HELLENIC REPUBLIC
National and Kapodistrian
University of Athens
SCHOOL OF SCIENCE
DEPARTMENT OF DIGITAL INDUSTRY TECHNOLOGIES
MSc "Robotics and Industrial Control"

A11. Regulations governing the Postgraduate Program

Department of Digital Industry Technologies

MSc "Robotics and Industrial Control"

March 2024

Regulations governing the Postgraduate Program in the Department of Digital Industry Technologies within the School of Sciences at the National and Kapodistrian University of Athens, titled "MSc in Robotics and Industrial Control."

ARTICLE 1. OBJECT-PURPOSE

1.1   The MSc in Robotics and Industrial Control is designed to initiate postgraduate studies and foster research growth in the dynamic and significant scientific, social, and economic domain of Robotics and Industrial Control. The specific objectives of this proposed Postgraduate Program include:

- Establishing postgraduate studies and fostering research expansion in the rapidly evolving field of Robotics and Industrial Control, acknowledged for its scientific, economic, and social significance.
- In-depth exploration of Industry 4.0 technologies, integrating production methods with advanced technologies in Industrial Control and Robotics, including Cyber-Physical Systems.
- Providing high-level training and specialization for postgraduate students with backgrounds in natural and technological sciences, equipping them with practical and theoretical knowledge to address complex issues in Industrial Control and Robotics. This includes designing and implementing appropriate technological solutions and engaging in relevant research topics.
- Developing experts capable of effectively handling various applications in robotics and automatic control, utilizing contemporary techniques and cutting-edge technologies, particularly emphasizing industry and production units (procedures and processes). Additionally, fostering the progress of research and its practical applications in the aforementioned fields.
- Training personnel from the Greek industrial sector, and beyond, in two pivotal technologies essential for the digital modernization of industry, namely Robotics and Industrial Control.
- Developing skills related to problem analysis in the MSc subject area and evaluating technology and existing technical solutions within the Industry 4.0 framework.
- Gaining practical experience in integrating hardware and software to produce technical solutions in the broader field of robotics and automatic control systems.

1.2 The successful completion of the Postgraduate Program results in the conferment of a Postgraduate Diploma titled "MSc in Robotics and Industrial Control," in accordance with the prescribed curriculum.

1.3 These titles are granted by the Department of Digital Industry Technologies at the National and Kapodistrian University of Athens.

1.4 The Postgraduate Program imparts specific learning outcomes and awards qualifications upon the successful completion of the program.

The proposed Postgraduate Program aims to provide specialized scientific knowledge and serve as a foundation for initiating research endeavors in the following distinct areas:

- Research, design, and implementation of advanced Industrial Control systems using suitable digital platforms.

- Research, development, testing, and application of advanced robotic systems.
- Development, implementation, and application of algorithms in Industrial Control and Robotics to address challenges encountered in industrial and other production units.
- Design and administration of networked Industrial Control and Robotics systems, encompassing the Industrial Internet of Things (IIOT).
- Design and creation of interfaces for industrial human-machine interaction, facilitating control, error diagnosis, and execution of robotic projects.
- Utilization of Artificial Intelligence and Machine Learning in the realms of Robotics and Industrial Control.
- Control and mitigation of attacks on Industrial Cyberphysical Systems.
- Implementation of Robotic Vision Systems.

ARTICLE 2. STRUCTURE AND BODIES OF THE MSC

The authorized entities responsible for overseeing the implementation of the Postgraduate Program in accordance with law 4957/2022 are as follows:

2.1 At the institutional level, the competent bodies include the Committee on Postgraduate Studies and the Senate.

2.2 At the Departmental level, the competent bodies responsible for the Postgraduate Program are:

2.2.1 Assembly of the Department of Digital Industry Technologies

The Assembly of the Department of Digital Industry Technologies holds the following responsibilities:

a) recommends to the Senate, through the Committee on Postgraduate Studies, the necessity of establishing/modifying the Postgraduate Program, as well as extending the duration of the Postgraduate Program.

b) appoints the Director and members of the Coordinating Committee of the Postgraduate Program.

c) establishes Committees to evaluate applications from prospective postgraduate students, approving their enrollment in the Postgraduate Program.

d) assigns teaching responsibilities among the faculty members of the Postgraduate Program and may assign auxiliary teaching tasks to doctoral candidates of the Department, supervised by the instructor of the Postgraduate Program.

e) establishes examination committees for evaluating postgraduate students' dissertations and appoints a supervisor for each thesis.

f) certifies the successful completion of studies and awards the Postgraduate Diploma.

g) approves the report of the Postgraduate Program based on the Coordinating Committee's recommendation (C.C.).

h) assigns postgraduate students the responsibility of auxiliary teaching work in first-cycle study programs of the Department.

i) exercises any other lawful competence.

Upon the decision of the Assembly of the Department, responsibilities specified in points c) and e) may be transferred to the Coordinating Committee of the Postgraduate Program.

2.2.2 The Coordinating Committee (C.C.)

The Coordinating Committee (C.C.) comprises the Director of the Postgraduate Program and four (4) faculty members from the Department, including emeritus professors specializing in a field relevant to that of the Postgraduate Program, who actively engage in teaching within the program. The C.C. is tasked with overseeing and coordinating the program's activities, specifically:

a) prepares the initial annual budget of the Postgraduate Program and its amendments, if the Postgraduate Program has resources, and recommends its approval to the Research Committee of the Special Account for Research Funds,

b) prepares the report of the program and recommends its approval to the Assembly of the Department,

c) approves the execution of expenditures for the Postgraduate Program.

d) approves the granting of scholarships, contributory or not, in accordance with the provisions of the decision establishing the Postgraduate Program and the Regulation of postgraduate and doctoral studies,

e) recommends to the Assembly of the Department the distribution of teaching work, as well as the assignment of teaching work,

f) recommends to the Assembly of the Department the invitation of Visiting Professors to meet the teaching needs of the Postgraduate Program,

g) prepares a plan for the modification of the curriculum, which it submits to the Assembly of the Department,

h) recommends to the Assembly of the Department the redistribution of courses between academic semesters, as well as issues related to the qualitative upgrading of the curriculum.

2.2.3 The Director of the Postgraduate Program

The Director of the Postgraduate Program is a faculty member, preferably holding the rank of professor or associate professor, appointed by the Assembly for a renewable two-year term without limitation.

The Director assumes the following responsibilities:

(a) chairs the Steering Committee, formulates its agenda, and convenes meetings.

(b) presents matters related to the organization and functioning of the Postgraduate Program to the Assembly.

(c) proposes issues concerning the effective operation of the Postgraduate Program to both the internal bodies of the program and the Higher Education Institution.

(d) serves as the Scientific Coordinator of the program and executes corresponding responsibilities.

(e) Monitors the implementation of decisions made by the bodies of the Postgraduate Program, adheres to the Internal Regulation of postgraduate and doctoral programs, and oversees the budget implementation of the Postgraduate Program.

(f) Signs all outgoing correspondence related to the Postgraduate Program on behalf of the Department of Digital Industry Technologies, acknowledges and categorizes incoming correspondence, and establishes committees for studying or processing specific program-related matters.

