



School of Informatics AUTH

**Postgraduate Program
Digital Media – Computational Intelligence**

M2.3 Study Guide

December 2023

ARISTOTLE UNIVERSITY OF THESSALONIKI
FACULTY OF SCIENCES
SCHOOL OF INFORMATICS

GUIDE FOR POSTGRADUATE STUDIES ON
“DIGITAL-MEDIA – COMPUTATIONAL INTELLIGENCE”

ACADEMIC YEAR
2023-2024

THESSALONIKI 2023

This guide was edited by Professor C. Kotropoulos, Asc. Professor N, Laskaris, and Professor C. Ouzounis. The Secretariat staff: Mrs. M. Milosi, Mr. S. Goutzamanis, Mrs. E. Triikka, and Mrs. A. Kournoutou have contributed to data collection.

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1. PREFACE

The School of Informatics of the Faculty of Sciences of the Aristotle University of Thessaloniki (A.U.Th.) was established in 1991. The first undergraduate students were admitted in the academic year 1992-1993. The foundation of the School was a milestone for the Faculty of Sciences and A.U.Th., bringing a particularly important impact on the scientific life and technological development of the city of Thessaloniki.

The School of Informatics welcomes every year new students who managed to be highly ranked in the Greek national-level qualifications exams while a high percentage of them achieved excellence. The continuous efforts of the faculty personnel in teaching and research, the infrastructure amelioration, and the hiring of new faculty members have made the School of Informatics well reputed at national and international levels. The quality of the School is also evident in the recent and past accreditations by external evaluators who acknowledged the high educational and research quality. The Evaluation and Accreditation Council of the Hellenic Authority of Higher Education (HAHE) based on the assessment of the External Assessment and Accreditation Committee has accredited the Program of Undergraduate Studies of the School of Informatics at A.U.Th. (protocol number 23242/16-7-2021). The Program of Undergraduate Studies fully complies with the principles of the European Higher Education Area (ESG 2015) for studies level 6 of the National and European Qualification Framework. The duration of the accreditation is for 4 years, from 13-07-2021 until 12-07-2025. The School of Informatics is firmly listed in the top University rankings in the fields of Computer Science and / or Computer Engineering. In the current academic year, it is ranked in the positions 401-500 in the world rankings of Times Higher Education list, 251-300 in the Quacquarelli Symonds rankings, 49 of the CWTS Leiden ranking (with PP-10% criterion, i.e., the portion of publications that are classified in top 10%), and at 326 position in the US News rankings.

The School of Informatics proceeds to the accreditation of the Postgraduate Studies Programs (PSPs), i.e., M.Sc. Programs, offered according to Law N.4957/2022. In particular, the PSP in “Digital Media – Computational Intelligence) is an existing foreign language PMS pursuant to the Senate decision No. 45339/13-6-2021 (Government Gazette B’ 3501) which modified prior Senate decisions a) No 29312/10-7-2018 (Government Gazette B’ 3648) regarding the establishment and b) 35140/3-10-2019 (B’ 3843) regarding the approval of the regulation as it was modified from the initially approved one pursuant to the Senate decision No. 4202/16-10-2020 (Government Gazette B’ 4727) of the PSP on “Digital Media -Computational Intelligence of the School of Informatics at the Faculty of Sciences of the Aristotle University of Thessaloniki (A.U.Th.). The program has been offered for 14 years as a specialization of the PSP program on “Informatics and Communications” of the School of Informatics until 2017. The program was reinstated a new as an autonomous PSP according to Greek law in 2018.

The mission of the PSP in “Digital Media – Computational Intelligence is to prepare high-level skilled personnel in cutting-edge domains of Informatics and in particular in the domain of Digital Media and Computational Intelligence and the elevation of associated research, so that its graduates can successfully meet the requirements of openings in the Private and Public Sector and staff Research Foundations, Higher Education Institutions and Knowledge-Intensive Private Enterprises.

The mission of PSP in “Digital Media-Computational Intelligence” of the A.U.Th. are fulfilled by attending 8 courses distributed evenly between the first two semesters, followed by a MSc diploma thesis reporting on the outcome of a substantial research project completed during the third semester following international standards which guarantee training and expertise in the fields of Digital Media and Computational Intelligence, i.e., gaining foundations in Signal/Image/Video Processing, Computational Vision, Graphics, Virtual Reality, Pattern Recognition/Computational Intelligence and the related technologies (e.g., Deep Neural Networks, Brain Interfaces, Language Technology, Bioinformatics-Digital Biology, Games).

