

MSc “Biomedical Engineering and Technology”

Program Structure - Studies Regulation

Department of Biomedical Engineering

School of Engineering

University of West Attica

Greece

This document (hereafter referred to as **Regulation**) presents the structure, operation, and study rules of the MSc Program "**Biomedical Engineering and Technology**" organized by the Department of Biomedical Engineering of the University of West Attica (UniWA), Greece. Its provisions specify and supplement the legal framework that governs postgraduate studies in Greece, specifically the provisions of Law 4485/2017.

Every candidate selected to study in the MSc Program "Biomedical Engineering and Technology" should accept the study rules listed in this Regulation.

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1. PURPOSE - OBJECTIVES

1.1 Aim

The MSc Program "Biomedical Engineering and Technology" aims to

- a/ *intensive introduction* to biomedical engineering
- b/ *problem-solving* skills development
- c/ *active interaction* with the biomedical engineering industry
- d/ *prepare* students *for Ph.D. studies*

1.2 Objectives

The objectives of the MSc Program are the strengthening of the theoretical and practical background for both the researcher and the professional Engineer.

Specifically, the detailed objectives of the MSc Program are:

1. To strengthen the ability for autonomous assimilation of new knowledge in conditions where the developments of science and technology are amazingly fast
2. To cultivate an interest in scientific knowledge, and to provide the appropriate background for continuation to Ph.D. studies
3. To expand the skills in addressing any current issues related to the practical application of Biomedical Engineering and Technology in Health Services and Industry
4. To produce skills for contributing to the shaping of the future directions of the Biomedical Engineering industry
5. To equip with the knowledge and skills necessary for a positive intervention in business strategies
6. To induce a wider and deeper interdisciplinary education and technical training, as well as work skills of specialized selected technologies
7. To train students in operating in a multifunctional interdisciplinary environment
8. To develop problem-solving skills and the ability to apply these skills in developing innovative solutions to the practical needs of society
9. To enable students to be able to pursue their interests

2. POSTGRADUATE DEGREE

The MSc Program "Biomedical Engineering and Technology" of the Department of Biomedical Engineering of UniWA, awards a **Postgraduate Diploma** entitled "**Biomedical Engineering and Technology**".

3. ADMISSIONS

Applicants should hold an Undergraduate/Bachelor's degree in engineering, physical sciences, health sciences, or other related biomedical engineering subjects.

Important notice: For applicants holding academic titles awarded by foreign (non-Greek) higher educational institutes, it is mandatory to provide academic recognition of their titles by the [Hellenic National Recognition and Information Center \(NARIC\)](#).

4. SELECTION OF STUDENTS

The selection of students is done by Law 4485/2017 and with the provisions of this **Regulation**.

4.1 Call for applications

The call for applications for the MSc Program is released each academic year during the summer semester on both the official website of the program and the UniWA websites. Interested individuals are required to submit their applications online, along with the required supporting documents, to the Secretariat of the MSc program before the specified deadline. The **Department Assembly** holds the authority to extend the deadline if necessary. The call for applications is made available at least one month prior to the application submission deadline.

Applications that will be received after the deadline are not accepted.

The call for applications will specify:

- a) The minimum requirements for the participation of candidates in the selection process
- b) The required documents to be submitted and the process for submission
- c) The deadline for submission of applications
- d) The candidates' selection process and the selection/evaluation criteria

The required supporting documents include:

- Application form (required)
- Two (2) ID photos (required)
- Undergraduate/bachelor's degree certification (required)
- Academic recognition of the Undergraduate/bachelor's degree by the Hellenic National Recognition and Information Center (NARIC) (only for applicants holding academic titles awarded by foreign (non-Greek) higher educational institutes).
- Transcript of records including the list of the courses' grades (required)
- English language certification, **at least B2** (required) or application for written and oral English exams (required)
- CV (max 3 pages) (required)
- Motivation letter (max 2 pages) (a/ provides a description of the motivations behind the decision of the candidate to pursue a biomedical engineering degree, b/ outlines the expected achievements or objectives set by the candidate upon completing the program successfully, c/ elaborate on the factors that have influenced the choice of the candidate to select this specific MSc program, and d/ justifies why the candidate believes that he/she possesses the qualities and qualifications that make him/her a fitting candidate for acceptance into this program) (required)
- Recommendation/reference letters (at least 2) (The recommendation/reference letters should be submitted electronically by the referral before the application deadline) (required)

- Scanned copy of ID (for Greek citizens), passport (for EU and non-EU citizens), and VISA (for non-EU citizens only) (required)
- Two (2) face photographs (required)
- Undergraduate/bachelor's degree thesis (optional, if any)
- Related to biomedical engineering research activity (optional, if any)
- Related to biomedical engineering professional activity (optional, if any)
- Related to biomedical engineering internship(s) (optional, if any)
- Other related to biomedical engineering activity (optional, if any)

The level of English language proficiency is certified according to the provisions of Law 4452/2017. For applicants who do not possess the required English language proficiency certificate (**minimum level B2**), there is an opportunity to take a B2 level written and oral English exam. The MSc program arranges the exam online shortly after the application deadline. The specific date of the examination is communicated to interested applicants. Candidates who pass both the oral and written English language test, as well as those who have submitted English language proficiency certificates, will be invited to participate in an oral interview. This interview serves as the final stage of the evaluation process.