(g) signs, on behalf of the Department of Digital Industry Technologies, all outgoing correspondence concerning the Postgraduate Program, systematically records and categorizes all incoming correspondence pertaining to the Postgraduate Program. Supervises the smooth operation of the Secretariat of the Postgraduate Program. Establishes committees for the study or processing of specific issues of the Postgraduate Program.

h) executes, in accordance with a decision from the Assembly, all necessary procedures for initiating a call for expressions of interest in the admission of students to the Postgraduate Program. Determines and communicates the schedule for interviews. Additionally, offers guidance to the Coordinating Committee on budgetary formulation and the documentation of program revenues and expenses. Oversees budget execution and offers counsel to the Coordinating Committee on financial considerations concerning the MSc program.

(j) makes decisions and takes actions authorized by the Assembly of the Department or the Coordinating Committee that serve the needs of the Postgraduate Program.

(k) oversees the comprehensive functioning of postgraduate studies, including the preparation of the timetable and academic calendar of the Postgraduate Program.

(l) formulate documentation intended for use by students, faculty, and the Secretariat of the Postgraduate Program in various activities such as applications, certificates, and other related processes.

(m) issues instructions for the compilation of dissertations.

(n) decides on any student matters not under the jurisdiction of other bodies, in compliance with relevant provisions and regulations.

(o) exercises any other competence defined in the decision establishing the Postgraduate Program.

The Director of the Postgraduate Program, along with the members of the Postgraduate Program, are ineligible for remuneration or any form of compensation for the execution of their assigned responsibilities associated with the performance of their duties.

2.3 Administrative Support for the Postgraduate Program

a) The Secretariat of the Department of Digital Industry Technologies at the National and Kapodistrian University of Athens assumes the responsibility for providing secretarial and administrative support for the Postgraduate Program.

b) The Secretary of the Department designates an employee or employees, depending on the number of Postgraduate Programs and workload, to oversee the responsibilities related to the Postgraduate Program.

c) If the Postgraduate Program possesses its own resources, it has the option, in accordance with existing legislation, to hire external collaborators for secretarial and administrative support. These external collaborators will be under the supervision of the Department's Secretariat.

ARTICLE 3. CATEGORIES AND NUMBER OF ADMISSIONS

3.1 Admission to the Postgraduate Program is granted to the following categories:
a) graduates from Departments of Digital Industry Technologies, Informatics, Physics, Mathematics, Aerospace Science, and Technology within universities or university departments. These departments should be closely associated with the aforementioned

scientific subjects, either within domestic academic institutions or equivalent recognized institutions abroad.

b) Graduates or degree holders in Mechanical Engineering, Electrical Engineers, and Computer Engineers, Chemical Engineers, Computer Engineers, and Industrial Design and Production Engineers, who have completed their studies at the Departments of Polytechnic Schools or Schools of Engineering at Universities. They may also be graduates of relevant departments at recognized institutions either domestically or abroad.

c) Graduates from Technological Educational Institutes in Departments of Automation, Mechanical Engineering, Electrical Engineering, Aircraft Technology, Informatics, or Technological Educational Institutes Departments related to the aforementioned scientific subjects within national or equivalent recognized institutions abroad.

3.2 The maximum allowable number of students admitted to the Postgraduate Program is capped at forty (40). This ceiling is determined based on factors such as the number of Postgraduate Program faculty members, the student-faculty ratio, the material and technical infrastructure, classrooms, and the anticipated employability of graduates in the labor market.

3.3 In addition to the regular admissions, one (1) member each from the categories: Special Educational Staff, special Laboratory Teaching Staff and Special Technical Laboratory Staff, is admitted annually, contingent upon their work at the University being relevant to the subject matter of the Postgraduate Program.

3.4 Scholars from the State Scholarships Foundation and foreign scholars sponsored by the Greek state, specializing in the same or related subjects as the Postgraduate Program, are exempt from the admission evaluation process.

ARTICLE 4: STUDENT SELECTION PROCEDURE

4.1 The process for selecting students adheres to existing legislation, the Regulations of Postgraduate and Doctoral Studies at NKUA, and the stipulations outlined in the Regulations of the Postgraduate Program.

4.2 In the timeframe of April to May, as determined by the Department's Assembly, an announcement regarding the admission of postgraduate students to the Postgraduate Program is disseminated and published on both the Department's website and the NKUA website. Prospective applicants are required to submit their relevant applications, including essential supporting documents, to the Secretariat of the Postgraduate Program within a specified deadline outlined in the announcement. The deadline may be subject to extension at the discretion of the Department's Assembly. Additionally, the Assembly holds the authority to issue the proclamation beyond the April-May period based on a well-founded decision.

4.3 The Department's Assembly delegates the responsibility for the admissions selection process to the Coordinating Committee.

4.4 The requisite supporting documents encompass:

- Application form detailing reasons for selection and intent to enroll in the Postgraduate Program.
- Detailed Curriculum Vitae (CV).
- Submission of a copy of the academic degree or certificate of completed studies is required (alternatively, a sworn declaration can be provided, including pending course grades).
- Official transcript of records from the undergraduate studies.
- Printed or electronic copy of the thesis or diploma thesis (if applicable).
- Copies of any additional degrees, master's, and doctoral degrees from universities or

equivalent foreign institutions.
- Publications in scientific journals or conference proceedings, if available.
- Certificates of scholarships and awards.
- Up to two letters of recommendation.
- English language proficiency certificate of at least level B2, recognized as per current legislation and certified by the issuing authority or a legal professional (or adequate knowledge of the English language, certified by the Secretariat of the Postgraduate Program).
- Evidence of professional or research activity, if applicable.
- Greek language proficiency certificate or adequate knowledge of the Greek language, certified by the Secretariat of the Postgraduate Program, for foreign candidates intending to enroll in the Postgraduate Program in Greek.
- Additional information at the candidate's discretion, such as evidence of professional or research activity related to the subject of the Postgraduate Program.
- Photocopy of both sides of the identity card.
- Recent photograph.
- Recognition of foreign academic qualifications.

4.5 For students hailing from foreign institutions without a DOATAP-recognized academic degree certificate, the following protocol is observed:
The Department's Assembly directs the Coordinating Committee (C.C.) to ascertain the recognition status of a foreign institution or a specific type of title from a foreign institution.
The Coordinating Committee verifies whether the foreign institution or the type of title from a foreign institution is listed in the pertinent Register of foreign institutions, which is maintained and regularly updated by DOATAP.
If the foreign institution is part of the institutions listed in Article 307 of Law 4957/2022, the candidate is obligated to furnish a certificate of the place of study. This certificate is issued and sent by the foreign university. However, if the Greek territory is confirmed as the place of study or a portion thereof, the degree will not be recognized, unless the studies completed on the Greek territory are within a public Higher Education Institution.

4.6 The assessment of candidates and the subsequent admission selection process rely on the following criteria, utilizing a merit point (M.P.) scale ranging from 0 to 100:

1. Degree Grade: The candidate's degree grade, denoted as 'B', contributes merit points calculated as (B-5) x 2. The maximum attainable merit points for this criterion are ten (10). In the case of multiple degrees, the one most relevant to the subject of the Postgraduate Program is considered. If multiple degrees are equally relevant, the degree with the highest grade is taken into account.

2. Undergraduate Course Grades and Relevant Diploma/Dissertation: For each course or diploma/dissertation pertinent to the Postgraduate Program, where the candidate has achieved a grade of seven or higher, two points are awarded. The maximum merit points for this category are twenty (20).

3. Relevance of University Degree and Candidate's Knowledge to MSc Subject: Merit points, up to twenty (20), are assigned based on the relevance of the candidate's degree and presumed knowledge, as indicated in the application file.

