

**INTERNAL REGULATION  
FOR THE POSTGRADUATE STUDIES PROGRAM (P.S.P.) IN  
"DIGITAL MEDIA – COMPUTATIONAL INTELLIGENCE"  
OF THE SCHOOL OF INFORMATICS  
FACULTY OF SCIENCES  
ARISTOTLE UNIVERSITY OF THESSALONIKI**

**Article 1  
Objective of the Postgraduate Studies Program (P.S.P.)**

The P.S.P. in "Digital Media-Computational Intelligence" aims to train and prepare qualified personnel, both practitioners and scientists, on cutting-edge technologies in Signal Processing, Image/Video Analysis, Computer Vision, Graphics, Language Technologies, and Computational Intelligence and to advance research in these fields, so as the program graduates can successfully fill in jobs in the Private and Public Sector of the Economy as well as openings at Research and Academia.

The objectives of the P.S.P. in "Digital Media-Computational Intelligence" of the Aristotle University of Thessaloniki (A.U.Th.) are fulfilled by the attendance of postgraduate courses and the completion of a Diploma Thesis in accordance with the international academic standards that guarantee training and specialization in Digital Media and Computational Intelligence.

**Article 2  
Administrative Bodies of the P.S.P.**

The responsible bodies for the administration, organization, and operation of the MSc "Digital Media-Computational Intelligence" are as follows.

- I. The Academic Senate of the Aristotle University of Thessaloniki is the responsible body for the academic, administrative, organizational, and financial issues of the P.S.P. and resolves any issues related to the P.S.P. that are not specifically assigned to other bodies by law.
- II. The School Assembly (S.A.), which has the responsibilities defined in article 31 par. 3, Law 4485/2017.
- III. The Coordinating Committee (C.C.) of the MSc consists of five (5) members of the Faculty, who have been assigned postgraduate courses. They are elected by the S.A. for a two-year term and are responsible for monitoring and coordinating the operation of the P.S.P. At the end of the C.C. term, under the responsibility of the outgoing Director, a detailed report should be prepared, detailing research and educational activities as well as other activities thereof, aiming to further improve the studies, better utilize the human resources, optimize the use of existing infrastructure (article 44, par. 2, Law 4485/2017).
- IV. The Postgraduate Studies Committee, consisting of the Vice Rector for Academic and Student Affairs as President and the Deans of the University Faculties as members is responsible for the issues defined in article 32 par. 5 Law 4485/2017.
- V. The Director of the P.S.P. is a member of the C.C. He is appointed with his deputy by decision of the S.A. for a two-year term and must meet the qualifications of article 31, par. 8, Law 4485/2017. He cannot serve for more than two (2) consecutive terms and is not entitled to any additional remuneration for his administrative work. The Director has the powers provided for in article 31, par. 8, Law 4485/2017 and any others assigned to him by the S.A. (article 45, par. 1c).
- VI. A Three-Member Committee which is responsible for the assessment of candidate applications.
- VII. A Six-Member Scientific Advisory Committee (S.A.C.), responsible for the external academic evaluation of the P.S.P. (art. 44, par. 3, Law 4485/2017)

### Article 3 Candidates

The candidates for admission to the Postgraduate Studies Program in "Digital Media - Computational Intelligence" must be:

1. Recipients of a Bachelor of Science (B.Sc.) degree awarded by:
  - a. Departments within Faculties of Applied Sciences,
  - b. Departments within Faculties of Engineering,
  - c. Any other Department of related numerate physical science discipline from Universities and Technological Educational Institutes (T.E.I.)

Candidates may also be undergraduate students in the last semester of their studies that are expected to obtain their degree until the end of the P.S.P.'s registration period.

2. Graduates of Departments from abroad of related scientific discipline. A Postgraduate Diploma is not awarded to a postgraduate student whose first degree from an Academic Institution abroad has not been recognized by the Hellenic National Academic Recognition Information Center (N.A.R.I.C.) in accordance with Law 3328/2005 (A' 80).
3. Members of the Scientific Staff (S.S.S.), Laboratory Teaching Staff (L.T.S.) and Technical Staff (T.S.) that work at A.U.Th., and fulfill the requirements of the first paragraph of article 34, Law 4485/2017. These candidates may be admitted to the P.S.P. in excess of the normal limit of admitted students, provided that their degree and work is relevant to the P.S.P. Only one such candidate may be selected per year.