4.2 Evaluation and ranking of applicants

The evaluation process includes two stages:

In the 1st stage, the applications undergo a thorough assessment to determine the completeness and validity of the submitted documents. Meeting the requirements of document completeness and validity is a prerequisite for progressing to the 2nd stage.

In the 2nd stage, selected candidates are invited to participate in an interview conducted by the **Evaluation and Selection Committee**. This oral interview serves as an opportunity for the committee to assess the candidate's personality, evaluate their scientific background, review any prior research or professional experience, and assess their critical thinking abilities. Following the completion of the oral interviews, the **Evaluation and Selection Committee** compiles a list of successful candidates. The list is organized in descending order according to the selection criteria and the assigned weights for each criterion.

| CRITERION | | WEIGHT |
|------------------|---|---------------|
| C1 | Graduation certificate grade | 40% |
| C2 | Related research and/or professional activity | 20% |
| C3 | Reference Letters | 15% |
| C4 | Oral interview | 25% |
| Total | | 100% |

In each of the above criteria (**C1-C4**), the candidate is graded on a scale of 0-10. The final score (**FS**) of each candidate is calculated as follows:

$$FS = (C1 \times 0.4) + (C2 \times 0.20) + (C3 \times 0.15) + (C4 \times 0.25)$$

Candidates who have received a ranking position up to the maximum student admission limit (**30 students**) are considered **Successful Candidates**.

Extra admissions:

- The **Evaluation and Selection Committee** has the authority to admit additional candidates, beyond the initial limit of 30 students, in cases where their evaluation score matches that of the 30th successful candidate.

Runners-up:

- Candidates whose evaluation scores fall below the score of the 30th successful candidate are considered as **runners-up**. They are eligible to register for the program if those ranked higher than them either decline the position or fail to register within the designated timeframe.

Candidates that have not completed their undergraduate/bachelor studies within the deadline of the call for applications:

- **Senior undergraduate students** who anticipate completing their studies prior to the start of the MSc Program in October are welcome to apply for admission. Candidates falling into this category must include a certificate from the appropriate Secretariat, along with their application, detailing any requirements necessary for the completion of their degree. If accepted, successful candidates in this category must submit their graduation certificate prior to the commencement of MSc Program courses in October. It is important to note that any graduation certificates received after the start of the MSc Program in October will not be accepted.

4.3 Announcement of results, registration of successful candidates

The **Department Assembly** approves the final list of **successful candidates** and **runners-up**, which is then published on the official website of the MSc Program while ensuring the protection of applicants' personal information (GDPR compliance). Once the results are announced, the registration periods are made known along with the specified methods for tuition fee payment.

Successful candidates who fail to register within the designated timeframe forfeit their right to enroll in the MSc program, unless they provide valid reasons such as force majeure or serious illness. In such cases, the **Steering Committee** of the MSc Program reviews the reasons given by the candidates and makes appropriate decisions. If one or more students do not register, the **runners-up** will be invited to register based on their ranking position. This process can be repeated as necessary to reach the required number of students (**30 students**) up to one day prior to the start of the MSc Program courses.

Additional documents required for the completion of the registration are:

- Application for registration
- Photocopy of ID (for Greek citizens), or passport (for EU citizens), and/or VISA (for non-EU citizens)
- Certificate of permanent residence in the country of origin and certificate of residence in Greece
- Signed solemn declaration (Law 1599/1986), in which the candidate declares that he /she does not study in another MSc program

- Four face photos
- A copy of the proof of deposit of the first installment of the tuition fees in the bank account of the Special Account for Research Grants of UniWA (except for those mentioned in art. 35, par. 2 of Law 4485/2017)
- For applicants holding academic titles awarded by foreign (non-Greek) higher educational institutes, academic recognition of their titles by the Hellenic National Recognition and Information Center (NARIC)

For reasons of force majeure, candidates may register after the expiration of the deadline, by the decision of the **Steering Committee** of the MSc Program, following the relevant justified request of the candidate.

Successful candidates, before registering, should become aware of and accept the study rules listed in this Regulation.

5. DURATION OF STUDIES

The duration of studies is defined as **three (3) academic semesters**. The maximum duration for successful completion of the studies is six (6) academic semesters. In exceptional cases, attendance may be extended by a decision of the **Department Assembly**.

6. TERMINATION OF STUDIES

If a postgraduate student wishes to permanently terminate their studies, they are required to submit a relevant application to the Secretariat of the MSc Program, which will then be forwarded to the **Coordinator** of the **Steering Committee** for consideration. The final decision to terminate the student's studies is approved by the **Department Assembly** and is considered irreversible.

