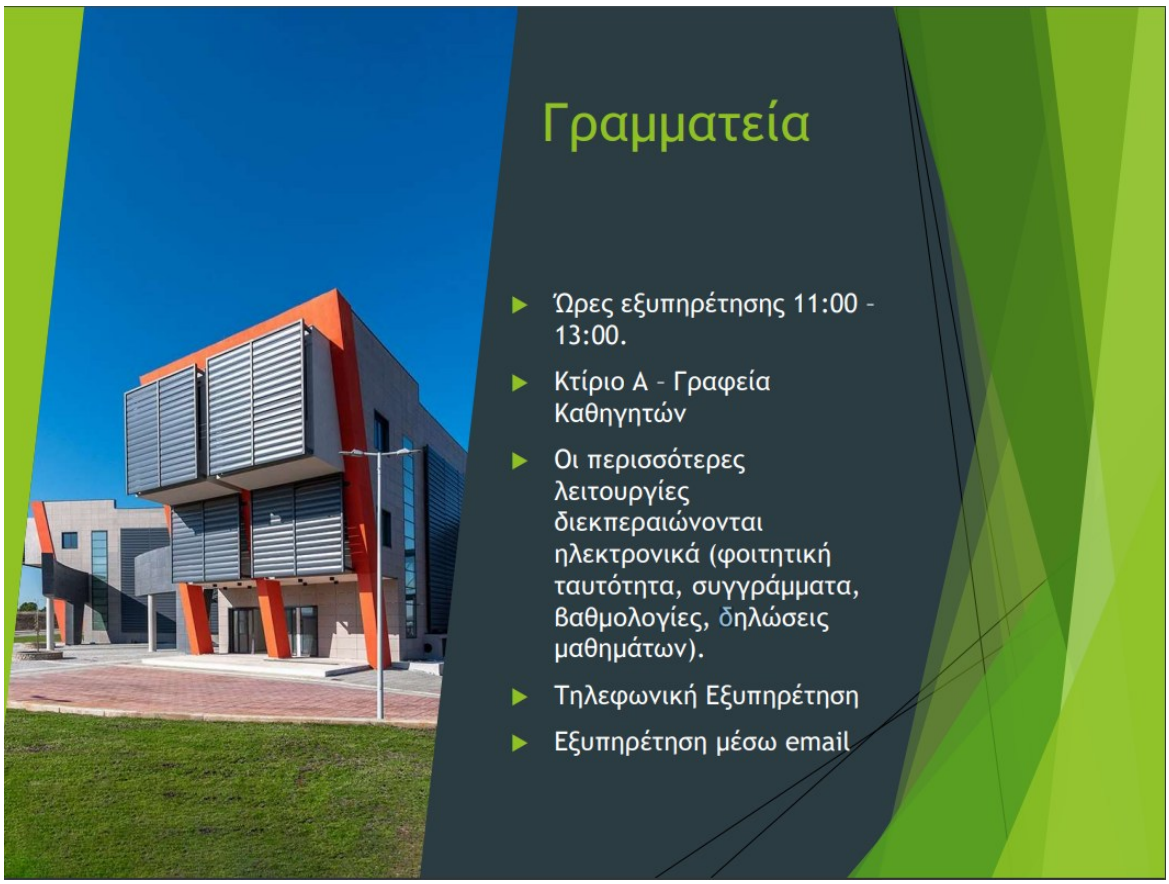
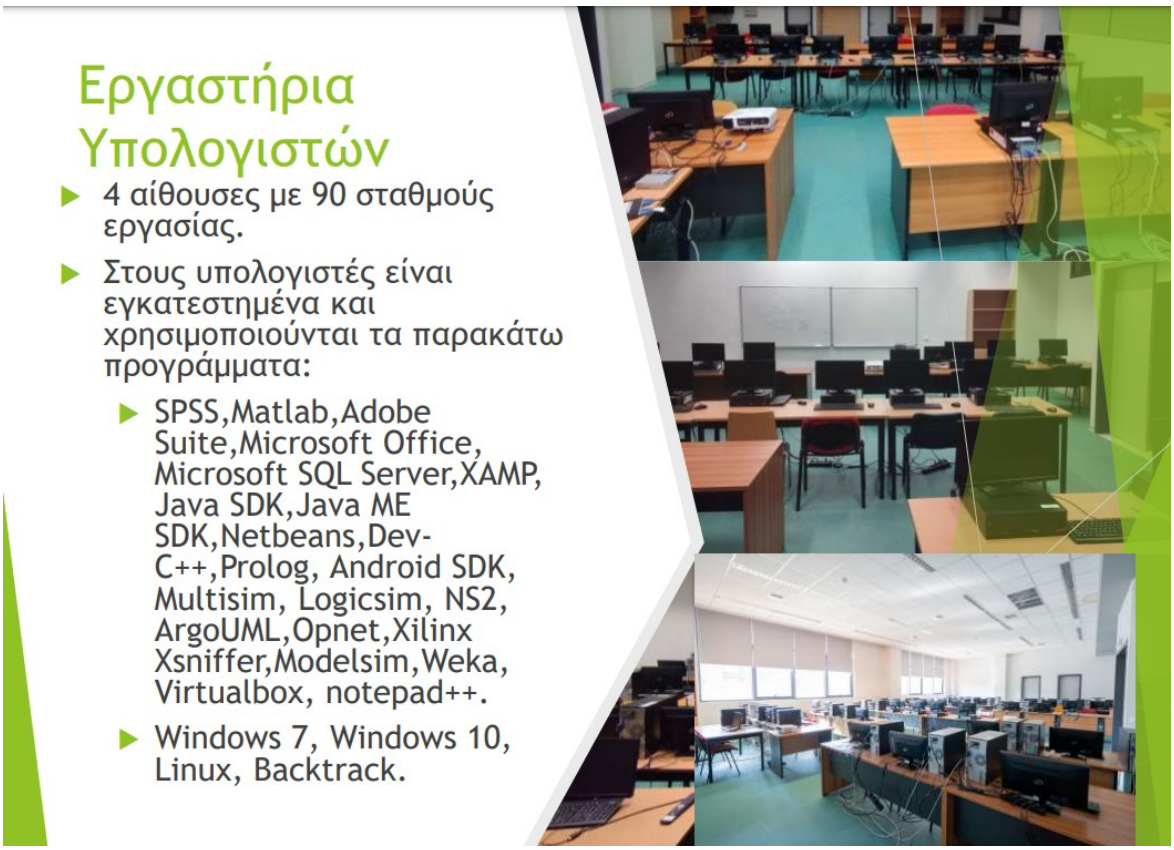