### Article 4 Number of Approved Students, Criteria and Procedure of Selection

1. The maximum number of students admitted to the P.S.P. "Digital Media-Computational Intelligence" per year is **thirty (30) postgraduate students**. The maximum number of postgraduate students in the School of Informatics as a whole is set at two hundred (200), which is equal to the number of undergraduate students enrolled in the School via admission exams, transfers, and qualification exams.
2. The maximum number of postgraduate students per faculty member in the P.S.P. is set to **six (6)**.
3. a. The C.C. proposes to the S.A. for (i) the qualifications of the candidates; (ii) the supporting documents; (iii) the time of release of the call for applications in the press, the Department website, and social media; (iv) the deadline for the submission of applications; (v) the deadline for the evaluation of candidates and the invitation to interview, and vi) the deadline for matriculation.  
b. The S.A. decides on the above, proceeds to the release of the open call for applications to the P.S.P. and appoints a competent Three-Member Committee, composed of faculty members associated with the P.S.P., for the assessment of applications.  
c. A member of the Departmental Secretariat attends to (i) the timely distribution of the forms in the School website (ii) the printed or electronic correspondence relating to the submission of applications (receipt, dispatch of forms); (iii) the collection and filing of applications and attached documents, and (iv) their forwarding to the Three-Member Committee.  
d. The necessary supporting documents to be submitted by candidates in printed or electronic form are:
  1. Application (printed, accessible via the website of the School).
  2. Curriculum vitae.
  3. Copy of the applicant's degree.
  4. A certificate of equivalence from the Hellenic N.A.R.I.C. (if required).
  5. Copies of any recognized postgraduate degrees.
  6. A copy of the transcript of the undergraduate and/or postgraduate courses the applicant has attended.
  7. Grade of the applicant's dissertation, if applicable.

8. Certificates of good knowledge of foreign languages for Greek applicants or the Greek language for foreign candidates (level B2).
  9. Publications (if any).
  10. Certificates for any prior professional / research experience (duration and subject) .
  11. Names and contact details from two faculty members or former employers that will provide recommendation letters for the candidate.
  12. Copy of Identification (ID) card / passport.
  13. Two (2) photos.
  14. Application fee of € 40 (re-adjustable by decision of the S.A. and approval of the Senate). The fee is payable to a relevant account of the Special Account of Research Funds of the Aristotle University of Thessaloniki (invalid).
- e. Applicants who currently attend the last year of their undergraduate studies (according to article 3 par. 1 of this internal regulation) are required to submit a certificate of studies instead of a degree, accompanied by their academic transcript. The matriculation of these candidates will be finalized only after a copy of degree is presented, provided that they fulfill the prerequisite qualifications referred to in paragraph 4 of this article.
4. The following courses are related to the P.S.P.: Signals-Systems, Stochastic Signal Processing, Pattern Recognition, Digital Signal Processing, Graphics, Digital Image Processing, and Neural Networks.
  5. The admission criteria are grouped into five sets. Each set is evaluated by a parameter in a scale 0-10 and is weighted by a factor in order to obtain the final score for each candidacy. In particular, the following parameters are taken into account:
    - a. The general grade of the candidate's degree, the type of degree, and the candidate's transcript with an emphasis on his performance in courses related to the P.S.P. with a weighting factor of 35%. The grade of the degree must be at least six (6) in the scale 0-10 (or equivalent if another scoring scale applies).
    - b. Success in the application interview, rating of the candidate's CV, and ranking among his fellow classmates with a weighting factor of 25%.
    - c. Any publications with a weighting factor of 20%.
    - d. The candidate's language skills with a weighting factor of 10%.
    - e. Prior research or professional experience with a weighting factor of 10%.
  6. The Three-Member Committee (i) draws up a full list of candidates; (ii) rejects those who do not meet the minimum degree grade or the minimum language skills requirements; and (iii) invites all candidates meeting the criteria for an interview. After the completion of this procedure, the Three-Member Committee draws up the final list of the candidates based on their total rating. If there are multiple candidates with the same rating, then their degree grade will be taken into account to resolve the tie and yield their final classification. If their degree grades are also equal, then the average score in the related courses to the P.S.P. is taken into account for their final classification.
  7. The final list of successful candidates and any runner-ups is approved by the C.C., which submits a recommendation for ratification by the S.A. The S.A. validates the list, which is posted on the secretariat's announcement board and the website of the School.
  8. The successful candidates for the P.S.P. are invited to matriculate within a specified deadline, which is explicitly mentioned in the call for applications. In case of failure to matriculate within the aforementioned deadline, the 1st, 2nd, and so on, runner up is invited to matriculate.
  9. The C.C. proposes to the S.A. whether the P.S.P. will be offered based on evaluation of actual data (e.g., the number of matriculated postgraduate students, the economic viability of the P.S.P.) before the start of winter semester courses.