4. Research or Professional Activity in a Related Discipline: Four (4) merit points are awarded per certified year of professional experience or research work (participation in a research program or employment in a research center) in a subject related to the

Postgraduate Program. The maximum number of merit points for this criterion is twenty (20).

5. Publications in Subjects Related to MSc: Merit points are allocated as follows: 4 merit points for each publication in an international scientific journal, 3 merit points for each publication in an international scientific conference with full-text review, and 1 merit point for each publication in an international scientific conference with abstract review or in a Greek conference. The maximum merit points attainable are twenty (20).

6. Performance during the Interview: The Coordinating Committee assesses the candidate's interest in the Postgraduate Program, commitment to completing studies, and overall proficiency in the subject. The maximum merit points for this criterion are ten (10) merit points.

A prerequisite for eligibility in the selection process is proficiency in the English language, which can be demonstrated through one of the following qualifications:

i) Possession of one of the following degrees: (a) State Certificate of Language Proficiency for the English Language at a minimum level of B2, or any other English language certificate recognized by the Greek State as equivalent to at least a B2 level. Certificates accepted by ASEP (Supreme Council for Civil Personnel Selection) as B2 and above are also valid. Examples include the FIRST CERTIFICATE IN ENGLISH from the University of Cambridge and the EXAMINATION FOR THE CERTIFICATE OF COMPETENCY IN ENGLISH from the University of Michigan. (b) A degree from an English-speaking University or a degree in English Literature. ii) Successful completion of an English Technical Terminology course during undergraduate studies at a university, specifically in subjects related to the theme of the Postgraduate Program. iii) Successful participation in examinations organized by the Coordinating Committee in the area of English Technical Terminology relevant to the subjects covered in the M.Sc. program.

The interview process for candidates and the English technical terminology examination may be conducted remotely, as determined by the Coordinating Committee, utilizing appropriate technical means in accordance with the provisions outlined in the Special Regulation for the Organization and Implementation of Distance Education Methods for the Postgraduate Program.

Upon considering the overall criteria, the Coordinating Committee formulates an assessment table for candidate students, delineating their scores in individual criteria as well as their final scores. This table is organized in descending order of success and is presented to the Assembly of the Department for approval.

Successful candidates are required to register at the Secretariat of the Postgraduate Program within thirty (30) days from the Department's Assembly decision. In the event of a tie (rounded to the nearest whole unit on the 100 scale), tied candidates are admitted at a rate not exceeding 10% of the maximum admissions.

Should one or more students fail to register, the next candidates in the ranking, as per the approved evaluation table, will be invited to enroll in the Postgraduate Program.

In the circumstance where the Assembly delegates responsibilities to the Coordinating Committee (C.C.) for the evaluation of applications and the approval of enrollment decisions for candidate postgraduate students, all the duties specified in this article for the Department's Assembly are assumed by the Coordinating Committee.

ARTICLE 5. DURATION OF STUDY

5.1 The Postgraduate Program, leading to the attainment of a Postgraduate Diploma, spans a duration of three (3) academic semesters, encompassing the time dedicated to the preparation of a dissertation should the student opt for this scholarly pursuit.

5.2 The option for part-time enrollment is available, subject to a reasoned request submitted by the student and subsequent approval by the Department's Assembly. Eligibility for part-time study is extended to the following categories:
a) Students who can substantiate their engagement in employment for a minimum of twenty (20) hours per week.
b) Students with documented disabilities and specific educational needs.
c) Students engaged in athletic pursuits, affiliated with sports clubs recorded in the electronic register mandated by Article 142 of Law 4714/2020 (A' 148). This register is maintained at the General Secretariat of Sports, and admission is subject to the conditions outlined below:

(ca) For the years they achieve a ranking from 1st to 8th place in Panhellenic championships of individual sports with the participation of at least twelve (12) athletes and eight (8) clubs or compete in teams of two (2) higher categories in team sports, or participate as members of national teams in pan-European championships, world championships, or other international competitions under the Hellenic Olympic Committee, or
(cb) If they participate at least once, during their studies, in the study program for which they apply for part-time study, in the Olympic, Paralympic Games, and Olympic Games for the Deaf. Students in this sub-category may enroll as part-time students, following their application's approval by the Administrative Board of the School. The duration of part-time study does not exceed twice the duration of normal full-time study. The maximum duration of studies also applies in this case.

The duration of part-time study is limited to twice the duration of normal full-time study, with the maximum overall duration applicable to this category as well.

5.3 The possibility of extending the standard study duration is granted upon a reasoned request by the student, contingent upon approval by the Department's Assembly. Full-time students may apply for an extension of up to three (3) additional semesters, establishing a maximum allowable study duration of six (6) academic semesters. Similarly, part-time students may seek an extension, not exceeding four (4) semesters, thus setting the maximum period for completion of part-time studies at ten (10) academic semesters. In exceptional cases where force majeure prevents the completion of studies within these prescribed limits, the Assembly may approve an additional extension of two (2) semesters, applicable to both full-time and part-time students.

5.4 Students who have not surpassed the maximum attendance limit may, upon submission of a reasoned request to the Department's Assembly, temporarily interrupt their studies for a period not exceeding two (2) consecutive semesters. The suspension of studies is granted for compelling reasons, such as military service, illness, postpartum, or extended absence abroad.

The application for the suspension of studies must be accompanied by a well-reasoned explanation and all pertinent supporting documents issued by competent public authorities or organizations, substantiating the grounds for the requested interruption. During the period of study suspension, the student's status is temporarily halted, and engagement in any

educational activities is prohibited. The semesters during which the student's status is suspended do not contribute to the overall maximum duration of regular studies.

At least two weeks before the conclusion of the suspension period, it is mandatory for the student to re-enroll in the program to resume studies, thereby reinstating the rights and responsibilities associated with active student status. Students have the option to terminate the suspension of studies and return to the program, provided they had applied for a suspension lasting two consecutive academic semesters. The request to terminate the suspension of studies must be submitted no later than two weeks before the commencement of the second semester of suspension.

The duration of suspension or any extension to the study period is individually assessed and approved by the Coordinating Committee, which subsequently recommends its decision to the Department's Assembly.

ARTICLE 6. CURRICULUM

6.1 The commencement of the Postgraduate Program is scheduled for the winter semester of each academic year.

6.2 To earn a Postgraduate Program diploma, students are required to accumulate a total of ninety (90) credits (ECTS). Courses, conducted weekly, encompass various instructional formats, including theoretical lectures, tutorial exercises, laboratory sessions, seminars, assignments, and practical training.

6.3 The language of instruction and the language for composing the Master's Thesis are Greek, with English being used where applicable.

6.4 Throughout their studies, postgraduate students must actively participate in and successfully complete postgraduate courses, engage in research activities, produce scientific theses, and, optionally, undertake the preparation of a postgraduate dissertation.

6.5 The completion of the dissertation takes place in the third semester of studies and is credited with thirty (30) ECTS, provided that the student chooses to undertake a dissertation instead of attending courses in the third semester of studies.

6.6 The opportunity for practical training, aligned with relevant regulations, is provided to enable students to acquire essential practical experience. This training, conducted under the supervision or collaboration of a faculty member, spans eight (8) weeks, yields six (6) ECTS, and is optional, not contributing to the overall ECTS count of the program.