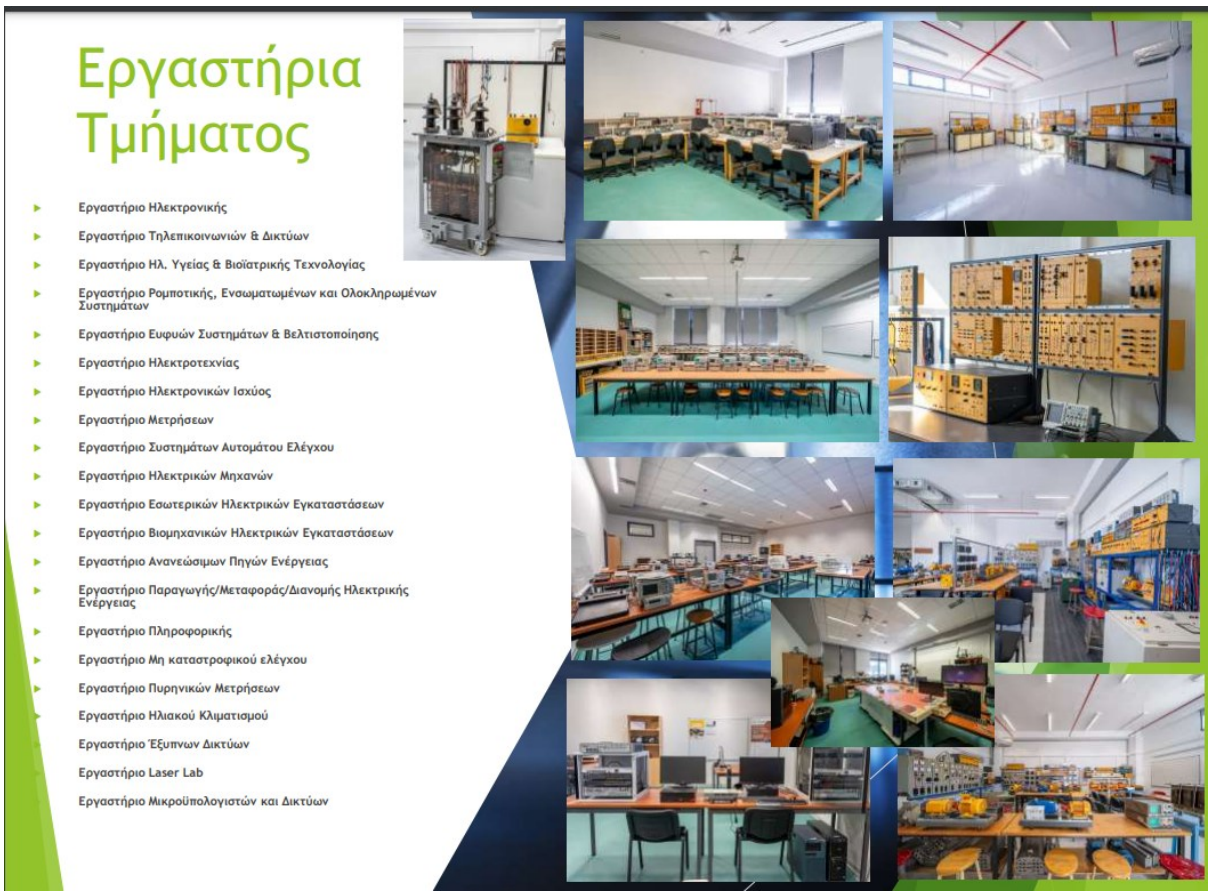
https://library.uowm.gr/