## **Article 5**

### **Duration and Terms of Studies**

#### **DURATION**

1. The winter semester begins on October 1<sup>st</sup> and ends on February 15<sup>th</sup>, while the spring semester begins on February 16<sup>th</sup> and ends on June 30<sup>th</sup>, every academic year, unless otherwise specified by S.A.

2. The minimum duration of P.S.P. studies is set to **three (3) semesters** for full-time students. This allotted time period includes the completion of the diploma thesis as well.
3. The maximum duration of P.S.P. studies is set at **four (4) semesters** for full-time students.
4. Pursuant to par. 2, article 33, Law 4485/2017 (114 A'), with the recommendation of the C.C. and the decision of the S.A., there is a possibility of **part-time studies**. The maximum duration of part-time studies is set at six (6) semesters. This option is available for:
  - a. students who work at least 20 hours weekly upon their request, supported by a certificate issued from their employer.
  - b. non-working students in exceptional cases, such as long-term illness or hospitalization beyond 15 days, endangered pregnancy, serious family reasons, military service, upon their request, accompanied by the necessary certificates.
5. Students may be granted, upon their request, a **temporary suspension of studies**, which may not exceed two (2) consecutive semesters. During the suspension, the student loses his (student) status. The suspension duration is not taken into account towards the maximum duration of studies.
6. An **extension** of studies up to one (1) year may be granted only in exceptional cases, such as those described in paragraph 4b of this article. This extension can only be granted upon the recommendation of the C.C. and the justified decision of the S.A.
7. Upon the proposal of the C.C. and the decision of the S.A., a postgraduate student is expelled in the following cases:
  - a. behavior that violates academic ethics, such as plagiarism or copying in examinations.
  - b. upon his/her own request.
  - c. if the student failed:
    - (i) to pass eight (8) courses (art. 6, par. 13 hereby) within the maximum allotted time for completion of studies as defined in this article; or
    - (ii) to be successfully examined in his Diploma Thesis within the maximum allotted time for completion of studies as defined in this article; or
    - (iii) to be successfully examined three (3) times to registered postgraduate courses (repeated failure in the same course is counted as a separate failure); or
    - (iv) to successfully attend required undergraduate courses for students of the P.S.P. (par. 2, art. 6) within the first year of studies.

No show in the examinations or overrun of permitted absences is also considered as failure in a registered course. In cases 7.c.iii) and 7.c.iv), the student may apply for his re-examination in a course by a Three-Member Committee comprising faculty members of related scientific discipline to the course who are appointed by the S.A. upon recommendation of the C.C. The tutor of the course is excluded from the committee.
8. There is no provision for re-examination in courses during the examination period of September.
9. At the beginning of each academic semester and within a specified time period from the beginning of the courses, decided by the C.C., the students renew their matriculation at the P.S.P. by registering to the Secretariat of the School the courses they will attend during the semester or by applying for their Postgraduate Diploma Thesis that they will start or continue pursuing. The registration of courses and/or the application for a diploma thesis is equivalent to the renewal of matriculation in the P.S.P.
10. Postgraduate students have all the rights and are entitled all the benefits and facilitations provided for undergraduate students, **except** for the provision of course books.
11. A.U.Th. provides for facilities to students with disabilities, such as the operation of lifts, ramps, so that they can access the premises of the School. The School Faculty is committed to help post-graduate students with disabilities using free software of enabling technologies, such the ATHINA or MATHINA collection. Course examinations for students with disabilities can be carried out orally upon their request. Students with disabilities are not exempt from course projects or the diploma thesis.

#### **FEES**

12. Postgraduate students whose income does not exceed one hundred percent (100%) (with respect to individual income) and seventy per cent (70%) (with respect to family income)

of the national mean income **are exempt** from study fees. All matters concerning the implementation of the exemption of study fees are defined by the decision of the Minister of Education, Research and Religious Affairs, which is published in the Government Gazette, [Art. 35, par. 2, Law 4485/2017 (114A')]. The percentage of exempt students is set at **thirty percent (30%)** of the total number of students matriculated in the P.S.P. and is applicable to their participation in only one P.S.P. According to article 35 of Law 4485/2017, if the number of students qualifying for exemption exceeds the above percentage, the students that are to be exempt are selected in order of rank starting from the ones with the lowest income.