6.7 Courses are delivered either in person or remotely, adhering to applicable legislation and the regulations outlined in the Postgraduate Program's protocol and the Special Regulation for the Organization and Implementation of Distance Education Methods.

6.8 The Postgraduate Program consists of two semesters dedicated to coursework and one

semester designated for the postgraduate thesis or the attendance of additional courses. Each semester corresponds to 30 ECTS. Compulsory courses are scheduled for the first two semesters, and all students are obliged to successfully complete them. In the third semester, students have the option to choose between attending additional courses and preparing a Master's thesis. However, the Coordinating Committee reserves the right to decide against offering elective courses in the third semester if the enrollment falls below five (5) students for that academic term.

6.9 The indicative course program is outlined as follows:

First semester		
Compulsory Courses	**Teaching hours**	**ECTS**
Cooperative Robotic Systems	3	8
Artificial Intelligence in Industrial Control Systems	3	8
Analysis of Modern Industrial Problems for Safe and Efficient Operation using Discrete Event Systems	3	8
Advanced Robotic Vision	3	6
Total	**15**	**30**
Second semester		
Courses	**Teaching hours**	**ECTS**
Autonomous Robotic Vehicles	3	8
Development of Supervisory Controllers in Industrial Environments	3	8
Industrial Cyber-Physical Systems	3	8
Advanced Software Tools for Data Processing, Monitoring and Supervision in Industry	3	6
Total	**15**	**30**
Third semester		
Courses (choice between attending courses or preparing a postgraduate thesis)	**Teaching hours**	**ECTS**
Data Driven Industrial Control	3	8
Networked Control Systems for Robotics and Distributed Industrial Units	3	8
Interindustry Systems	3	7
Pollution Control Systems in Industry	3	7
or		
Postgraduate Thesis		30
Total		**30**
TOTAL		**90**

B. Course content/description

- **Cooperative Robotic Systems**

Kinematics, dynamics, and control of the individual participating robotic systems. Cooperative Robotic Systems (CRS) comprising heterogeneous robots. Networks of sensors and actuators. Types of graphs determining the access to the measurable data and their impact on the control actions and the system's efficient operation. Architecture of CRS: centralized systems and distributed systems. Matrix analysis of CRS graphs and Laplacian. Distributed controlled for CRS. Communications in CRS. Efficient information sharing in CRS. CRS in the framework of Industry 4.0. Cooperative multi-robot systems constraint analysis (connectivity, force constraints and position constraints). Applications to cooperative 3D printing systems. CRS towards load manipulation and machining. Robotic works and robotic tasks in CRS (Scheduling, Planning, Programming and Software tools). Control and Programming of CRS tasks in the Game Theory framework.

- **Artificial Intelligence in Industrial Control Systems**

Principles of Artificial Intelligence (AI). Aspects of Design and Software for AI systems. Directions in the application of AI to industrial control systems. Machine Learning applications for Real Time Control of industrial processes. Cognitive Approaches for Self-Optimizing Machines. Neural network control software platforms. Fuzzy control software platforms. Stepwise Safe Switching. Simulating annealing and Metaheuristic Optimization Algorithms for controller regulation. Expert industrial control systems. AI based Industrial Decision support systems. Artificial intelligence and predictive maintenance. Fault Detection and Diagnostics. AI approaches for product and process quality control and inspection. Industrial applications in Chemical Processes and Manufacturing. Simulations for AI control systems and Software Platforms.

- **Analysis of Modern Industrial problems for Safe and Efficient Operation using Discrete Event Systems**

Finite Deterministic Automata: Modelling of Processes and Electromechanical Industrial Systems, Analysis, Properties. Requirements for Safe and Efficient Operation formulated in the form of Regular Languages and Automata: Regular Languages, Properties of Regular Languages, Realization of Regular Languages. Basic Control Principles of Discrete Event Systems: Controllability of Languages, Safe and Efficient Operation of Controlled Automata, Desired Regular Languages. Simulation and Implementation with Ladder Diagrams. Emulation via Ladder Diagrams for PLCs. Applications in metal manufacturing and pharmaceutical industries.

- **Advanced Robotic Vision**

Elements of visual perception. Image Sampling and Quantization. Tools for Image Processing and Analysis. Image Formation: Camera Models, Calibration, Single view geometry, Multiple view geometry, Epipolar geometry, Feature extraction. Position and Orientation: Feature based alignment, Pose estimation. Time varying pose and trajectories. Estimation of 3-D structures from 2-D images. Visual Odometry (VO): Semi-direct VO, direct sparse odometry. Localization and Mapping: Initialization, Tracking, Mapping, geometric Simultaneous Localisation and Mapping (SLAM) formulations. Sensor combinations for 3D object reconstruction (Inertial Measurement Unit - IMU, RGB-Depth). 3D scanning systems.

Recognition and Interpretation: Object detection, Instance recognition, Category recognition, Context and Scene understanding. Robotic vision toward position, orientation, and velocity estimation. Vision guided robotic systems, trajectory planning for pick-and-place tasks. Robotic vision in Industrial Applications: cutting and shaping, inspection and sorting, palletization and primary packaging, etc. AI algorithms in robotic vision.

- **Autonomous Robotic Vehicles**

Types of Autonomous Robotic Vehicles (ARVs): Unmanned Aerial Vehicles (UAVs), Unmanned Ground Vehicles (UGVs), Unmanned Surface Vehicles (USVs) and Unmanned Underwater Vehicles (UUVs). Kinematics and dynamics of ARVs. Sensors and actuators of ARVs. Autonomous Navigation: position and course estimation, path planning techniques, Map representation. Control techniques for autonomous motion. AI and DES based methods for autonomous robotic vehicle navigation and Control. Autonomous robotic vehicle operation in unstructured environments. Robotic vehicle applications. Embedded and supervision software.

- **Development of Supervisory Controllers in Industrial Environments**

Design of Supervisory Controllers for processes described with Discrete Event Systems: General, Static, and Dynamic Supervisors. Generalized Requirements for Safe and Efficient Operation in Supervisor Design. Supervisory Control Architectures: Modular Control, Decentralized Control, Hierarchical Control, Distributed Control. Simulation and Implementation of Supervisors: Implementation of Supervisors with Ladder, Structured Text and Function Block Diagrams, Industrial SCADA Systems, Implementation of Supervisors in SCADA systems, Representative applications of development of Supervisor Controllers in Industrial Processes using advanced technologies.

- *Industrial Cyber-Physical Systems*

Integration of physical and cyber components. Distributed and Large-Scale Industrial Systems. Interconnection and interoperation of the Individual Subsystems. Data exchange among subsystems. Reconfigurable industrial processes. Flexible manufacturing processes. Modelling layers of cyber-physical systems. Layers of distributed and centralized control. Analysis of cyber-attacks in sensors, actuators, and interconnections. Attack detection and identification. Soft Sensors. Observers. Design and Development of Supervisors leading to resilient cyber-physical systems. Robustness and Reliability of industrial Cyber-Physical Systems. Interoperability and quality standards on Industrial Cyber-Physical Systems.

- *Advanced Software Tools for Data Processing, Monitoring and Supervision in Industry*

Introduction to Software Environments for Data Collection and Data Exchange between Industrial Subsystems. Interface with IIOT. Control Technologies in the Industry 4.0 Framework. Analysis and Supervision of Industrial Communications Protocols. Industrial Production Line Coordination Software. Fault Diagnosis and Predictive Maintenance Software. Development of Digital Twin for Industrial Systems. Analysis and Control using Digital Twins. Applications in Processes and Manufacturing.