Termination of a postgraduate student from the MSc program may be initiated for the following reasons:

- Failure to fulfill the student's obligations as described in this **Regulation**.
- Non-payment of tuition fees.
- Disciplinary misconduct, including violations of academic ethics, plagiarism, copying, or any infringement of intellectual property regulations during the completion of course assignments, exams, or the master's thesis.

The removal of a postgraduate student from the MSc program's student registry occurs after the **Steering Committee** recommends it to the **Department Assembly**. The student involved will be notified of the decision within 15 days and has the right to submit an appeal within one month from the date the termination decision is issued. The final determination of the appeal rests with the aforementioned bodies.

If a student permanently terminates or cancels their studies for any reason, the tuition fees already paid will not be refunded.

7. ORGANIZATION OF STUDIES

7.1 Academic Calendar

At the beginning of each semester and before the courses in October, the Academic Calendar is announced on the official MSc Program website. The Academic Calendar specifies the starting and ending dates of the semesters, the examination periods, and the holiday periods. Softer modifications of the academic calendar may occur throughout the academic year. In these cases, students will be informed by email, and/or by the Secretariat, and/or the official website of the MSc Program.

7.2 Weekly schedule

The weekly schedule is announced at the beginning of each semester on the official website of the MSc Program. **Classes can be held during all working days of the week, including Saturday.** Special provisions are made to organize most classes during the afternoon to facilitate students with part-time or full-time employment. It is important to note that minor adjustments to the academic calendar and the weekly schedule may occur during the academic year. In such instances, students will be notified via email, the Secretariat, and/or the official MSc Program website.

7.3 Attendance to classes / educational activities

Classes, lectures, labs, seminars, exams, and all educational activities of the MSc program require physical attendance. A student is considered to have attended a course (and therefore is eligible to take the exam) only if he/she has attended at least 80% of the teaching hours / educational activities of the course. Exceptions may be allowed only for serious reasons and after approval by the **Department Assembly**. The confirmation of attendance of students is the responsibility of each course coordinator. Some of the courses and related educational activities, may be organized online using synchronous distance learning tools. According to Greek legislation, no more than 35% of the courses are permitted to be organized online.

7.4 Cancelled educational activities

In the event of a class or educational activity being canceled due to unforeseen circumstances (force majeure), the class will be rescheduled for a later date. The course coordinator is responsible for arranging the new date and time. Students will receive notification about the rescheduled class directly from the course coordinator. Additionally, information about the rescheduled class or educational activity will be communicated via email, and the official website of the MSc Program.

7.5 Program Curriculum

The program's curriculum has the following key features:

a/ it aims at an **intensive introduction** to the field of biomedical engineering for graduates, scientists, and professionals originating from related engineering, life, and health sciences

b/ it emphasizes **problem-solving** educational methods, for the preparation of independent scientists who wish to improve their professional skills and/or pursue Ph.D. studies

c/ it prioritizes the **active interaction** of students **with the biomedical engineering industry**, for monitoring the 'real-life conditions' of the Biomedical Engineer profession, and for familiarizing with the traditional, evolving, and emerging Biomedical Engineering labor market

The MSc program covers the following scientific fields:

- **In vitro and in vivo diagnostic technologies:** Involves technologies for analyzing biological samples and technologies applied to living organisms (humans and animals)
- **Biomedical instrumentation:** Involves the analysis of the basic instrumentation of digital biomedical devices, involving biosignals (i.e., Electrocardiography, Electroencephalography), in vitro diagnostics (i.e., bio and blood analyzers, chromatography), in vivo diagnostics (i.e., Optical Coherence Tomography, spectroscopy), etc.
- **Medical Imaging:** Involves imaging of the internal anatomy and functionality of the human body with X-ray radiography, x-ray Computed Tomography, Magnetic Resonance Imaging, Positron Emission Tomography, Single Photon Emission Tomography, Ultrasonography, etc.
- **Rehabilitation and biomaterials:** Involve physical function rehabilitation devices, artificial limbs, and organs
- **Biomedical informatics, artificial intelligence, deep learning:** Involves modern software solutions for problem-solving in medicine and biology
- **Emergency medicine technologies:** Involves technologies applied in life-threatening conditions for the perseverance of life (Intensive Care Unit, Surgery, Ambulance, etc.)
- **Science, technology, ethics in Biomedicine:** Involves the social implications and ethical issues raised using Biomedical Technology
- **Marketing and sales:** Involve the analysis of the basic principles of product promotion with a focus on biomedical products
- **Research in Biomedical Engineering:** Involves the basic and applied research in Biomedical Engineering
- **The profession of the Biomedical Engineer:** Involves the analysis of all aspects of the profession of the Biomedical Engineer with the aid of active Biomedical Engineers and Biomedical Engineering companies

The course syllabus is presented in the following tables. Part of the elective courses of the course syllabus are offered on a yearly basis, ensuring that a minimum of 30 ECTS (European Credit Transfer and Accumulation System) is available for each semester. However, if an elective course fails to receive selections from more than 30% of registered students, it will be canceled. In such instances, students are required to modify their course choices.