13. The application for exemption of study fees is submitted by the interested student to the Department after the completion of the student selection procedure. Under no circumstances can financial weakness be a reason for non-selection in a P.S.P.
14. Study fees are set at **six hundred (600) €** per semester for full-time postgraduate students. Students who are not exempt from paying study fees must settle this requirement within a specified time limit.
  - For selected candidates to be matriculated to the P.S.P, it is explicitly mentioned in the invitation for enrollment.
  - For students who attend a semester other than the first, it is the beginning of semester courses according to the decision of the C.C.Matriculation/renewal in the P.S.P. is considered to be successfully completed only after the payment of fees by those who are required to pay.
15. The obligations required for the successful completion of studies in the P.S.P. are defined in Article 6 of this document.

## **Article 6**

### **Curriculum – Knowledge Assessment**

1. The P.S.P. "Digital Media - Computational Intelligence" offers one specialization identical to its subject.
2. **Counselor:** Within the first two weeks of study, the Departmental Secretariat randomly appoints faculty members, who teach in the P.S.P, as Counselors to postgraduate students. Each postgraduate student is assigned one Counselor. The Counselor advises the postgraduate student during his/her studies. A faculty member cannot counsel annually more postgraduate students than the maximum number specified in art. 4, par. 2 in this regulation. The Counselor may be changed upon his/her request or upon the student's request submitted to the C.C. During diploma thesis preparation, the supervisor of the Postgraduate Diploma Thesis becomes the student's Counselor ex officio.
3. Students matriculated in the P.S.P., who do not have sufficient foundations to related undergraduate courses may acquire the required basic knowledge by attending courses of the Undergraduate Program of Studies of the School of Informatics within a period of time which may not exceed the first two (2) semesters. Such courses are recommended by the C.C. and approved by the S.A. The examination to these courses can be taken according to the schedule of undergraduate examinations or according a specific examination by the tutor professor of the course. The examination is considered to be successful, when the grade thereof is at least six (6) in the 0-10 scale. The student's counselor is responsible for assisting the student in this endeavor.
4. Each academic year in May, upon a proposal of the C.C., the S.A. decides on the curriculum to be offered the next academic year, based on the list of courses in paragraph 7 of this article, the hours each course will be taught, and teaching assignments to faculty members. Each course of the P.S.P. "Digital Media - Computational Intelligence" can also be included in the curriculum of only one other P.S.P. offered by the Department.
5. The maximum number of courses a graduate can enroll in each semester is four (4), plus any undergraduate courses, offered in that semester, in accordance with paragraph 3 of this regulation.
6. The minimum and maximum number of postgraduate students attending a postgraduate course is defined by the C.C. each year in order to ensure the optimal implementation of the curriculum. Postgraduate students register their course preferences and the secretariat

validates them. If the maximum number of students for a course is reached, the secretariat may process course registrations in a chronological priority order.

7. Indicative offered courses:

I/O	COURSE TITLE	Semester	Teaching hours	European Credit Transfer System (ECTS)
1	COMPUTER VISION	1 <sup>st</sup>	3	7,5
2	COMPUTATIONAL INTELLIGENCE- STATISTICAL LEARNING			
3	STATISTICAL SIGNAL PROCESSING - TIME SERIES			
4	BIO SIGNAL ANALYSIS - NEUROINFORMATICS			
5	GAMES AND ARTIFICIAL INTELLIGENCE			
6	COMPLEX SYSTEMS: FROM THE SOCIETY TO THE WEB			
7	DYNAMIC SYSTEMS: APPLICATIONS TO SIGNALS, ROBOTICS, AND FINANCE			
8	DEEP LEARNING & MULTIMEDIA DATA ANALYSIS	2 <sup>nd</sup>		
9	SOCIAL MEDIA			
10	DIGITAL PROCESSING AND ANALYSIS OF VIDEO			
11	SIGNAL PROCESSING FOR BRAIN COMPUTER INTERFACES			
12	VIRTUAL REALITY			
13	LANGUAGE TECHNOLOGY			

Courses with I/O 6 and 7, as well as with I/O 9 and 10 will be offered every other academic year.

The syllabus of the indicated offered courses is as follows:

Computer Vision: Shape description and image texture. Mathematical morphology. Three-dimensional image analysis. Geometry of object surfaces. Image features (edges, corners, lines, curves). Camera calibration. Static and dynamic analysis of stereo images. Extraction of shape information from video. Extraction of depth information. Recognition of two-dimensional and three-dimensional objects. Object localization in space. Applications to image retrieval, biometrics, human-computer interfaces, and robot vision. Programming projects on digital video processing in C/C++ or MATLAB. Literature surveys.

Computational Intelligence - Statistical Learning: Supervised, semi-supervised and unsupervised learning. Parameter estimation. Bayesian Learning. Non-parametric learning. Neural networks. Statistical machine learning theory. Vapnik - Chervonenkis dimension. Support Vector Machines. Kernel-based machine learning. Learning with sparsity constraints. Multidimensional scaling. Non-linear dimensionality reduction and manifold learning. Discriminant Analysis. Graph based dimensionality reduction. Data clustering.