Γραμματεία
Ώρες εξυπηρέτησης 11:00 - 13:00.
Κτίριο Α - Γραφεία Καθηγητών
Οι περισσότερες λειτουργίες διεκπεραιώνονται ηλεκτρονικά (φοιτητική ταυτότητα, συγγράμματα, βαθμολογίες, δηλώσεις μαθημάτων).
Τηλεφωνική Εξυπηρέτηση
Εξυπηρέτηση μέσω email


Εργαστήρια Υπολογιστών
4 αίθουσες με 90 σταθμούς εργασίας.
Στους υπολογιστές είναι εγκατεστημένα και χρησιμοποιούνται τα παρακάτω προγράμματα:
SPSS,Matlab,Adobe Suite,Microsoft Office, Microsoft SQL Server,XAMP, Java SDK,Java ME SDK,Netbeans,Dev-C++,Prolog, Android SDK, Multisim, Logicsim, NS2, ArgoUML,Opnet,Xilinx Xsniffer,Modelsim,Weka, Virtualbox, notepad++.
Windows 7, Windows 10, Linux, Backtrack.



13. Biomedical Technology and Digital Health Laboratory

Laboratory Head: Pantelis Angelidis

The Laboratory of Biomedical Technology and Digital Health addresses the research and educational needs in the field of biomedical technology and its applications, with particular focus on biomechanics, biorheology and clinical hemorheology, clinical engineering, medical imaging and biomedical signal/image processing, biosensors, telematics, medical informatics, neural networks, neurosciences, radiation–tissue interactions, ultrasound technology, virtual, augmented and mixed reality, as well as rehabilitation robotics and automation.

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The Laboratory was established by Government Gazette 218/B/3-02-2020, under the title "Establishment of the Laboratory of the Department of Electrical and Computer Engineering, School of Engineering, University of Western Macedonia, titled 'Laboratory of Biomedical Technology and Digital Health'." An amendment to Articles 4 and 8 was later published in Government Gazette 2315/B/15-06-2020.