| 1ST SEMESTER | | |
|--|------------------------------------|-------------|
| COURSE TITLE | R: Required E: Elective | ECTS |
| The science of Biomedical engineering | R | 2.5 |
| Research methodology | R | 2.5 |
| Biology-Biotechnology | R | 5 |
| The Biomedical engineering industry sector I | R | 5 |
| Biostatistics | E | 5 |
| Medical signal and image processing | E | 5 |
| Biomedical marketing | E | 5 |
| Quality Assurance and Medical Device Regulations | E | 5 |
| Biomechanics and Biomaterials | E | 5 |
| Optical Microscopy | E | 5 |
| REQUIRED ECTS FOR THE 1ST SEMESTER | | 30 |

| 2ND SEMESTER | | |
|--|------------------------------------|-------------|
| COURSE TITLE | R: Required E: Elective | ECTS |
| Diagnostic Medical Imaging Systems | R | 5 |
| Biomedical Instrumentation | R | 5 |
| The Biomedical engineering industry sector II | R | 5 |
| Emergency medicine | E | 5 |
| Control systems in biomedical engineering | E | 5 |
| Bioinformatics | E | 5 |
| Human-machine interaction in healthcare | E | 5 |
| Machine Learning in Medicine and Biology | E | 5 |
| Science, Technology, Society: Biomedical Engineering, Social Aspects, Ethics | E | 5 |
| REQUIRED ECTS FOR THE 2ND SEMESTER | | 30 |

| 3RD SEMESTER | | |
|--|------------------------------------|-------------|
| COURSE TITLE | R: Required E: Elective | ECTS |
| Diploma thesis | R | 30 |
| REQUIRED ECTS FOR THE 3RD SEMESTER | | 30 |

The teaching of courses follows a modular and intensive approach, with each course being completed within a period of one to three (1-3) weeks. Following the completion of a course, examinations will be conducted before immediately moving on to the next course.

The educational approach places a strong emphasis on personalized learning and incorporates various methodologies to enhance the learning experience.

- **Classical lectures** in the auditoriums of the Department of Biomedical Engineering, using information technologies (slides, handout material, etc.)
- **Lab practice** in the educational laboratories of the Department of Biomedical Engineering, using specialized biomedical equipment
- **Field visits** to companies, research centers, and healthcare sites, such as hospitals
- **Special seminars** by active Biomedical Engineers, either at the facilities of the Department of Biomedical Engineering, or the facilities companies, research centers, and healthcare sites
- **Personal assignments** for in-depth analysis of the topic of each course, for the encouragement of students' initiatives, and for practicing/implementing the research methodology on a specific task

All the educational material (slides, handout material, scientific articles, e-books, educational videos, self-assessment questionnaires, etc.) will be available at the eclass platform of UniWA.

The following is a brief description of each course topic:

1st Semester

- **The science of biomedical engineering:** The course aims the introduction of the basic scientific fields of biomedical engineering (diagnostic devices, therapeutic devices, in vitro technologies, biomaterials, biomechanics, robotics, rehabilitation engineering, medical informatics, pharmaceuticals, bioinformatics medicine, etc.) and the professional aspects of the Biomedical Engineer profession.
- **Research Methodology:** The course will introduce the basic principles of research methodology (initial hypothesis, data collection, data analysis, publication of results, ethics, and personal data protection issues) and the methodology of drafting scientific articles.
- **Biology-Biotechnology:** The course will provide a brief description of biological concepts and functions that include matter exchange and energy flow in the cell, structure and function of proteins and nucleic acids, cell membranes, basic principles of gene regulation, structure, and function of viruses. A more detailed description of the biotechnology methodologies and tools applied in medicine will be given. These include recombinant DNA technology, stem cell biology, and proteomics. The acquired knowledge can be applied to the design of innovative diagnostic tools, drugs, and therapies capable of curing diseases and improving human health.
- **The industry of biomedical engineering I:** The course will include special seminars by professionals in the field of biomedical engineering that will simulate real-world scenarios such as maintenance, repair, and quality control of biomedical equipment (service engineering), sales and marketing of biomedical products (sales and marketing), special applications for the training of users in the handling of specialized biomedical equipment (application specialist), research and development and the real-world conditions of the labor market.