On behalf of the faculty members, the researchers, and the administrative staff, we would like to congratulate and welcome all freshmen graduate students for their admission to an accomplished PSP and wish the entire academic community, a happy, healthy, and creative academic year 2023-2024!

Ioannis Stamelos
Head of the School of Informatics

Christos Ouzounis
Director of PSP in
“Digital Media – Computational Intelligence”

2. PROGRAM OVERVIEW

In a world flooded with digital content, young scientists should be able to manage information, develop intelligent algorithms for various applications (e.g., information retrieval, content understanding, diagnostics control, autonomous navigation), and compose virtual worlds that will please the user-consumer. Following the current trends in data-driven information analysis, the PSP aims to equip its graduate students with spherical knowledge in signal processing, computer vision, computational intelligence, graphics, and robotics. It aims to prepare graduates to build successful careers in a wide range of professions, including not only the fields of digital media and computational intelligence, but also areas such as autonomous systems, brain interfaces, bioinformatics and digital biology, finance, innovation, consulting, project management and employment in government agencies. PSP core comprises algorithmic techniques that support the seamless interaction of the computer with digital media which define the style of the upcoming reality in daily living, communication, education, entertainment, medical care and transactions.

The PSP in Digital Media-Computational Intelligence presents an exciting challenge for those wishing to build a profile in this dynamic domain. The program offers a deepening in computer science toward the development of intelligent machines, but also broadening the graduates' professional horizon through their acquaintance with the multidimensional universe of digitized information.

Our graduates have gone on to have rewarding careers in some of the leading national or multinational companies, such as NCR, SRI International, Amazon, Deloitte U.K., BETA CAE Systems, Wind Hellas, or government agencies (e.g., forensics experts in the Hellenic Police). Many graduates have chosen a research-oriented career, pursuing doctoral studies and/or gaining faculty positions at leading universities, such as Texas A&M, USA; Imperial College, U.K.; Henan University, China; Trinity College, Ireland; Middlesex University, U.K.; University of Maastricht, The Netherlands; National and Kapodistrian University of Athens; Aristotle University of Thessaloniki as well as major research institutes (e.g., Information Technologies Institute /Centre for Research and Technology Hellas). In addition, PSP graduates may be employed as

- Digital content creators/managers/analysts
- Designers of intelligent systems and applications
- Information Technology technical project managers
- Project managers in Information Technology or digital media companies.

3. THE FACULTY OF SCIENCES

The Faculty of Sciences was established in 1925 (until 1982 was called Faculty of Physics and Mathematics). The Faculty of Sciences comprises six (6) Departments (Schools):

1. Department of Biology
2. Department of Geology
3. Department of Mathematics
- 4. Department of Informatics**
5. Department of Physics
6. Department of Chemistry

DEAN'S COUNCIL

DEAN

Prof. Hara Charalambous Department of Mathematics

MEMBERS

Prof. M. Giagkou	Head of the Department of Biology
Asc. Prof. K. Vouvalidis	Head of the Department of Geology
Asc. Prof. R. D. Malikiosis	Head of the Department of Mathematics
Prof. I. Σταμέλος	Head of the Department of Informatics
Prof. A. Ioannidou	Head of the Department of Physics
Prof. Th. Karapantsios	Head of the Department of Chemistry