Spectral clustering. Information theory based learning. Fuzzy sets and fuzzy reasoning with applications to data classification and clustering. Genetic and evolutionary algorithms and their applications in machine learning. Hybrid computational intelligence systems for signal, image and video analysis.

Statistical Signal Processing - Time Series: Introduction to spectral analysis. Non-parametric spectral analysis techniques (periodogram and its refined variants). Parametric methods for rational spectra (signals AR, MA, and ARMA). Parametric methods for line spectra. Filter bank methods. Spatial methods. Detection and estimation theory. Applications to multimedia forensics: the electric network frequency case study.

Biosignal Analysis – NeuroInformatics: Biosignals (recording, digital processing, analysis, modelling, inspection and automated monitoring). Basic principles of Electrophysiology. Neurophysiology and Cognitive Neuroscience NeuroInformatics: contemporary neuroimaging techniques and the extraction - management- analysis of information from the experimental data. Introduction to computational neuroscience and the neural modelling of various brain processes and mental faculties. The Brain as a complex system.

Games and Artificial Intelligence Computer games and animation: basic principles. Dynamics / physics - based animation: particle systems, rigid body dynamics, constrained dynamics, energy/behaviour functions. Collision detection and handling in particles and rigid bodies. Kinematics: keyframe animation, parametric curves for defining motion trajectories, speed control. Forward and inverse kinematics and their application in the animation of articulated structures. Motion capture techniques and motion capture data processing. Games and animation programming using Unity or Unreal Engine. Artificial intelligence and games: decision trees, behaviour trees, finite state machines, path planning and pathfinding, goal-oriented action planning.

Complex Systems: From the Society to the Web: Complexity in social world. Modeling using NetLogo. Models of complex adaptive social systems. Social dynamics. The edge of chaos. Self-organized criticality. Evolving automata. Diffusion adaptation in complex systems. Organizational decision making. Social science in between. Applications: The forest fire model; Social segregation, games, auctions. Adaptive filters. Diffusion adaptation over networks. Mobile adaptive networks. Networked file: How does Google rank web pages? How does Netflix recommend movies? How do I viralize a Youtube video?

Dynamic Systems: Application to Signals, Robotics, and Finance: Computational statistics. Dynamic systems and discrete-time Markov processes. Bayesian inference. Batch and recursive Bayesian estimation. Kalman filtering and its variations. Gaussian filtering. Data driven forecasting. Model driven forecasting and data assimilation. Applications to spatio-temporal processes (e.g., localization). Imperfect models.

Deep Learning and Multimedia Data Analysis: Overview of Neural Networks. Deep Learning and back-propagation algorithms. Deep autoencoders and feature extraction. Deep Boltzmann Machines. Convolutional Neural Networks. Recurrent Neural Networks for sequential data analysis. Generative adversarial networks. Deep Reinforcement Learning. Knowledge transfer. Optimization, normalization, regularization, over-training, learning and generalization. Design and training of deep neural architectures. Implementation and deployment frameworks for deep neural architectures and associated software libraries. Computational complexity issues and parallel programming on GPUs. Deployment on embedded systems. Applications in analysis, classification, clustering and retrieval of large scale data (big data). Applications in semantic information extraction from text, audio, image and video. Applications in controlling autonomous machines and agents.

Social Media: Graphs in Social and Digital Media. Required prior mathematical knowledge: Graphs and matrices. Algebraic graph analysis. Web retrieval based in ranking. Tag propagation, and information diffusion over graphs. Pattern classification using graph-based dimensionality reduction. Matrix and tensor factorizations with applications to recommendation systems. Multimedia retrieval over social networks based on hypergraph

learning. Graph signal processing with applications to social networks. Big Data analysis for social networks. Adaptation of semantic models for Evolving Big Data from social media. Storage, processing, and visualization of big graphs.

Digital Video Processing and Analysis: Fundamentals of video. Time-varying models of image formation. Two-dimensional motion estimation. Three-dimensional motion estimation and segmentation methods. Image sequence filtering. Depth estimation from motion. Video compression: MPEG-1, MPEG-2, and MPEG-4 standards. Model-based encoding. Streaming/webcasting of video. Video over social media (YouTube). Description and retrieval of video (MPEG-7 standard). Programming projects on digital video processing in C/C++ or MATLAB. Literature surveys.