- **Biostatistics:** This course will introduce the basic principles of biostatistics, descriptive statistics, probability distributions, random variables, confidence levels, statistical tests and hypothesis tests, non-parametric tests, and correlation.
- **Medical signal and image processing:** The course will introduce the basic principles of medical signal processing (time domain, frequency domain, filter design, and implementation) and medical image processing (introduction to image processing, brightness modification techniques, design and implementation of filters in the spatial domain, design, and implementation of filters in the frequency domain, tomographic image reconstruction, 3D imaging) focusing on real clinical applications and scenarios. Laboratory experiments with software development will take place in the computer room of the Medical Digital Image and Signal Processing (MEDISP) lab computer room at the premises of the Department of Biomedical Engineering.
- **Marketing in Biomedicine:** The course will introduce the basic principles of marketing, the life cycle of a biomedical product/service, the purchase of biomedical products/services, the development of a marketing plan, marketing research, promotion, communication, and digital marketing.
- **Quality Assurance and Medical Device Regulations:** The course will introduce the basic quality assurance principles, standards, and quality management regulations of medical systems.
- **Biomechanics and Biomaterials:** The first part of the course will discuss the basic principles of biomechanics, the concepts and technologies related to the assessment of human performance, the restoration/rehabilitation of human functions to those affected by accidents, and/or paraplegia, and the prosthesis of artificial limbs in the human body. The second part of the course will discuss biomaterials and tissue engineering, along with their applications in biomedical engineering.
- **Optical microscopy:** This course will introduce the basic principles of optical microscopy including widefield, fluorescence, confocal, multi-photon, and super-resolution microscopy. Laboratory experiments and demonstrations will take place in the microscope room of the Department of Biomedical Engineering.

2nd Semester

- **Diagnostic imaging systems:** The course will introduce the basic principles in medical imaging, the physics of light and matter interaction, the organization of radiographic imaging systems, and nuclear medicine imaging systems. Moreover, quality control protocols and examples of clinical and laboratory applications will be discussed.
- **Biomedical instrumentation:** This course will introduce the basic principles of biomedical instrumentation, focusing on programmable microprocessors, in vitro instrumentation, medical imaging technologies, and vital function monitoring technologies. Neuromechanics and implants will also be discussed. Laboratory experiments with microprocessors will take place in the electronics room of the Medical Instrumentation lab room at the premises of the Department of Biomedical Engineering.
- **The Industry of biomedical engineering II:** This course is a continuation of the course 'The industry of biomedical engineering I', and will include special seminars by professionals in the field of biomedical engineering that will simulate real-world scenarios such as maintenance, repair, and quality control of biomedical equipment (service engineering), sales and marketing of biomedical products (sales and marketing), special applications for training of

users in handling of specialized biomedical equipment (application specialist), research and development and the real-world conditions of the labor market.

- **Emergency Medicine:** This course will introduce the basic principles and the technologies used in Emergency Medicine Services-EMS. Moreover, the course will cover the relevant European Standards, the relative Safety Procedures and Protocols, and the main means of EMS-Transport (land, sea, air).
- **Control systems in biomedical engineering:** This course will introduce the basic principles of control systems, with a focus on mathematical modeling, human body control systems, and applications in biomedical engineering. The course will include laboratory simulation of control systems using microprocessors.
- **Bioinformatics:** This course will introduce the basic principles of bioinformatics, relative algorithms and techniques, restriction maps, motif finding, genome rearrangement, sequence alignment, phylogenetic trees, and biological databases.
- **Human-machine interaction in health care services:** This course will introduce the basic principles of human-machine interaction in health care services, computer detection of non-pathological conditions, such as emotional state, pain, sleep quality, etc., the computer detection of pathological conditions, such as Parkinson's, Alzheimer's, Schizophrenia, depression, COVID-19, etc., and the design and evaluation of human-machine interaction systems in health care services.
- **Machine learning in medicine and biology:** This course will introduce the basic principles of machine learning, focusing on statistical methodologies, supervised and non-supervised learning, and deep learning with applications in medicine and biology. Laboratory experiments with software development will take place in the computer room of the Medical Digital Image and Signal Processing (MEDISP) lab computer room at the premises of the Department of Biomedical Engineering.
- **Science, technology, society: Biomedical engineering, social extensions, ethics:** The first part of the course will examine industrial developments and the corresponding scientific and technological developments, the role of technologists and engineers, the important milestones in the development of technology in health science, the historical background in the development of hospitals and related technologies, the formation of scientific and technical specialties in health sciences, the emergence of biomedical engineering and medical physics, the biomedical industry, social and philosophical extensions. In the course's 2nd part, issues of ethics and bioethics and the necessity of ethics in research in biomedical engineering will be examined.

3rd Semester

- **Diploma Thesis:** The diploma thesis encourages and develops the student's ability to collect, understand, analyze, evaluate, and interpret scientific data. In particular, the diploma thesis aims at the following:
 - critical review of the relevant literature (and reference to the relevant discussion) around the chosen topic,
 - design a research plan/experiment,
 - collection of scientific data,
 - implementation of the research plan/experiment,
 - production of reliable and interpretable results,
 - discussion, evaluation, and interpretation of results (or conclusions),
 - contribution to the scientific dialogue

8. EXAMINATIONS

Course examinations may encompass a variety of formats, including written, oral, multiple-choice questionnaires, and the completion of one or more personal and group assignments. The evaluation and examination methods for each course are determined by the course coordinator. These methods are verbally announced during the initial lecture of the course and are also made available on the eclass website dedicated to the course. Examinations for each course are conducted within one week following its completion. Additionally, all courses can be re-examined during the September re-examination period, which lasts for a maximum of two weeks. To be eligible for the re-examination, students must have attended at least 80% of the teaching hours or educational activities of the course.