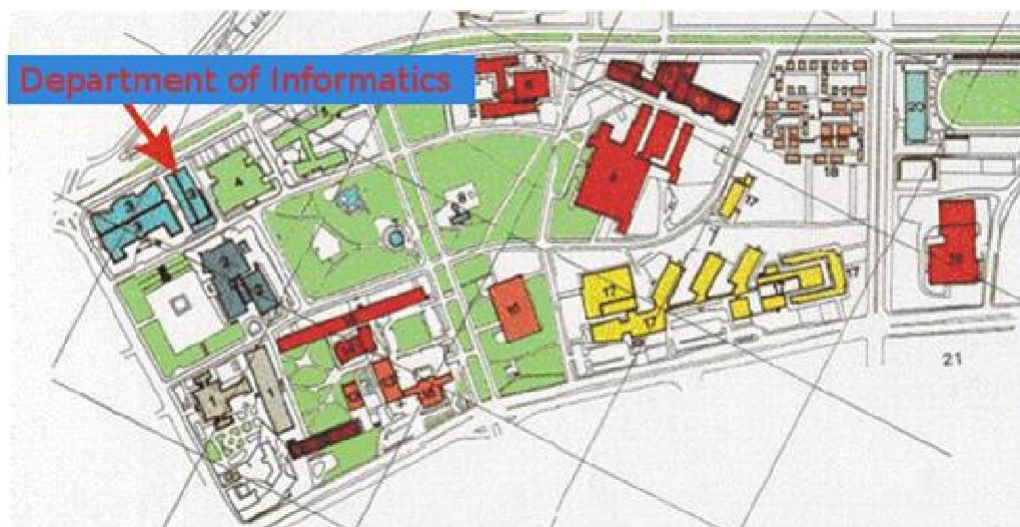
SECRETARY

Dr. E. Raftopoulou

4. THE SCHOOL OF INFORMATICS

The School of Informatics was established in 1992 within the Faculty of Sciences. The School managed by the Departmental Assembly (DA), whose participants include all faculty members, representatives of the Specialized Educational Personnel, Specialized Administrative and Technical staff, and the students.

In addition to premises in the Aristotle University campus shown in the map, the off-campus premises of the Department are located at 16 Ethnikis Antistaseos str., Kalamaria, including lecture rooms, laboratories, faculty and administrative staff offices (see the map: <http://tinyurl.com/csd-A.U.Th.-east>).



Map legend of the Aristotle University Campus

1. Department of Philosophy
2. Department of Chemistry
- 3. Faculty of Sciences**
4. Departments of Agriculture and Forestry & Natural Environment
5. Department of Veterinary Medicine
6. Medical School
7. Meteorological Station
8. Observatory
9. AHEPA University Hospital
10. Faculty of Dentistry
11. AHEPA University Hospital
12. Faculty of Theology
13. A.U.Th. Administration Building
14. Faculty of Law, Economics, and Political Sciences
15. Ceremony Hall
16. Central Library – Reading Room
17. Faculty of Engineering
18. Faculties of Physical Education & Sports Science, Education, and Fine Arts
19. Student Club
20. University of Sports Centre

21. University of Macedonia

Pursuant to Rector's Act No. 3146/23-10-2017 (Government Gazette 3950/10-11-2017 t.B'), three divisions (sectors) were established in the department. Each division serves the educational and research needs in specific academic areas related to its mission.

A. Web, Data and Knowledge Engineering Division

Director: Professor Athina Vakali

Scientific areas:

1. Logic Programming and Intelligence Systems
2. Knowledge Representation and Reasoning
3. Machine Learning and Knowledge Discovery
4. Operating Systems and Web Systems
5. Programming Techniques for Problem Solving
6. Artificial Intelligence
7. Web Information Systems
8. Digital Social Networks
9. Data Structures
10. Databases
11. Algorithms and Computational Complexity
12. Data Mining
13. Information Retrieval
14. Big Data Analytics
15. Distributed and Massively Parallel Systems
16. Infometrics

Two research laboratories belong to this division:

Data and Web Science Laboratory (DataLab)

Director: Professor Athena Vakali

Members:

1. Anastasios Gounaris (Associate Professor)
2. Apostolos Papadopoulos (Associate Professor)
3. Georgios Christodoulou (Associate Professor)

Webpage: <https://datalab.csd.auth.gr/>

Intelligent Systems Laboratory (ISL)

Director: Professor Ioannis Vlahavas

Members:

1. Nick Bassiliades (Professor)
2. Dimitrios Vrakas (Assistant Professor)
3. Georgios Meditskos (Assistant Professor)
4. Grigorios Tsoumakas (Associate Professor)

Webpage: <https://intelligence.csd.auth.gr/>

B. Software, Hardware and Foundations Division

Director: Associate Professor Panagiotis Katsaros

Scientific areas:

1. Software Engineering
2. Reliability and Security in Software
3. Information and Communication Technologies in Education
4. Internet Educational Technologies
5. Computer Music Technologies
6. Human – Computer Interaction
7. Open Technologies
8. Embedded Systems
9. Statistics and Information Systems
10. Electronics and Microelectronics
11. Computer Architecture
12. Applied Mathematics
13. Information Theory – Theoretical Cryptography
14. Operations Research and Decision Making
15. Optimization Algorithms
16. Linear Algebra

Two research laboratories belong to this division:

Software and Interactive Technologies Laboratory (SWITCH)

Director: Professor Ioannis Stamelos

Members:

1. Stavros Dimitriadis (Professor)
2. Christos Katsanos (Assistant Professor)
3. Panagiotis Katsaros (Associate Professor)
4. Dionysios Politis (Assistant Professor)
5. Thrasyvoulos Tsiatsos (Associate Professor)