The Laboratory consists of the following specialized units:

1. Software Development and Medical Informatics Applications Unit
2. Digital Medical Image and Biosignal Processing Unit
3. Molecular, Genetic, and Proteomic Data Management Unit

The Laboratory's activities include:

1. Development of medical data management systems using Internet and Intranet technologies.
2. Design and implementation of software applications in the field of medical informatics.
3. Development of novel algorithms for protein structure prediction to support drug design through combinatorial optimization.
4. Telematics applications in healthcare.
5. Modeling and simulation of metabolic and signaling biological networks.
6. Management and analysis of molecular, genetic, and proteomic data.
7. Cell-level simulations and computational modeling.
8. Digital processing of medical images and biosignals.

The Laboratory aims to:

1. Support the undergraduate and postgraduate research and teaching needs of the Department of Electrical and Computer Engineering and other departments of the University of Western Macedonia, in topics related to its scientific scope.
2. Promote collaboration with research centers and academic institutions in Greece and abroad with complementary research interests.
3. Organize scientific events such as lectures, workshops, seminars, symposia, and conferences; publish scientific papers and proceedings; and host distinguished Greek and international scholars.
4. Conduct cutting-edge research in Biomedical Technology, with emphasis on software development and medical informatics applications.

5. Provide services to private and public entities in accordance with Presidential Decree 159/1984 ("Conditions for the provision of services by university laboratories to private and public organizations", Government Gazette A' 53).
6. Maintain an official website presenting the Laboratory's research outcomes and related academic activities of other departments and collaborating institutions.
7. Foster links with industry and social organizations to promote scientific advancement and contribute to societal and economic development.
8. Support doctoral and postdoctoral research in the Laboratory's scientific fields.
9. Undertake and implement research and development projects, independently or in collaboration with other laboratories, faculty members, university departments, or external partners in Greece and abroad.

The Laboratory supports the following undergraduate courses offered by the Department of Electrical and Computer Engineering:

- *Biomedical Technology*
- *E-Health*
- *Bioinformatics*

and the following postgraduate courses within the MSc Program **"Biomedical Engineering"** (biomed.uowm.gr):

- *Bioinformatics*
- *Biomedical Signal & Image Processing & Modeling*
- *Bio-Statistics and Big Data Analysis*
- *3D Bioprinting*
- *Biosensors & Advanced Biomedical Signals*
- *Digital Therapeutics*

The Laboratory offers practical training and research experience in:

- Recording and analysis of biological signals (e.g., ECG, blood pressure, oxygen saturation, respiratory function).
- Recording and analysis of electrocardiograms using wireless ECG devices.
- Measurement of arterial blood pressure with wireless sphygmomanometers.
- Assessment of pulmonary function using wireless spirometers.
- Measurement of blood oxygen saturation with wireless oximeters.
- Recording of cardiotocographic signals.
- Digital Processing of Biological Signals
- Application of advanced signal processing techniques for biological systems.
- Design and implementation of digital filters and algorithms for biomedical applications.
- Use of fluorescence microscopy for imaging and analysis of biological samples.
- Medical Imaging Systems
- Processing and management of medical images from CT, MRI, endoscopic, and ultrasound systems.
- Study of image reconstruction algorithms (e.g., simple and filtered back-projection, iterative reconstruction, 3D tomography).
- E-Health and Telemedicine
- Online medical information systems, teletherapy, and peer-to-peer virtual health communities
- Use of Internet technologies in clinical trial support and digital health platforms.
- Telemedicine services and mobile/wireless communications for healthcare delivery.

C. Description of Postgraduate Courses

1. 1st Semester Courses

1.1. Digital Health- Principles of Health Information Systems	
Course Unit Code	-
Course Unit Type	General Background
Description	In this course, students are introduced to the rapidly evolving and interdisciplinary field of Digital Health, with a focus on health information systems and the application of information and communication technologies in critical areas of healthcare. Through the study of key concepts, architectures, and functions of Health Information Systems (HIS), students explore technological solutions addressing major challenges in prevention, diagnosis, treatment, and health monitoring. The course examines state-of-the-art approaches and applications such as e-Wellness, independent living, Health 2.0, and Medical Social Applications (MedSocApps) through case studies, needs analysis, and the design of effective solutions. Students gain insight into the structural components and workflows of health information systems, as well as essential principles of interoperability, standardization, and health data privacy.
Learning Outcomes	• Familiarization with e-Health and the application of cutting-edge technologies in healthcare and Primary Health Care. • Collection, analysis, and synthesis of data and information using appropriate technological tools. • Support evidence-based decision-making in healthcare contexts. • Ability to work and collaborate effectively within interdisciplinary contexts. • Generation of innovative research ideas in the field of Digital Health. • Capacity to work independently and responsibly.
Course Website	Moodle