Signal Processing for Brain Computer Interfaces: Basic principles of Neurophysiology. Evoking and recording brain activity. Digital techniques in brain signal analysis (spike-sorting, spectral and wavelet analysis, non-linear dynamics, etc.). Spatial filtering and multivariate techniques for multichannel signal processing. Brainwaves decoding in brain computer interfaces (BCI). Applications in clinical rehabilitation and modern paradigms of human-machine interaction.

Virtual Reality: Introduction to Virtual Reality (VR): principles and applications. Tracking devices. Navigation devices. Gesture interfaces. Introduction to the human visual system, graphics displays (head mounted displays, large volume displays, etc). Introduction to the human auditory system, sound generation systems, generation of 3D sound fields. Tactile/force feedback interfaces. Basic modelling principles for VR: geometric modeling, physical modeling, kinematic modeling, haptic rendering, haptic texture, force feedback calculation. Large geometric model management: Level of Detail (LOD), mesh simplification and subdivision techniques. Culling techniques for real-time rendering. VR applications development using Unity or Unreal Engine.

Language Technology: Speech science fundamentals. Treating speech recognition as a pattern recognition problem. Systematic transition from deterministic techniques, such as Dynamic Time Warping to statistical ones (e.g., Hidden Markov Models). Decomposition of text-to-speech (TTS) synthesis into sub-problems that can be solved by either classical techniques from Artificial Intelligence (e.g., finite-state automata, finite-state transducers, context-free grammars) or Digital Signal Processing techniques for converting phonetic transcription into speech. Understanding of prosody.

The courses are typically taught in Greek. If at least one foreign student is attending a course, then the course is taught in English.

The associated literature with each course is mostly in English.

Distance learning is not supported.

The curriculum can be reviewed annually after the proposal of the C.C. and the decision of the S.A. and the Postgraduate Studies Committee of the A.U.Th. The curriculum can be modified and the courses can be redistributed in the semesters after the proposal of the C.C. and with the approval of the Postgraduate Studies Committee of the A.U.Th.

- Attendance of lectures, lab courses, and other activities of the P.S.P. is compulsory. All postgraduate courses last one semester, are offered either in the winter or spring semester, and include thirteen (13) weeks of lectures and possibly tutorials, lab courses, seminars, and lectures by invited speakers. After these thirteen weeks and prior to the exams, there is one (1) week dedicated to revision/study each semester. Subsequently, the course examinations are conducted within two (2) weeks. In exceptional cases, lecturing duration may be reduced by a maximum of two (2) week. Any postgraduate student who has not attended at least 80% of the lectures of a course is excluded from the course examination and is given a zero (0) grade.



9. Performance assessment of postgraduate students in each course is based on a combination of written or oral examinations and projects.
10. Course examinations are conducted according to a schedule proposed by the C.C. and approved by the S.A each semester.
11. The grading scale for each course is from zero (0) to ten (10), as follows:
  - Excellent (8.5 to 10)
  - Very Good (6.5 to 8.5, not including 8.5)
  - Good (6 to 6.5, not including 6.5)A grade of at least six (6) is required for a student to pass a course.
12. The course grades are announced no later than one (1) week after the end of the examination period.
13. Each student has the obligation to attend and successfully pass eight (8) courses during the first and second semesters and to successfully complete a Diploma Thesis in accordance with paragraph 14 of this article.
14. Students who are matriculated to the 3rd semester of studies should choose a Diploma Thesis from a list of subjects published by the faculty of the P.S.P. on the web site of the School. The Diploma Thesis may be of research or technical nature and must have a sufficient degree of originality or demonstrate good knowledge and in-depth understanding of a specific topic of current research or technical interest. The Diploma Thesis equals to four (4) courses and contributes thirty (30) ECTS credits. The Diploma Thesis is undertaken under the guidance of a supervisor. Students apply to the C.C. for pursuing a Diploma thesis stating the proposed title of their Thesis, the supervisor chosen, and attaching a summary of the proposed thesis research. The C.C. appoints the supervisor of the Diploma Thesis and establishes a three-member Examination Committee for the approval of the thesis. Thesis supervisor chairs this committee. The members of the Examination committee must have scientific specialty in the same or a relevant field of the thesis subject.
15. A prerequisite for the examination of the Postgraduate Diploma Thesis is the successful examination in eight (8) courses (paragraph 13 of this article). The Diploma Theses are examined in February during the winter semester and in June or September during the summer semester pursuant to deadlines set by the C.C. In the event of non-completion of the Diploma Thesis in February of the third semester of studies, students who have been successfully examined in eight courses, renew their enrollment in the fourth semester without paying any fees. The renewal of the matriculation is for "the completion of the Postgraduate Diploma Thesis" and is granted upon submitting a progress report signed by their Thesis supervisor.
16. The Diploma Thesis should be at least 50 A4 pages long with a top/bottom margin of 4cm and a left/right margin of 3cm, double spacing, and font size of 12pt, excluding the list of references. The Diploma Thesis may be written in either Greek or English. If the Thesis is written in English, an extended summary of at least four (4) pages in Greek has to be attached in the thesis. The supervisor of the Diploma Thesis is responsible for reviewing, proposing revisions and corrections in the thesis, and certifying that any corrections have been properly implemented by the student. The deadline for thesis revision cannot exceed one (1) calendar month. The corrected Diploma Thesis is then submitted in three copies to the Three-Member Examination Committee.
17. The Diploma Thesis is presented before the Three-Member Examination Committee in a place and time designated by the C.C. The Three-Member Examination Committee is responsible for the approval and grading of the Diploma Thesis. The Diploma Thesis is graded with a grade of ten (10) if a publication has appeared, accepted, or submitted to a recognized peer-reviewed journal or conference as an outcome of thesis research. Following its approval by the Examination Committee, the Diploma Thesis is submitted in electronic form (pdf file) to the A.U.Th. Library and posted to School website.
18. In exceptional cases, if there is objective weakness (illness or death) or an important reason (resignation), the supervisor or a member of the three-member Examination Committee can be replaced upon the proposal of the C.C. and the decision of the S.A.
19. The overall grade of the postgraduate studies derives from the weighted average of the P.S.P. courses and the Diploma Thesis (the weighting is based on the ECTS credits of the courses and the Diploma Thesis). It is calculated, with two decimal place accuracy, in the following way:

***The grade of each course and the diploma thesis is multiplied by the corresponding number of credits (ECTS) and the sum of the products is divided by the minimum number of 90 credits required for receiving the MSc:  
Grade of Master's degree = sum of products (grade of each course x ECTS of each course) + (degree of diploma thesis x ECTS) / (total ECTS)***

## **Article 7 Scholarships**

Scholarships and prizes for excellence are granted to postgraduate students, according to a decision of the S.A. Scholarships are awarded on the basis of academic, objective criteria (e.g., grade point average in the previous semester for full-time postgraduate students) or for service offers and are included in the approved budget of the P.S.P. Scholarship granting terms, obligations, and rights of the scholars are regulated by C.C. recommendation and decision of the S.A.

Scholarships entail the obligation to perform teaching assistantship such as tutoring, assisting in laboratory exercises, supporting undergraduate students to implement projects within the scope of undergraduate courses and so on.

Scholarships are granted for six months. For those who have been granted scholarships, the assessment of any duties assigned to them within the scope of the scholarship might be taken into consideration.

A prize for excellence may be awarded to a postgraduate student who participates in a peer-reviewed international conference. The prize covers the conference registration fee. The P.S.P. must be acknowledged in the student's paper.

## **Article 8 Faculty (Tutors)**

P.S.P. courses are assigned to:

- Faculty members (professors and lecturers) of the School of Informatics.
- Members of the Special Scientific, Teaching, and Technical Staff of the School of Informatics, who hold a Ph.D. degree.
- Adjunct faculty of the School of Informatics, according to the Presidential Decree 407/80.
- Emeritus and retired faculty members of the School of Informatics.

If the aforementioned staff in all categories is not sufficient, the S.A. may assign teaching duties to faculty members of other Schools of the A.U.Th. or invite faculty members of other Universities or researchers from research centers/institutes listed in the article 13A, Law 4310/2014 (A' 258), including the research centers of the Academy of Athens and the Biomedical Research Foundation of the Academy of Athens. Furthermore, the S.A., by its decision, and having taken into consideration the recommendation of P.S.P. Director, may invite prominent scientists, who hold the position or qualifications of a University professor or researcher in a research center, or established scientists possessing specialized knowledge or demonstrating relevant experience in the themes taught in the P.S.P. from Greece or abroad, in accordance with par. 5, art. 36, Law 4485/2017, **as visitors**.

In any case, the assignment of teaching courses, seminars, and tutorials in the P.S.P. is decided by the S.A., following a proposal by the C.C.

The professors' obligations include, but are not limited to, the preparation of course syllabus, lectures' program, recommended literature, course examination, and interacting with the undergraduate students during office hours.