Grades for examinations are measured on a scale of 0 to 10, with increments of 0.1. Passing grades are considered to be equal to or greater than 5.0 (with 5.0 being the minimum passing grade). The responsibility for the organization of examinations lies with the **Steering Committee**, while the course coordinator is responsible for assigning course grades. Changes to grades are only permitted in cases of grading errors. Students can request access to their examination sheets from the course coordinator within 15 days following the examination date. After this period, the examination sheets are disposed of.

If a student fails an examination (grade < 5.0), they have two options: a) they may retake the examination during the September re-examination period, or b) they can participate in the examination of the course in the subsequent academic year. However, if a student fails the examination for a course three times, they may be granted a final opportunity upon submitting a valid request to the **Department Assembly**. The **Department Assembly** will reach a decision and appoints a three-member committee consisting of experts in the relevant scientific field. This committee will be responsible for organizing the final examination specifically for the student in question and for the corresponding course. Failing this final examination will result in the permanent termination of the student from the MSc program's student registry.

9. DIPLOMA THESIS

At the start of each academic year, the teaching staff of the MSc program proposes a list of potential titles for diploma theses. These titles are then published on the official website of the MSc Program. At the end of the 2nd semester, students can request to meet with a preferred teaching staff member to discuss the possibility of collaborating on their diploma thesis. Together, the student and the chosen teacher define the precise title of the diploma thesis and create a research protocol to guide their work.

During the last 15 days of the 2nd semester, the student submits an application to the Secretariat of the MSc Program for diploma thesis assignment. The application includes the proposed title of the diploma thesis, the corresponding research protocol, and the suggested supervisor. The **Department Assembly**, in collaboration with the supervisor, approves the application and appoints three members for the examination committee.

If the Department Assembly rejects the application, the student can reapply using the same process. If the application is rejected for a second time, the **Department Assembly** assigns a

diploma thesis title and a supervisor to the student. The supervisor must be a member of the teaching staff of the MSc Program and hold a Ph.D. degree. The examination committee for the diploma thesis can consist of any member of the teaching staff from the MSc Program or an external scientist with a Ph.D. degree and relevant research experience related to the thesis subject.

The defense of the thesis occurs at the end of the 3rd semester on specific dates. These dates are announced on the official website of the MSc Program by the **Steering Committee** at least one month prior to the defense dates. In exceptional circumstances such as force majeure or serious illness, students may request alternative defense dates. The **Steering Committee** assesses the reasons provided by the candidates and makes decisions accordingly.

The diploma thesis is required to be written in English, following the instructions provided on the diploma thesis template announced on the official website of the MSc program. The thesis is graded on a scale of zero to ten (0 - 10), similar to other courses. The minimum passing grade is "five" (5.0).

10. REQUIREMENTS FOR SUCCESSFUL COMPLETION OF STUDIES

For the successful completion of the program, the student is required to:

1st semester: a/ pass the examinations of all required courses (15 ECTS) and b/ pass the examinations of three elective courses (15 ECTS), thus, collect in total 30 ECTS in the 1st semester

2nd semester: a/ pass the examinations of all required courses (15 ECTS) and b/ pass the examinations of three elective courses (15 ECTS), thus, collect in total 30 ECTS in the 2nd semester

3rd semester: complete and successfully defend the Diploma Thesis (30 ECTS), thus, collect in total 30 ECTS in the 3rd semester

11. DIPLOMA AWARD

The final grade of the diploma (Diploma Grade - **DG**) is calculated as follows:

$$DG = \frac{\sum_i^N G_i \times U_i}{90}$$

where **G** is the grade of each course **i**, **U** corresponds to the ECTS units of the course **i**, $i=1:N$, **N** is the total number of courses.

The **Department Assembly** approves the list of students that have successfully completed the program. These students are awarded the **Postgraduate Diploma** entitled "**Biomedical Engineering and Technology**" during a special ceremony organized by the UniWA before the Rector's Authorities and the President, or his / her Deputy, of the Department of Biomedical Engineering. Until the official ceremony, the student may ask the Program's Secretariat for a certificate of study completion.

12. ADMINISTRATIVE BODIES AND COMMITTEES

The administrative bodies of the Postgraduate Program by Law 4485/2017 are:

1. The Senate of the University of West Attica
2. The Postgraduate Studies Committee of the University of West Attica
3. The Department Assembly
4. The Steering Committee
5. The Director
6. The Postgraduate Students Evaluation and Selection Committee
7. The Scientific Advisory Committee

12.1 The Senate

The Senate of UniWA is the competent body for the issues of academic, administrative, organizational, and financial character of the Postgraduate Program.

12.2 The Committee for Postgraduate Studies of UNIWA

The Committee for Postgraduate Studies consists of the Vice-Rector for Academic Affairs, who acts as President, and the Deans of UniWA, as Members. The Committee examines the suggestions for the establishment of new Postgraduate Programs according to par. 5, art. 32, Law 4485 / 2017.