1.2. Fundamental Principles of Management in Health Services	
Course Unit Code	-
Course Unit Type	General Background
Description	In this course, students are introduced to the fundamental concepts, principles, and tools of management as applied to the field of health services. Combining elements of management theory, public health, economic evaluation, and health organization, the course offers a comprehensive understanding of how health services are designed, structured, and operated across both public and private sectors. Students explore the unique challenges of administrative practice in healthcare, where service delivery is closely linked to human needs, sensitive personal data, and high standards of quality. Through the study of institutional frameworks, socio-economic factors, and health behavior models, they develop an understanding of the effective management of human, financial, and material resources within a continually evolving healthcare system.
Learning Outcomes	Upon successful completion of the course, students will be able to: • Understand the distinctive nature of management in healthcare settings, where professionals both produce and deliver services. • Comprehend the institutional and regulatory framework governing health service administration. • Recognize the necessity of public intervention in the provision and governance of healthcare services. • Understand the principles of social and health policy. • Describe the historical development of the National Health System, identifying its weaknesses and

	potential for improvement in relation to social and economic conditions. • Analyze how health outcomes are shaped by both the organization of the health system and broader social and economic determinants. • Apply methods and techniques of economic evaluation and resource allocation to maximize healthcare effectiveness. • Examine behavioral models of healthcare utilization and the dynamics of the doctor–patient relationship. • Understand models of preventive health behavior and their application to public health strategies. • Recognize the importance of interventions aimed at reducing occupational burnout among healthcare professionals. • Appreciate the significance of diversity and inclusion in healthcare teams. • Understand the lived experience of chronic illness and its psychosocial impacts. • Identify and evaluate frameworks for interventions designed to improve healthcare quality and enhance patient satisfaction. • Apply basic principles of research methodology and select appropriate research designs based on study objectives.
Course Website (URL)	Moodle

1.3. Management of Personal Health Data – Bioethics in Healthcare	
Course Unit Code	-
Course Unit Type	General Background
Description	This course focuses on the relationship between the legal protection of personal data in the health sector and the ethical dilemmas that arise from the use of technology and life sciences in contemporary medical practice and public health. Its aim is to familiarize students with the fundamental principles of data protection law, to enhance their understanding of the role of consent and information provided to data subjects, and to develop their ability to critically address the ethical and social issues that emerge in practice. Topics explored include the use and storage of medical data in electronic records and platforms, data management in clinical studies and eHealth/mHealth technologies, the concepts of privacy and medical confidentiality in the era of artificial intelligence, and the bioethical challenges surrounding the processing of genetic data, biobanks, and personalized medicine.
Learning Outcomes	Upon successful completion of the course, students will be able to: • Understand the key concepts of Data Protection Law in the healthcare sector. • Become familiar with institutional and legal requirements for managing sensitive health data. • Develop the ability to identify ethical dilemmas in real-world biomedical scenarios. • Apply bioethical principles to issues involving genetic data, assisted reproduction, organ transplantation, and medical research.