- **Data Driven Industrial Control**

Model-based vs data-driven controller design. Data Collection: Sensors and IoT Devices, Big Data Infrastructure, Data storage and processing. Data Analysis and Machine learning

algorithms. Data driven methods for Process Modelling. Mixed-logical models. Adaptive controller design. Data driven Intelligent controllers. Soft sensors. Iterative feedback controller tuning. Norm based controllers. Data driven switching controller and observer schemes. Data-driven modeling and control of large-scale systems. Application of data driven modeling and control schemes to robotic systems and processes. Data driven control simulation.

- ***Networked Control Systems for Robotics and Distributed Industrial Units***

Networked control system (NCS) architectures in industrial environment and robotic configurations. Topology and functionality of distributed control systems, and multiagent control systems. Remote control through wired and wireless networks as well as Internet of Things (IoT). Exploitation of the features of cloud computing in networked control structures. Communication delay compensation and data synchronization in NCS. Stability analysis and performance of NCS in the presence of transmission delays, signal quantization, data loss, and noise. Real-time open communication protocol for acquisition and processing of real-time data. Remote system monitoring and process control. Integration and communication resource planning. SCADA in NCS. Security aspects of NCS.

- **Inter-Industry Systems**

Inter-industrial structures and production sectors. Product and Raw Material Supply Network Analysis for multi sector systems. Equilibrium/Balance Modeling and the impact of production development strategies. Leontief models and system analysis. Dynamic growth development models. Production Optimization. Growth rate control. Leontief models with environmental constraints. Leontief models with natural resources constraints. Optimal control with static and dynamic constraints. Centralized Control. Distributed Control and Competition. Nash approach in industrial cyber-physical systems. Identification of production factors and Estimation of production outputs through Observer Design. Multi-Sector and Multi-Region Inter-Industry Production Systems. Applications in single sector factories in different regions.

- **Pollution Control Systems in Industry**

Wastes from different production sectors. Industrial Symbiosis and Estate Planning. Effluent/emission trading. Pollution prevention and Waste minimization by reuse and recovery, life cycle impacts and management strategies. Industrial wastewater treatment processes: Wastewater characteristics and regulations. Physical/Chemical / Biological methods of industrial wastewater treatment. Primary, secondary, and tertiary processing. Modelling of wastewater treatment processes. Advanced control techniques for effluent regulation. Robust and data driven control approaches. Supervisory control. Data acquisition systems and soft sensors. Industrial solid wastes: Classification, Economics, Recycling. Robotic applications in solid waste management. Robotic vision-based waste sorting. Combustion Control of Refuse-derived fuel (RDF) Modelling and Control of pyrolysis systems, incineration systems and gasification systems. Technologies and Decision Support Systems for solid waste management. Air pollution: Main atmospheric pollutants and transformations, Transport and Dispersion of air pollutants, Industrial Emission Reduction, Modelling and Control. Control equipment for particulate matter and gaseous pollutant. Hazardous waste cleaning robots.

ARTICLE 7. DISTANCE LEARNING

7.1 Synchronous Distance Learning

The educational process within the Postgraduate Program can be facilitated through contemporary synchronous distance learning methods. This approach encompasses the organization of courses and educational activities suitable for remote learning, emphasizing subjects that naturally lend themselves to distance learning and do not necessitate the physical presence of students for practical or laboratory training. The responsibility for supporting the distance learning process and addressing matters related to personal data protection lies with the Digital Governance Unit of NKUA.

7.2 Asynchronous Distance Learning

The educational process may also incorporate asynchronous distance learning methods, accounting for a maximum of twenty-five percent (25%) of the credits in the Postgraduate Program. NKUA maintains an electronic platform accessible to individuals with disabilities, offering asynchronous distance learning services. Educational materials per course, including notes, presentations, exercises, indicative solutions, and recorded lectures, may be disseminated through the electronic platform, provided compliance with relevant legislation on personal data protection. All educational materials are exclusively intended for the educational use of students and are safeguarded by Law 2121/1993 (A' 25), subject to specified conditions.

ARTICLE 8. EXAMINATIONS AND EVALUATION OF POSTGRADUATE STUDENTS

8.1 The academic year is divided into two semesters, namely winter and spring, each spanning a minimum of thirteen (13) weeks of instructional periods and three (3) weeks designated for examinations. Evaluation of courses from both semesters is conducted during the September period.

8.2 In instances where a course cannot be conducted, provisions are made for a replacement. The date and time for the replacement are communicated through the Postgraduate Program's website.

8.3 Mandatory attendance is required for courses, with a maximum allowance of 30% absenteeism per course. Exceeding this limit compels the postgraduate student to retake the course in the subsequent academic year, without incurring additional tuition fees.

8.4 Evaluation of postgraduate students and their performance in program-related courses occurs at the end of each semester. Assessment methods may include written or oral examinations, continuous assignments throughout the semester, or a combination of intermediate progress exams, written tasks, and laboratory exercises. The specific evaluation approach is determined by the respective course instructor. For assessments involving written or oral examinations, procedural integrity must be maintained. The scoring system ranges from 1 to 10. Examination results are publicly disclosed by the instructor and submitted to the Postgraduate Program's Secretariat within a maximum of four (4) weeks from the conclusion of the course examination. If this timeframe is consistently exceeded by an instructor, the Director of the Postgraduate Program notifies the Department Assembly accordingly.

8.5 The determination of the contribution percentage of laboratory exercises, assignments, and seminars to the final grade of each course is undertaken individually for each course by the respective instructor. This information is communicated to students at the

commencement of the semester.

8.6 Contingent upon emergencies or circumstances categorized as force majeure, alternative assessment methodologies, such as electronically conducted written or oral examinations, may be implemented. It is imperative that the integrity of the evaluation process remains intact.

8.7 Alternative assessment approaches may be adopted for students with disabilities and special educational requirements, subject to the decision of the Board of Directors and the endorsement of the Department Head for Disabled Persons. Consideration is given to the pertinent guidelines provided by the Accessibility Unit for Students with Disabilities.

8.8 The assessment of students enrolled in second-cycle study programs facilitated through distance learning methods may be conducted via distance examinations, ensuring the preservation of the evaluation process's integrity.

8.9 In instances of illness or recuperation from a severe ailment, it is advisable for the instructor to facilitate the student in a manner deemed appropriate (e.g., remote oral examinations). During oral examinations, precautions are taken to ensure that the instructor is not in solitary presence with the examinee student.

8.10 Students who do not achieve a passing grade in a particular course are mandated to retake said course, exempt from additional tuition fees. Nevertheless, independently graded laboratory or exercise components, if deemed successful in attendance, are secured and need not be repeated.

8.11 Correction of a grade is allowed if a clear omission or cumulative error has occurred, following a written submission by the respective instructor and a decision by the Department's Assembly.

8.12 If a student fails in the same course more than three (3) times, the procedure specified by the current legislation is followed.

8.13 During the initial semester of study, the Coordinating Committee designates a Professor Advisor for each student. This committee collaborates with the student, providing guidance and support on academic matters, course selections, options, and future prospects, thereby advancing the student's academic aspirations. When a student initiates dissertation preparation, the Coordinating Committee is succeeded by the Supervising Professor of the three-member examination committee.