12.3 The Department Assembly

The Assembly of the Department of Biomedical Engineering is responsible for the following:

1. suggests to the Senate, through the Postgraduate Studies Committee, the necessity of establishing of new Postgraduate Programs, according to art. 32, Law 4485 / 17
2. appoints the Members of the Steering Committee
3. approves the suggestions and proposals of the Steering Committee regarding the operation of the Postgraduate Program
4. distributes the teaching work among the teachers of the Postgraduate Program
5. sets up selection/examination committees for postgraduate students
6. notes the successful completion of the study for the award of the Postgraduate Diploma
7. exercises any other responsibility provided by the provisions of Law 4485/201

12.4 The Steering Committee

The oversight and coordination of the Postgraduate Program are entrusted to the Steering Committee. Comprising five (5) members from the Department of Biomedical Engineering, including the Program Coordinator, the Steering Committee is responsible for ensuring the smooth functioning of the program. The Department Assembly appoints the members of the Steering Committee for a two-year term, which can be renewed. At the conclusion of each term, the Coordinator prepares a comprehensive report on the Postgraduate Program's research, educational activities, and other endeavors.

The President of the Steering Committee, who also serves as the Program Coordinator, holds the position for a maximum of two terms, with the possibility of renewal once. Alongside their duties, the Coordinator oversees the day-to-day operations of the Postgraduate Program. The Steering Committee carries out the following responsibilities:

- It proposes the allocation of educational responsibilities among the teachers in the Postgraduate Program to the Department Assembly.
- It suggests reforms to the program's curriculum.
- It appoints the supervisor and the members of the three-member examination committee for the diploma thesis.
- It addresses student matters, such as requests for study duration extension, study termination, and other related issues.

12.5 The Coordinator of the MSc Program and his Deputy

The Coordinator of the MSc Program is a Professor or Associate Professor, of the same or related subject as the scientific subject of the MSc Program. In addition, he/she is a member and President of the Steering Committee, appointed together with his / her Deputy, by decision of the Department Assembly for a two-year term. The Coordinator of the MSc Program suggests any issue related to its effective operation. The Coordinator may not have more than two (2) consecutive terms. He/she has the following responsibilities

1. Convenes a meeting of the Steering Committee
2. Prepares the agenda of these meetings, taking into account suggestions of the members and bodies of the Postgraduate Program
3. Appoints elections for the replacement of committee members due to vacancy
4. He is responsible for drafting the budget and report of the Program, which he submits to the Department Assembly for approval
5. He is responsible for monitoring the implementation of the budget and for issuing payment orders for the relevant expenses
6. Under the responsibility of the outgoing Coordinator, after the end of the term of the Steering Committee, a detailed report is prepared on the research and educational work of the MSc Program, as well as on its other activities, to upgrade studies, better utilization of human resources, optimization of the existing infrastructure and the socially beneficial use of the available resources of the MSc Program. The report is submitted to the Department Assembly
7. The Coordinator of the MSc Program, as the Scientific Officer of the respective project, issues and signs the payment orders of the relevant expenses and co-signs the project assignment contracts, according to the approved budget. In addition, as the Scientific Officer, he/she is responsible for the proper implementation and certification of the MSc Program and the appropriateness of the costs associated with its execution and monitoring of its financial object. The Deputy Coordinator of the MSc Program is a Professor or Associate Professor and fulfills the duties of the Coordinator in case of his absence.

12.6 Evaluation and Selection Committee

The Evaluation and Selection Committee consists of three (3) members of the Department of Biomedical Engineering. The following are the work of the Committee:

1. Evaluation of all the submitted application documents, by the current Legislation and the academic criteria that may have been set by paragraph 2, art. 34, Law 4485/17. (The control of the completeness of the application documents is carried out by the Secretariat of the MSc Program and of the Department of Biomedical Engineering)

2. Conducting written language proficiency exams for admission to the MSc Program (when required)
3. Conducting personal interviews with the candidates

The Department Assembly may set up additional Committees when necessary. All proposals or decisions of the Committees are approved by the Department Assembly.

12.7 Scientific Advisory Committee

The Scientific Advisory Committee is responsible for the external academic evaluation of the Postgraduate Program. The five (5) Members of the Committee are Faculty Members of other Higher Educational Institutes or researchers from research centers. The sixth member is a postgraduate student.

The term of office of the members is five years, with the possibility of renewal, except for the student, whose term of office is one year. The capacity of the President of the Scientific Advisory Committee, the manner of selection of the postgraduate student, as well as any more specific issues concerning the composition, operation, and administrative support of the Committee, are determined by a decision of the Senate of UniWA.

12.8 Administrative Support

The Postgraduate Program "Biomedical Engineering and Technology", is supported by the Secretariat of the Program located in UniWA, which has the task of administrative support of the MSc Program, such as the preparation of the process of admission of candidates, the monitoring of the financial data, the secretarial support of the students, the teaching staff and the administrative bodies of the MSc course, etc.

13. TEACHING STAFF

The teaching staff of the MSc program comprises high-quality **University Professors**, experienced **Researchers** holding a Ph.D. degree, and active **Biomedical Engineers** according to the provisions of the Greek legislation (par. 1, art. 36, Law 4485 / 2017 and art. 242, Law 4610 / 2019). The exact names and affiliations of the Program's teaching staff members are announced on the official website.