	• Cultivate ethical and social awareness regarding the use of eHealth and mHealth technologies. • Develop critical thinking on the interplay between science, technology, and human rights. • Recognize the importance of interdisciplinary collaboration in addressing challenges in modern healthcare. • Deepen their understanding of the healthcare professional's role as a guardian of patient trust and privacy.
Course Website (URL)	Moodle

1.4. Health Data Processing Algorithms	
Course Unit Code	-
Course Type	General Background
Description	This course introduces students to both fundamental and advanced principles of collecting, storing, representing, and managing data in the healthcare domain. Emphasis is placed on Big Data, interoperability of information systems, and the application of machine learning techniques in medical practice. Through a combination of theoretical instruction and case studies, students develop the skills needed to organize, retrieve, and analyze health data, gaining practical tools to support decision-making in healthcare services. The course also explores the design of intelligent environments and implementation scenarios that leverage technology and information systems to enhance healthcare delivery.
Learning Outcomes	• Description of basic concepts and types of health data • Analysis of methods for representing and storing health information • Organization, retrieval, and evaluation of data through information systems • Understanding principles of health data management and related infrastructures • Familiarization with Big Data and its applications in healthcare • Identification of machine learning applications in medical analysis and prediction • Design of intelligent environments and their integration into healthcare implementation scenarios

	• Development of research and technological readiness to support decision-making in healthcare services • Acquisition of skills in designing and managing projects related to health information infrastructures
Course Webpage (URL)	Moodle

2. 2nd Semester Courses

2.1. Diagnostic, Sensory, and Imaging Technologies	
Course Unit Code	-
Course Unit Type	Elective - Group A'/Specific Background
Description	In this course, students are introduced to state-of-the-art diagnostic techniques and technologies used in imaging and sensory recording of biological data. Emphasis is placed on understanding sensory organ pathologies through the processing of biosignals and medical images, employing automated analysis methods and computer vision techniques. The course explores the key stages of image analysis—from enhancement and segmentation to feature extraction—while exploring contemporary approaches based on machine learning and semantic object interpretation. Through practical examples and case studies, students gain the necessary tools to evaluate, design, and implement innovative imaging and sensory technologies in the field of healthcare.
Learning Outcomes	Upon successful completion of the course, students will be able to: • Understand fundamental concepts of biosignal and image processing • Become familiar with color and grayscale imaging techniques

	• Develop skills in image enhancement, filtering, and geometric transformations • Apply segmentation and object detection techniques using modern methods • Recognize trends in medical image processing and the role of machine learning • Connect processing techniques with diagnostic procedures and healthcare applications • Cultivate critical thinking in selecting appropriate processing tools and algorithms
Course Webpage (URL)	Moodle
2.2. Introduction to Artificial Intelligence	
Course Unit Code	-
Course Unit Type	Elective - Group A'/Specific Background
Description	In this course, students are introduced to the fundamental concepts and techniques of Artificial Intelligence (AI), with an emphasis on its applications in healthcare. The principles of intelligent systems and basic problem-solving algorithms are analyzed, with particular focus on machine learning and knowledge extraction from health data.The course combines theoretical knowledge with practical approaches, presenting AI applications such as neural networks, decision support systems, clustering methods, and rule generation from data. Students gain a foundational understanding of how intelligent algorithms can support diagnosis, therapeutic strategies, and the improvement of healthcare service quality.
Learning Outcomes	Upon successful completion of the course, students will be able to: • Understand the basic concepts of intelligent systems • Describe fundamental concepts of Artificial Intelligence

	• Apply AI techniques to solve problems in the healthcare domain • Understand the core principles of machine learning • Recognize applications of machine learning in medicine • Comprehend the basic concepts of data mining
Course Webpage (URL)	Moodle

2.3. UX in Digital Health: Methodologies and Applications	
Course Unit Code	-
Course Unit Type	Elective - Group A'/Specific Background
Description	This course focuses on the principles of User-Centered Design (UCD) and usability in health technologies. Students will explore key concepts such as Human-Computer Interaction (HCI), User Experience (UX), and Human Factors Engineering, while gaining practical experience in usability evaluation methods, including Think-Aloud testing and heuristic evaluation. Combining theoretical instruction, workshops, and practical applications, the course aims to equip students with the skills to analyze and enhance user experience in digital health technologies.
Learning Outcomes	Upon successful completion of the course, students will be able to: • Understand the importance of the design and evaluation of Health Information Technology (HIT) and Digital Health Technologies (DHT). • Explain the basic concepts of Human Factors Engineering, HCI, and UX. • Describe the role of User-Centered Design (UCD) in the development of health technologies.