8.14 The written examinations are obligatory to be kept under the careful supervision of the course instructor for two (2) years. After this period, the written materials cease to be valid, and a relevant record is drafted under the responsibility of the Department's Assembly. Subsequently, they are destroyed, unless there is a pending criminal, disciplinary, or any other administrative procedure.

8.15 For the calculation of the degree grade, the weight of each course is taken into account, along with the dissertation in the study program, expressed in the number of ECTS credits. The number of ECTS credits for a course simultaneously represents the weighting factor for that course. To calculate the degree grade, each course grade is multiplied by the corresponding number of ECTS credits for that course. The sum of these individual products is then divided by the total number of ECTS credits required to obtain the degree. This calculation is expressed by the following mathematical formula:

$$\text{Defree} = \frac{\sum_{k=1}^{N} \text{BM}_k \cdot \Pi\text{M}_k}{\Sigma\Pi\text{M}}$$

where:

N = Number of courses required to obtain the corresponding qualification

ΒΜκ = Grade of the course or Master's Thesis

ΠΜκ = Credits of the course κ

ΣΠΜ = 90, the total credits for obtaining the corresponding qualification

To acquire an MSc, every postgraduate student is required to participate in and successfully complete all mandatory courses, along with the stipulated number of elective courses within the Postgraduate Program. Alternatively, the student may opt to undertake the preparation and assessment of a postgraduate dissertation, leading to the accumulation of a total of ninety (90) ECTS credits.

ARTICLE 9: COMPLETION OF MASTER'S THESIS

9.1 The assignment of the Master's Thesis (MSc) occurs once the student opts for its completion, following the successful examination of at least five out of the eight compulsory courses from the first and second semesters of the study program.

9.2 The Master's Thesis (MSc) must be individual, original, possess a research-oriented character, and be composed in accordance with the writing guidelines posted on the Postgraduate Program's website.

9.3 Upon submission of a request by the candidate, indicating the proposed title of the thesis along with a summary of the proposed work, the Department Assembly appoints the supervisor and forms a three-member examining committee for the approval of the thesis. One of the committee members is the supervisor. The language of writing for the Master's Thesis can be either English or Greek and is determined concurrently with the topic designation. The candidate's request is submitted before the end of the second semester.

9.4 The conclusive determination of the thesis title is contingent upon the student's request and the concurring opinion of the supervisor, submitted to the Coordinating Committee of the Postgraduate Program. The request must be accompanied by a succinct justification for the proposed alteration.

9.5 For the approval of the dissertation, the student must defend it before the three-member examination committee. The grading by the committee members is done on a scale of 1-10, and the final grade is the average of the evaluations of the three committee members. The supervisor is required to submit to the Secretariat the examination record of the dissertation, signed by the members of the three-member examination committee, along with their respective grades.

Postgraduate theses, upon committee approval, are obligatory for dissemination on the Institutional Repository and Digital Library "PERGAMOS" of the University of Athens. The initiation of the oath-taking ceremony for postgraduate students is intricately linked to this process and necessitates obligatory adherence for the submission of the oath application.

In instances where the postgraduate thesis fails to garner approval, the student is afforded the option of either undergoing re-examination or petitioning for a change in topic or examination committee, subject to the stipulation that the overall duration of enrollment is not exceeded.

9.6 The Supervisor and the members of the three-member examination committee for the postgraduate dissertation are appointed from the following categories that have undertaken teaching duties in the Postgraduate Program:

a) Academic Teaching and Research Staff, Special Teaching Staff, Laboratory Teaching Staff, and Special Technical Laboratory Staff of the Department of Digital Industry Technologies or other Departments of the University of Athens or other Higher Education Institutions or Higher Military Education Institutions, with supplementary commitments beyond their statutory obligations, should the Postgraduate Program involve tuition fees,

b) Honorary Professors or retired members of the Teaching and Research Staff of the Department or other Departments of the University of Athens or other Higher Education Institutions,

c) Collaborating professors,

d) Appointed instructors,

e) Visiting professors or visiting researchers,

f) Researchers and specialized scientific personnel of research and technological organizations mentioned in article 13A of Law 4310/2014 (A' 258) or other research centers and institutes, domestically or abroad.

By decision of the Assembly, the supervision of theses it is possible to be assigned, to members of the Teaching and Research Staff, Special Educational Staff, Special Laboratory Teaching Staff and Special Technical Laboratory Staff of the Department of Digital Industry Technologies who have not assumed pedagogical responsibilities in the Postgraduate Program.

9.7 The Assembly determines the number of dissertations that can be assigned to each supervisor.

9.8 The opportunity for a change in topic or examination committee is permissible only once per student, subsequent to a request submitted to the Secretariat, for which the recommendation is presented by the Coordinating Committee to the Assembly.

9.9 Once postgraduate theses gain approval from the examination committee, they are mandated for dissemination on the Digital Repository "PERGAMOS," in accordance with the resolutions of the University Senate of the University of Athens.

9.10 If the Master's Thesis contains unpublished original results, upon request of the supervisor, co-signed by the postgraduate student, only the abstracts may be published on the website, and the full text will be published later.

9.11 If the Department Assembly, through its resolution, transfers to Coordinating Committee the authority to establish examination committees for the evaluation of postgraduate students' theses and to appoint the supervisor for each thesis, the prerogatives of the Department Assembly, as delineated in this article, are exercised by the Coordinating Committee.

ARTICLE 10: OBLIGATIONS AND RIGHTS OF POSTGRADUATE STUDENTS

10.1 Postgraduate students have all the rights and benefits provided for undergraduate students until the expiration of any granted extension of their studies, with the exception of the right to receive free textbooks.

10.2 The University of Athens ensures accessibility to recommended textbooks and teaching materials for students with disabilities and/or special educational need (https://access.uoa.gr/).

10.3 The University of Athens Career Office provides advisory support to students on matters related to studies and professional rehabilitation (https://www.career.uoa.gr/).

10.4 Postgraduate students are encouraged to participate in and attend seminars of research groups, discussions for bibliographic updates, laboratory visits, conferences/seminars with a cognitive subject relevant to the Postgraduate Program, lectures, or other scientific events of the Postgraduate Program, etc.

10.5 The Assembly, upon the proposal of the Coordinating Committee, may decide to expel postgraduate students if they:

- exceed the maximum limit of absences.

- fail in the examination of a course or courses and do not successfully complete the program, as specified in the regulations of the Postgraduate Program.

- exceed the maximum duration of enrollment in the Postgraduate Program, as defined in the regulations of the Postgraduate Program.

- violate the written provisions regarding the handling of disciplinary offenses by the competent disciplinary authorities.

- fail to pay the prescribed tuition fee.

- submit a request for deletion themselves.

10.6 In the event of the deletion of a postgraduate student from the Postgraduate Program, they may request a certificate for the courses in which they have been successfully examined.

10.7 Students may participate in international exchange programs, such as the ERASMUS+ or CIVIS programs, according to current legislation. In this case, the maximum number of ECTS they can recognize is thirty (30). This opportunity is provided after their first semester of studies.

10.8 The Postgraduate Program provides the opportunity for students to undertake internships in public or private entities. The internship carries six (6) ECTS that are not counted towards the ninety (90) ECTS of the regular study program. Internships can also be arranged through exchange programs, e.g., Erasmus+, in accordance with current legislation.

10.9 Postgraduate students of the University of Athens may enroll in Postgraduate Programs of the same or other Greek or foreign Universities within the framework of educational or research cooperation programs according to current legislation.