## **Article 9**

### **Revenues – Financial Management**

The revenues of the P.S.P. derive from any:

- (a) Funds from the budget of the A.U.Th. and the collaborating bodies in P.S.P. organization.
- (b) Funds from the budget of the Ministry of Education, Research, and Religious Affairs,
- (c) Tuition and application fees.
- (d) Donations, benefits, bequests and any kind of sponsorships by public sector bodies, as defined in case a' par. 1, art. 14, Law 4270/2014 (A' 143) or the private sector.
- (e) Resources from research programs.
- (f) Resources from programs funded by the European Union or other international organizations.
- (g) Income from the Special Account for Research Funds (ELKE) of the A.U.Th.
- (h) Other legitimate sources.

The fees for the admission application are set at € 40 and the full-time tuition fees are set at € 600 per semester, which can be adjusted by a decision of the C.C. and the approval of the Senate. The tuition fees for part-time students are set proportionally to the fees for full-time students taking into account the number of courses part-time students have enrolled in.

Pursuant to art.37 par. 4, Law 4485/2017 the management of the revenues of the P.S.P. is carried out by ELKE. 70% of the revenues are to support the operational expenses of the P.S.P. and the remaining 30% are to support University operating expenses.

Pursuant to paragraph 6 of the same article, the School of Informatics has to publish **annually**, by a post on its website, a statement of revenues and expenditure, indicating the distribution of expenses by category. In particular, tuition fees, faculty remuneration, and the number of the faculty members who received any remuneration have to be published.

## **Article 10**

### **Administrative Support – Infrastructure**

The School of Informatics provides the necessary administrative and technical support for the smooth operation of the P.S.P., through its Administrative and Support Staff, permanent or contracted employees to be hired for assistance.

Teaching of the P.S.P. courses is carried out in the classrooms of the School within the A.U.Th. Campus (Mezzanine of the School of Biology Building) and in the off-campus premises at Ethnikis Antistaseos Street 16, in the Municipality of Kalamaria. These classrooms are equipped with the necessary infrastructure (wireless networking, projectors, etc.). To prepare their projects (i.e., Diploma Theses or projects within the framework of the courses), the students are given access to software and hardware related to the offered courses, the computer pools of the School as well as any other equipment (e.g., magnetic motion sensors, video recording from multiple cameras, microphone arrays, brain-computer interfaces, unmanned aerial vehicles - drones) of the Artificial Intelligence and Information Analysis Laboratory in-campus and off-campus premises.

## **Article 11**

### **Commencement**

The commencement of MSc recipients takes place every March and July along with the inauguration of BSc recipients and Doctors conferment, in the presence of the University Authorities, the School Chair, and the P.S.P. Director. The details of the commencement are set by the relevant decision of the S.A.

## **Article 12**

### **Awarded MSc Degree**

The P.S.P. awards a Postgraduate Diploma (MSc) in Digital Media - Computational Intelligence. The MSc title is a public document issued by the Secretariat of the P.S.P. The degree explicitly mentions the School of Informatics, the date of completion of studies, the date of issuance of the MSc, the graduation protocol number, the title of the P.S.P., the graduate's identity, and the grade of Good, Very Good, or Excellent. The Degree also bears the emblems of the School of Informatics and the A.U.Th.

The graduates of the P.S.P. may be given a certificate for successful attendance and completion of the program prior to the graduation ceremony.

In addition to the Degree of Postgraduate Studies, a Diploma Supplement is granted [article 15 of Law 3374/2005 and the Ministerial Decision Φ5/89656/BE/13-8-2007 (Government Gazette 1466 v.B')]. The Diploma Supplement provides information on the nature, level, general training curriculum, syllabus, and study status, which have been successfully concluded. It is not a substitute for the official degree or the transcript awarded by the School of Informatics.

### **Article 13 Plagiarism**

By submitting any project/thesis, the student is obliged to state whether he or she has used the work and the views of others.

Cheating is considered a serious academic misconduct. Plagiarism is the copying of someone else work, as well as the use of another person's work - whether published or not - without proper citation. The usage of any documentation material, even from studies conducted by the student himself, without citation thereto, may be cause for the S.A. to expel the student.

In the above cases - and after a justified proposal by the supervising professor - the S.A. may decide to expel the student.

Any misconduct or violation of academic ethics is referred to the P.S.P. C.C. for thorough review and proposal submission to the S.A. which resolves the issue. Cheating, plagiarism, and any violation of the provisions concerning intellectual property by a student relating to projects within the framework of courses or the Diploma Thesis, are also considered infringements in accordance with Law 5343/1932 (Articles 120 to 123) and Presidential Decree 160/2008 (Articles 23 to 25).

### **Article 14 Other Provisions**

Any issue in the future that is not covered by relevant legislation or the present Postgraduate Studies Regulation will be addressed by decisions of the S.A. and the Senate of the A.U.Th. via the amendment of the Regulation and after publication in the Government Gazette.