	• Explain the concept of usability and identify different categories of usability issues.
	• Understand how to evaluate usability through:
	  ○ Heuristic evaluation
	  ○ User testing (think-aloud protocol)
	• Assess the usability of health technologies using the Think-Aloud method.
	• Apply appropriate analytical methods to process and interpret data from usability tests.
	• Compile and present their findings in clear and concise reports.

Course Webpage (URL)	Moodle

2.4. Evaluation of Economic Efficiency of Health Services and Technologies	
Course Unit Code	-
Course Unit Type	Elective - Group B'/Specific Background
Description	This course aims to equip students with specialized knowledge in the organization, management, and coordination of healthcare services, ensuring their effective and efficient operation. Upon completion, students will have a comprehensive understanding of the design, organization, and evaluation of inputs and outputs within a healthcare service unit. The course focuses on managing available resources in healthcare services to increase efficiency using cutting-edge tools and technologies, as well as preparing students to evaluate healthcare programs and technologies.
Learning Outcomes	Upon successful completion of the course, students will be able to: • Understand the unique characteristics of healthcare as a commodity and the challenges of applying market rules to service demand and delivery. • Comprehend the principles of Health Economics and methods for assessing the efficiency of healthcare services and technologies. • Identify funding methods for healthcare services and the factors influencing the financial sustainability of health systems. • Apply methods and techniques for economic evaluation and resource allocation aimed at maximizing healthcare outcomes, including tools for measuring service efficiency and productivity. • Integrate relevant medical, economic, social, and ethical information related to the use of health technologies. • Analyze the properties, effects, and implications of health technologies on service delivery and adopt

	strategies to ensure economic efficiency.
Course Webpage (URL)	Moodle

2.5. Fundamental Principles of Data Collection and Evaluation in Epidemiological Studies	
Course Unit Code	-
Course Unit Type	Elective - Group B'/Specific Background
Description	The aim of the course is to develop an understanding of the principles and methods of Epidemiology, as well as the interpretation of epidemiological data in Public Health, Primary Health Care, and healthcare services in general. The course combines theoretical lectures with practical exercises conducted after each session, helping students translate theoretical knowledge into clinical practice. These exercises may include problem-solving, article discussions, or hands-on activities related to study design.
Learning Outcomes	Upon successful completion of the course, students will be able to: • Understand the fundamental concepts and terminology used in Epidemiology and Public Health, including the concept of risk. • Become familiar with the main methods of epidemiological research and describe the advantages and limitations of different study designs. • Identify major sources of bias in epidemiological studies and apply basic methods to prevent or correct them. • Define and use key epidemiological indicators such as morbidity, mortality, and association measures across population groups. • Evaluate the quality of epidemiological data and studies, and apply findings to population and community health contexts. • Interpret epidemiological data in clinical practice and

	research settings. • Connect core concepts of Primary Health Care (PHC) and Public Health (as an extension of the course Society and Health and as an introduction to clinical PHC practice) with prevalence and incidence measures. • Use diagnostic tests effectively, understanding their utility and necessity for evidence-based clinical decision-making (in connection with the course Evidence-Based Medicine and Clinical Decision-Making).
Course Webpage (URL)	-

2.6. Bioethics and Health Law in Public Health Policies	
Course Unit Code	-
Course Unit Type	Elective - Group B'/Specific Background
Description	In this course, students are introduced to the fundamental theoretical principles of Bioethics and Health Law, exploring the close interconnection between legal, ethical, and social dimensions in public health policy. Key concepts such as human rights, individual autonomy, the precautionary principle, and proportionality are analyzed, with a focus on their application to critical issues including pandemics, epidemiology, personal data protection, and genetics. The course adopts a strongly interdisciplinary approach, drawing from law, ethics, public health ethics, and health policy. Through case studies and critical discussion, students develop the ability to synthesize and evaluate diverse values and rights in health-related decision-making.
Learning Outcomes	Upon successful completion of the course, students will be able to: • Demonstrate knowledge of the main legal framework governing contemporary health issues. • Understand the ethical and deontological foundations of modern Public Health and the bioethical dimensions of healthcare delivery. • Identify and analyze bioethical dilemmas inherent in Public Health.
Course Webpage (URL)	-