10.10 It is possible to simultaneously enroll in an undergraduate program of study and a postgraduate program of study or in two (2) Postgraduate Programs of Study of the same or different Department, of the same or different University.

10.11 At the end of each semester, an evaluation is conducted for each course and each instructor by the postgraduate students (see Article 17).

10.12 Postgraduate students may request the issuance of a diploma supplement in Greek and English.

10.13 For their participation in the Postgraduate Program, postgraduate students pay tuition fees totaling three thousand nine hundred (3,900) euros. The amount of 3,900 euros is evenly distributed over the three semesters of study for full-time students (i.e., 1,300 euros per semester) and over the six semesters of study for part-time students (i.e., 650 euros per semester). The payment of the fee is made at the beginning of each semester. The deadlines for the payment of the tuition fee will be determined by the Coordinating Committee.

ARTICLE 11. TUITION FEE EXEMPTION

11.1 Postgraduate students enrolled in a Master's program may be exempt from tuition fees if they meet the financial or social criteria and the excellence requirements established by current legislation during their undergraduate studies. This exemption applies to participation in a single Master's program. In any case, the exempted students do not exceed thirty percent (30%) of the total number of students admitted to the Master's program per academic year.

11.2 The application for exemption from tuition fees is submitted after the completion of the

selection process for postgraduate students. The financial situation of a candidate is never a reason for non-selection in a Master's program.

11.3 Those who receive a scholarship from another source or citizens of non-EU countries are not eligible for exemption.

11.4 The examination of criteria for exemption from tuition fees is conducted by the Department Assembly, and a reasoned decision on the acceptance or rejection of the application is issued.

11.5 If current legislation establishes an age criterion, the date of birth of students is considered to be December 31 of the birth year for reasons of good administration and equal treatment.

11.6 Members of the categories Special Educational Staff, Special Laboratory Teaching Staff and Special Technical Laboratory Staff, who are admitted as supernumerary according to the provision 4.3 of this decision, are exempt from paying tuition fees.

11.7 In cases where members of the same family up to the second degree of blood or affinity are simultaneously enrolled in the Master's program, there is the possibility of a 50% reduction in tuition fees.11.2 The submission of applications seeking exemption from tuition fees is to occur subsequent to the completion of the selection process for M.Sc. candidates. It is imperative to underscore that the financial standing of a candidate does not, under any circumstance, serve as grounds for non-selection within an M.Sc. program.

Article 12. SCHOLARSHIPS AND AWARDS

Students can receive scholarships and awards to support their studies.

12.1 These scholarships are distinguished as follows:

a) Excellence scholarships, which are awarded to top-performing students of the M.Sc. based on their performance in the courses of the first semester. The scholarships exempt the recipients from tuition fees for the second semester courses.

Requirements

Postgraduate students who have completed the first semester of studies can apply for excellence scholarships. Candidates must not hold a paid position in the public or private sector, nor receive a scholarship from any other entity during the specified period.

Criteria

- Academic performance in courses (with an average grade equal to or greater than nine)

- Successful completion of all courses according to the study program

- Individual and family income

In case of a tie, the scholarship is awarded to the student with the lowest individual and family income. In case of a tie in income, a draw is conducted. If a student renounces the scholarship, it is provided to the next in line.

If the enrolled students of the corresponding academic year are up to 20, then one excellence scholarship is awarded. If the enrolled students are more than 20 and up to 30, then two excellence scholarships are awarded. If the enrolled students are more than 30, then three excellence scholarships are awarded.

Procedure

Students, following a relevant invitation from the M.Sc., submit an application accompanied by the following documents to the Department's Secretariat:

1) Detailed transcript

2) A sworn statement, signed through the gov.gr platform, with the following text: "I do not hold a paid position in the public or private sector, nor do I receive a scholarship from any other entity for the specified period."

3) Recent tax clearance certificate (individual and family)

The M.Sc. Committee evaluates the applications and recommends to the Department's Assembly, which makes decisions accordingly.

b) **Repayable Scholarships.** The Department Assembly has the authority to grant up to three (3) repayable scholarships for the performance of adjunct teaching work in first-cycle study programs to postgraduate students, depending on the number of admissions to the M.Sc. program and the financial capabilities of the M.Sc. The amount of the repayable scholarship may cover part or the entirety of the tuition fees and is calculated based on actual working hours. The hourly rate is determined at the beginning of each year by the Department Assembly. This decision is communicated to the postgraduate students of the M.Sc."

The cost of the repayable scholarships may be charged to the budget of projects/programs funded by private, international, and own resources of Article 230 of Law 4957/2022, as well as co-financed projects of the Partnership Agreement for the Development Framework (ESPA).

For the granting of repayable scholarships, the conditions, criteria, and procedures of paragraph 12.a for the award of excellence scholarships apply, with the exception that repayable scholarships can be awarded to students with an average grade equal to or greater than eight. Repayable scholarships are not granted to a student who has received an excellence scholarship.

As adjunct teaching work is defined the assistance provided by members of the Teaching and Research Staff during the exercise of their teaching duties, the supervision of first-cycle students, conducting tutorials, laboratory exercises, examination supervision, and the grading of assignments. The adjunct teaching work must be approved by the Assemblies of the respective departments to which the first-cycle study program is affiliated.

12.2 **Excellence Awards**. The M.Sc. may award excellence awards to the first student of each cohort who completes the courses of the first and second semesters, following a decision of the Coordinating Committee. The awards do not have financial benefits. The award is signed by the Director of the M.Sc. and the Department Chair.

Requirements

1. Average grade of courses in the first and second semesters greater than or equal to eight.

2. Completion and successful examination in the February (first semester) and June (second semester) exams in the normal study years (first and second semester of each cohort).

Procedure

After the submission of the June grades, the Coordinating Committee reviews the grades of the cohort's students. If the previous requirements are met, the committee ranks the students in descending order (according to their average grade) and decides on the awarding of prizes. The average grade is calculated using the formula:

$$\text{average grade} = \frac{\sum_{k=1}^{N} BM_k \cdot \Pi M_k}{\Sigma \Pi M}$$

where:

- N is the number of courses in the respective semester(s),

- ΒΜκ is the grade of course κ,

- ΠΜκ is the credit units of course κ,

 - ΣΠΜ is the total credit units of the semester(s) in question.

ARTICLE 13. INFRASTRUCTURE AND FUNDING OF THE MSC PROGRAM

13.1 To ensure the smooth operation of the MSc program, classrooms and auditoriums of the Euripus Campus, as well as the facilities of the Laboratory of Robotics, Automatic Control, and Cyber-Physical Systems of the Department of Digital Industry Technologies, are provided.

13.2 Administrative and secretarial support for the MSc program is facilitated by the Secretariat of the Department of Digital Industry Technologies at the National and Kapodistrian University of Athens.

13.3 The funding for the MSc program may be derived from:

  a) Tuition fees,

  b) Donations, sponsorships, and any kind of financial support,

  c) Legacies,

  d) Resources from research projects or programs,

  e) Institutional resources of the Higher Education Institution, and

  f) The state budget or public investment program.

  g) Any other legal source.

13.4 The payment of tuition fees is made by the student personally or by a third party, whether a natural or legal person, on behalf of the student, as specified in the establishment decision of the MSc program.

13.5 The management of the resources of the MSc programs is carried out by the Special Account for Research Funds of the National and Kapodistrian University of Athens.