14. GENERAL OBLIGATIONS AND RIGHTS OF POSTGRADUATE STUDENTS

- Each semester, postgraduate students are required to renew their registration by submitting an application within the specified deadlines set by the Secretariat of the MSc Program. Failure to renew registration or attend courses for two (2) consecutive semesters results in the loss of postgraduate student status, and the student's name is removed from the student registers of the MSc Program.
- Postgraduate students are entitled to all the rights and benefits afforded to undergraduate students, except for the provision of free hard-copy textbooks.

- Postgraduate students are encouraged to actively participate in and attend research group seminars, scientific discussions, laboratory visits, conferences/workshops, lectures, and other scientific events related to the subject matter of the MSc program.
- Postgraduate students have the opportunity to seek external funding for their studies from various public and private institutions or research institutes.
- Postgraduate students may receive financial support through funded research programs in which they actively participate. The specific details regarding financial coverage are determined by a decision of the Steering Committee.
- Postgraduate students have the option to take part in student exchange programs (e.g., Erasmus+) offered by UniWA or other research programs provided by foreign universities. These opportunities are facilitated through bilateral agreements between the Department of Biomedical Engineering and affiliated institutions.

15. EVALUATION OF THE MSC PROGRAM

At the conclusion of each semester, students participate in the evaluation of the MSc program. The evaluation process utilizes a dedicated online form on a platform that guarantees the anonymity of the students. The questionnaire encompasses a comprehensive assessment of the courses/modules within the MSc Program, focusing on aspects such as content, teaching methods, educational materials, and more. Additionally, the questionnaire includes an evaluation of the instructors, considering their expertise, effectiveness in imparting knowledge to students, preparation, utilization of current literature, responsiveness to questions, and timely assessment of assignments/written exams, among other factors.

Evaluation results are summarized in descriptive tables by the Program Secretariat, informing the MSc program Coordinator. The **Coordinator** discusses the results with the **Steering Committee**, which decides on any necessary actions that should be taken to improve the overall educational process of the MSc program.

16. TUITION FEES

Tuition fees for the MSc program comprise, in total, 1200 €. Payments can be made in installments as follows:

1st installment **400 €**: beginning of Semester. The 1st installment is required to complete the student's registration to the MSc Program.

2nd installment **400 €**: until the end of November.

3rd installment **400 €**: until the end of December.

Tuition fees are paid to the Special Account for Research Grants (ELKE) of UniWA. They cover all costs and expenses for the operation of the MSc program.

In case the student has not paid the amount of the installment within the above specified periods, he /she will be sent an official written notice by the Secretariat of the MSc Program, to the e-mail address stated in his /her application, where he /she will be informed about the pending payment. If following one month from the date of sending the written notice the student has not completed

the payment, then the Secretariat of the MSc Program informs the **Coordinator** of the Program, who brings the issue to the **Department Assembly** to decide for the termination of the student from the student registry of the MSc Program.

According to the Greek national legislation (par. 2, art. 35, Law 4485 / 2017), the MSc program offers tuition fee waivers to 30% of all enrolled students. The tuition-free waiver depends on the student's personal income and/or his/her family income.

In case of cancellation from the program, regardless of the reason, the already paid tuition fees are not refundable.

17. SCHOLARSHIPS AND AWARDS

The MSc Program may provide several scholarships based on academic criteria to full-time students, by a decision of the **Department Assembly**, which determines the number of scholarships, the amount of funding for each scholarship, the inclusion criteria, the necessary supporting documents, the evaluation criteria, the application process, and the obligations and the rights of scholarship holders (par. 4, art. 35, Law 4485 / 2017).

18. STUDY ADVISOR

For each student, a study advisor is appointed by the **Department Assembly**, following the relevant proposal of the **Steering Committee**. The study advisor is a member of the Department of Biomedical Engineering. The study advisor monitors the student's progress, provides specific information about the MSc program, discusses with the student his/her plans for his/her academic and professional development, and advises him/her to improve his/her work about the requirements of the MSc Program, and may bring issues concerning the student to the attention of the **Steering Committee**. The study advisor does not necessarily supervise the student's diploma thesis.

19. PLAGIARISM

It is necessary for the student to appropriately acknowledge whether they have utilized the work and ideas of others. Engaging in plagiarism, which includes copying someone else's work or using it without proper attribution, whether it is published or not, is considered a grave form of academic misconduct. If any documentation material is copied without appropriate referencing, it can lead to the Steering Committee's decision to terminate the student's studies in the Program. However, prior to the decision, the student will be given an opportunity to express their perspectives on the matter, either orally or in writing. Any instances of misconduct or breaches of academic ethics are referred to the **Department Assembly**, which determines the appropriate course of action. Violations may encompass cheating during written exams, plagiarism, or any other breach of intellectual property provisions by the student while preparing course assignments and/or the Diploma Thesis.