Webpage: <http://switch.csd.auth.gr/>

Statistics, Applied Mathematics and Electronic Physics Laboratory (SAMEP Lab)

Director: Professor Nikos Konofaos

Members:

1. Lefteris Angelis (Professor)
2. Konstantinos Draziotis (Assistant Professor)
3. Georgios Keramidas (Assistant Professor)
4. Nikolaos Tsitsas (Associate Professor)

Webpage: <http://samep.csd.auth.gr/>

D. Communication Networks and Information Analysis Division

Director: Professor Petros Nikopolitidis

Scientific areas:

1. Computer Communication Systems
2. Distributed Systems
3. Optical Communication Systems
4. Optical Communications
5. Wireless Networks
6. Communication Networks
7. Optical Networks
8. Biological Nanonetworks
9. Expert Systems - Artificial Intelligence
10. Digital Signal Processing
11. Computer Graphics - Digital Image Synthesis
12. Computational Intelligence - Deep Reinforcement Learning
13. Digital Signal Processing in Biomedicine - Bioinformatics
14. Robot Perception
15. Virtual/Enhanced Reality
16. Big Data/Network Information Analysis

Two research laboratories belong to this division:

Artificial Intelligence & Information Analysis Laboratory (AIIA Lab)

Director: Professor Ioannis Pitas

Members:

1. Constantine Kotropoulos (Professor)
2. Nikolaos Laskaris (Associate Professor)
3. Nikolaos Nikolaidis (Associate Professor)
4. Christos Ouzounis (Professor)
5. Anastasios Tefas (Professor)

Webpage: <https://aiia.csd.auth.gr/>

Network and Communication Systems Laboratory (NetCom Lab)

Director: Professor Giorgos Papadimitriou

Members:

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1. Amalia Miliou (Professor)
 2. Petros Nikopolitidis (Professor)
 3. Nikolaos Pleros (Associate Professor)
 4. Konstantinos Kantelis

Webpage: <http://netcom.csd.auth.gr/>

5. SCHOOL OF INFORMATICS PERSONNEL

Head	Deputy Head	Secretary
Prof. Ioannis Stamelos	Prof. Georgios Papadimitriou	Maria Milosi
Professors	Eleftherios Angelis Ioannis Vlahavas Athena Vakali Nick Bassiliades Stavros Dimitriadis Nikolaos Konofaos Constantine Kotropoulos Amalia Miliou Petros Nikopolitidis Christos Ouzounis Georgios Papadimitriou Ioannis Pitas Ioannis Stamelos Anastasios Tefas	
Associate Professors	Anastasios Gounaris Panagiotis Katsaros Nikolaos Laskaris Nikolaos Nikolaidis Apostolos Papadopoulos Nikolaos Pleros Apostolos Papadopoulos Nikolaos Tsitsas Grigorios Tsumakas Georgios Christodoulou	
Assistant Professors	Dimitris Vrakas Konstantinos Draziotis Konstantinos Kantelis Christos Katsanos Georgios Keramidas Georgios Meditskos	

Dionysios Politis

Former Faculty Members

Eleni Karatza (Emeritus Professor)
Konstantinos Lazos (Emeritus Professor)
Ioannis Manolopoulos (Emeritus Professor)
Ioannis Tsoukalas (Emeritus Professor)
Georgios Bleris †¹
Kostas Karanikas
Andreas Pomportsis †²
Miltiadis Chatalis
Panagiotis Linardis
Nikolaos Atreas
Alexandros Nanopoulos

**Specialized Administrative and
Technical Staff**

Stavros Stavroulakis (seconded in rector's office)

Secretariat

Maria Milosi (head)
Spiros Gkoutzamanis
Anna Kakokyri
Eirini Triikka

Faculty Secretariat

Georgia Theochari

Kalamaria Premises Administrative Support

Konstantina Lagotheodorou

¹ Georgios Bleris was a Professor of the Department during the period 1998-2005. He passed away on April 17, 2005.

² Andreas Pomportsis was a Professor of the Department during the period 1993-2013. He passed away on September 1, 2013.