2.7. Administration and Quality Management in Healthcare Services	
Course Unit Code	-
Course Unit Type	Elective- Group B'/ Specific Background
Description	The purpose of this course is to introduce postgraduate students to the critical role of quality in healthcare services, both for the users-consumers of these services and for providers (physicians, nurses, and other healthcare professionals). Students will also learn to use tools for measuring and evaluating service quality. The course "Health Services Quality Management & Administration" aims to equip students with knowledge particularly useful in organizing, managing, and coordinating quality assurance activities in healthcare units, ensuring their effective, efficient, and high-quality operation. Upon completing the course, students will have a comprehensive understanding of designing, organizing, and evaluating the quality of healthcare services.
Learning Outcomes	• Understanding the basic concepts of healthcare quality: Students will understand the importance of quality in healthcare and how it impacts service delivery. • Analysis of quality systems: Students will be able to analyze and evaluate quality systems within healthcare organizations. • Application of quality tools: Students will learn to apply tools and techniques for improving healthcare service quality. • Managing internal and external client satisfaction: Students will identify the needs of employees and patients and design strategies to enhance satisfaction through service quality. • Strategy and leadership in quality management: Students will recognize strategic approaches for managing quality within healthcare organizations.

	• Evaluation and assurance of quality: Students will learn methods and techniques for assessing healthcare quality, including internal and external audits and certifications. • Risk management: Students will acquire the ability to identify, assess, and manage risks.
Course Webpage (URL)	-

3. 3rd Semester Courses

3.1. Master's Thesis	
Course Unit Code	-
Course Unit Type	Specialization
Description	The Master's Thesis is designed to engage students in the in-depth exploration of a specialized topic within the broader scientific fields of Digital Health and Health Services Management. It serves as a culminating project that integrates and applies the knowledge and skills acquired during the first two semesters of study. Postgraduate students are expected to apply theoretical principles critically and creatively, propose evidence-based solutions, or develop innovative applications and interventions that address real-world or research-driven questions in their field. It constitutes a comprehensive, scientifically grounded, and methodologically rigorous piece of work of significant academic importance, characterized by a clear structure and distinct stages of implementation. Students must demonstrate the ability to present their study, research process, and findings with clarity and coherence—both in a scientifically documented written report and an organized oral presentation. The Master's Thesis may fall into one of the following categories: • **Research/Theoretical Thesis:** Aims to deepen understanding of cutting-edge issues, critically assess existing theories or models, and formulate and examine research hypotheses in the field of *Digital Health* and *Health Services Management*. • **Applied Thesis:** Focuses on the development of digital tools, information systems, or interventions, and the evaluation of their effectiveness in real or simulated healthcare settings.

	Students are encouraged to select topics that demonstrate originality, interdisciplinary perspective, and high research or practical relevance, with potential contributions to scientific advancement or the improvement of health service delivery. The preparation of the Master's Thesis generally includes the following stages: • Topic description and analysis. • Review and critical analysis of the current state of research (literature review). • Definition of the research field — research questions or hypotheses, objectives, and expected outcomes. • Description of the adopted methodology and research tools. • Data collection and/or application development. • Analysis of results (e.g., statistical, content, or applied analysis). • Drawing conclusions based on research findings and existing theoretical frameworks. • Writing of the thesis document. • Preparation and delivery of the final presentation.
Learning Outcomes	Upon successful completion of the Master's Thesis Students are expected to be able to: • Demonstrate an in-depth understanding of a specialized issue in Digital Health and/or Health Services Management. • Identify and delineate the boundaries, dimensions, and key aspects of the topic under investigation. • Describe and analyze the existing body of knowledge relevant to their research focus. • Exhibit critical and original thinking in the interpretation and presentation of findings. • Select, evaluate, and employ relevant Greek and international academic literature. • Design and implement an appropriate theoretical and/or research framework.

	• Apply appropriate methodological tools for data collection and analysis. • Draw well-substantiated scientific conclusions. • Synthesize existing knowledge with new empirical findings. • Acquire competencies and transferable skills that will enable them to continue their studies at a doctoral level or to pursue professional roles in research, technology, and applied health environments.