13.6 The distribution of MSc program resources is as follows:

a) Thirty percent (30%) of the total income derived from tuition fees is retained by the Special Account for Research Funds. This amount includes the percentage retained for the financial management of the MSc programs by Ε.Λ.Κ.Ε. When the income of the MSc program comes from donations, sponsorships, financial support, legacies, or resources from research projects or programs, the percentage retained for SARF is applied as it does for income from similar funding sources.

b) The remaining amount of the total income of the MSc program is allocated to cover the operational expenses of the MSc program.

ARTICLE 14. ASSIGNMENT OF TEACHING/TEACHING STUFF IN THE M.SC. PROGRAM

14.1 The assignment of teaching responsibilities within the Postgraduate Studies Program is determined through the decision of the Assembly and is allocated to the following categories of teaching stuff:

a) Members of the Teaching Research Staff, Special Educational Staff, Laboratory Teaching

Staff, and Special Technical Laboratory Staff affiliated with the Department of Digital Industry Technologies at the National and Kapodistrian University of Athens (NKUA) or other departments within NKUA, other Higher Education Institutions, or Higher Military Educational Institutions. This applies to those engaged in additional employment beyond their statutory obligations, contingent upon the imposition of fees for the Postgraduate Studies Program.

b) Emeritus professors or retired faculty members from the Department or other departments of NKUA, other Higher Education Institutions, or Higher Military Educational Institutions

c) Collaborating professors.

d) Teaching assistants.

e) Visiting professors or visiting researchers.

f) Researchers and specialized operational scientists affiliated with research and technological entities as stipulated in Article 13A of Law 4310/2014 (A' 258), or other research centers and institutes, domestically or abroad.

g) Scientists of acknowledged prestige possessing specialized knowledge and relevant experience in the subject matter of the Postgraduate Program.

14.2 Remuneration for all categories of teaching stuff is exclusively sourced from the resources allocated to the Postgraduate Program. No form of compensation or benefits may be disbursed from the state budget or the public investment program. The Assembly decides the amount of remuneration for each instructor. Specifically, instructors with faculty status may receive additional compensation for contributions to the Postgraduate Program, provided they fulfill their minimum legal obligations as outlined in paragraph 2 of Article 155 of Law 4957/2022. The last paragraph is applicable with necessary modifications to members of Special Educational Staff, Laboratory Teaching Staff, and Special Technical Laboratory Staff, contingent upon their fulfillment of minimum legal obligations.

14.3 "By decision of the Department Assembly, adjunct teaching work may be assigned to doctoral candidates of the Department, under the supervision of an instructor of the M.Sc. program."

ARTICLE 15. AWARDING OF POSTGRADUATE DIPLOMA

15.1 The student completes the studies for the acquisition of a Master's Degree (M.Sc.) by fulfilling the minimum number of courses and credit units required for obtaining the M.Sc., as well as successfully completing the master's thesis (if chosen). The Assembly verifies the completion of the studies to confer the Master's Degree.

15.2 Upon the completion of the aforementioned process, the postgraduate student is granted a certificate of completion of studies. At this point, they lose their student status and cease participation in the University's collective governing bodies.

15.3 The M.Sc. certifies the successful completion of studies and assigns a grade, with precision to two decimal places, according to the following scale: Distinction (8.5 to 10), Very Good (6.5 to 8.5 excluding), and Good (5 to 6.5 excluding)."

15.4 The format of the M.Sc. varies by type of M.Sc. program and is common across all Departments and Schools of the National and Kapodistrian University of Athens. It is outlined in the Regulations for Postgraduate and Doctoral Studies of the Institution.

15.5 Within the framework of the M.Sc., a Master's Degree is awarded in 'Robotics and Industrial Control'

ARTICLE 16. GRADUATION CEREMONY

16.1 The graduation ceremony is not a mandatory component of the successful completion of

studies, but it is a necessary requirement for the issuance of the diploma document. The swearing-in takes place during the Department Assembly of the Department of Digital Industry Technologies at NKUA and in a space within the Department, in the presence of the Director of the M.Sc., the Chair of the Department, the Dean of the School or their Deputy, and, if possible, a representative of the Rector.

16.2 Requests for a graduation ceremony for postgraduate students in the Great Ceremony Hall of the Central Building are considered on a case-by-case basis by the Rector, based on the Secretary's assessment of the possibilities and the number of participants.

16.3 Postgraduate students who have successfully completed the M.Sc. may, under exceptional circumstances (such as studies, residence, or work abroad, health reasons, etc.), request an exemption from the swearing-in obligation from the Department's Secretariat. The exemption is approved by the Department Chairperson and the Vice-Rector for Academic Affairs, International Relations, and Outreach."

ARTICLE 17. EVALUATION OF THE M.Sc. PROGRAM

17.1 Evaluation by the Hellenic Authority for Higher Education (HAHE)

The M.Sc. program is evaluated within the framework of the periodic evaluation/certification of the Department organized by the Hellenic Authority for Higher Education. This evaluation includes the overall assessment of the work performed by the M.Sc. program, the degree of accomplishment of its goals set during its establishment, its sustainability, the employability of graduates, its contribution to research, its internal evaluation by postgraduate students, and other elements related to the quality of the work produced and its contribution to the national strategy for higher education.

If, during the evaluation process, it is determined that the M.Sc. program does not meet the conditions for its continuation, it operates until the graduation of the already enrolled students according to the decision of its establishment and the regulation of postgraduate and doctoral study programs.

17.2 Internal Evaluation

The internal evaluation of the M.Sc. program is carried out annually by the Quality Assurance Unit (QAU) of NKUA. All stakeholders involved in the implementation of the actions and activities of the M.Sc. program participate in the internal evaluation, including students, members of the academic staff, administrative and technical support personnel, and members of the Coordinating Committee of the M.Sc. program.

The internal evaluation process is conducted in accordance with current legislation, the Internal Quality Assurance System of the Institution, the guidelines, and standards of the HAHA. The internal evaluation of the M.Sc. program includes the assessment of teaching work, as well as all academic functions and actions.

Specifically, the following are evaluated:

a) The content of the Study Program according to the most recent research in the specific field

of the M.Sc. program to ensure its contemporary character.

b) The workload of courses, as well as the progress and completion of postgraduate studies by students.

c) The satisfaction level of students' expectations from the Study Program, the offered study support services, and the learning environment.

d) The courses of the Program on a semester basis through questionnaires completed by M.Sc. students.

e) The employment of graduates in the job market.

The results of the evaluation are communicated on the M.Sc. program's website. The utilization of the evaluation results and the communication of the conclusions aim at the sustainability of the Program, the high level of studies, the improvement of its services, and the effectiveness of its teaching staff. For this reason, at the end of each semester, the Coordinating Committee of the M.Sc. program convenes to discuss the evaluation results.

ARTICLE 18. DURATION OF OPERATION OF THE M.Sc. PROGRAM

The M.Sc. program will operate until the academic year 2033-2034 if it meets the criteria of internal and external evaluation, in accordance with current legislation.

ARTICLE 19. FINAL PROVISIONS

For matters not specified in the current legislation, in the Regulations of Postgraduate and Doctoral Studies of NKUA, in the decision of the establishment of the M.Sc. program, in this Regulation of the M.Sc. program, or in the Special Regulation for the Organization and Application of Distance Learning Methods of the M.Sc. program, the competent authority to decide is the M.Sc. program's bodies.

This decision shall be published in the Government Gazette.

The Rector

Gerasimos D. Siasos