6. PSP PERSONNEL

DIRECTOR

Professor Christos Ouzounis

SECRETARY

Maria Milosi

PROFESSORS

Constantine Kotropoulos

Ioannis Pitas

Anastasios Tefas

ASSOCIATE PROFESSORS

Nikolaos Laskaris

Nikolaos Nikolaidis

SECRETARIAT

Eirini Triikka

7. GENERAL INFORMATION FOR POSTGRADUATE COURSES

1. The academic year starts on September 1st and ends on August 31st of the next calendar year. Each academic year consists of two semesters. Each semester comprises of at least thirteen (13) full weeks devoted to educational activities.
2. The fall semester starts the last week of September and ends at the beginning of the last ten days of January. The exams of the fall semester follow. The spring semester starts in mid-February and ends at the end of May. The exams of the spring semester follow. The exact days are decided by the Departmental Assembly and comply with the University academic calendar (https://www.auth.gr/academic_calendar).
3. If, for any reason, the educational activities of a specific course lasted for less than thirteen weeks, the course would be considered incomplete, and no examinations will take place at the end of the semester.
4. In outstanding circumstances, it is possible to extend the duration of the semester for up to two weeks so that the educational activities of a course are completed. This decision must be made by the Rector following recommendations by the Deanery of the Faculty of Sciences and the Departmental Assembly.
5. The students enroll in the PSP at the beginning of each semester and register to specific courses on dates set by the Department.
6. Pursuant to a recommendation by the Coordinating Committee of the PSP and a decision by the Departmental Assembly part-time graduate studies can be granted under specific terms. The maximum duration of part-time graduate studies is set to six (6) semesters. The specific terms which support an application for part-time graduate studies are a) Postgraduate students that can prove that they work for at least 20 hours per week attaching a certificate from their employer; b) non-working postgraduate students, who are unable to meet the minimum requirements of the full-time graduate program due to special cases, such as long-term illness or hospitalization for more than 15 days, threatened pregnancy, serious family reasons, conscription, or force majeure, attaching necessary proofs.
7. Course exams are conducted only after the fall and spring semesters for the courses taught in these semesters, respectively. In both examination periods, the student can be examined only in courses he/she has selected at the beginning of fall and spring semesters. Special care is taken for the oral examination of students with proven dyslexia prior to admission to the PSP.
8. No classes are held during the two examination periods. Classes are interrupted on public holidays as defined by the Institution's academic calendar. The public holidays include the period from Christmas Eve until the next day of the Epiphany, the period from Tyrophagus Thursday to the next day of clean Monday, and from Holy Monday to Thomas Sunday. In addition, no classes nor exams take place on weekends and during the following dates:
 - October 26th - St. Demetrius Fest
 - October 28th - National holiday
 - November 17th – anniversary of the uprising in National Technical University in 1973

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- January 30th – Three hierarchs’ Fest
 - March 25th - National holiday
 - May 1st - Labor Day
 - Holy Spirit Fest.
9. The curriculum is divided into semester courses. Educational activities include a) courses taught autonomously by faculty members; b) specialized in-depth courses taught in small groups of students autonomously by faculty members; c) the laboratory exercises or internships in general; d) the supervision of assignments or diploma theses, and: e) the organization of seminars or other similar educational activities aimed at consolidating or advancing students' knowledge.
 10. The Curriculum includes the title, content, and weekly schedule (lectures, laboratory practices etc.) of all courses, including any educational activities as well as their temporal evolution and dependencies. According to the National Qualifications Framework for Higher Education, the curriculum also contains the learning outcomes and qualifications obtained from the whole curriculum as well as from each individual course or educational activity or internship included therein. The credit units of each course, as well as the level of qualifications acquired, are matched with the rules set by the National Qualifications Framework, the European Lifelong Learning Qualifications Framework, and the Qualifications Framework of the European Higher Education Council.
 11. Course textbooks (in printed or electronic form, including open access electronic books) and course materials (e.g., articles from major publishers accessible through HEAL Link, teaching notes and slides available through the course web page at <https://elearning.auth.gr>) are suggested to postgraduate students. Course textbooks and course material respond to course contents subject and cover all or most topics taught, as specified in the postgraduate studies regulation.
 12. During the first week of classes, each tutor should distribute to all students enrolled to his/her course, the schedule, the study plan, which includes the course syllabus, related bibliography, and supplementary documentation (if any).
 13. Student grading is determined by the course instructor who can conduct written and/or oral exams or any combination of written/oral exams and project/laboratory exercises assignments.
 14. Each semester course contributes a specific number of credits according to the European Credit Transfer System (ECTS). The ECTS credits get a numerical value assigned to each course representing the workload required by the student to successfully complete the course. A single ECTS credit corresponds to 30 hours of workload. One semester corresponds to 30 ECTS credits, while one full academic year corresponds to 60 ECTS credits.
 15. Postgraduate students can suspend their studies up to two (2) continuous semesters. The applicable procedure is detailed in article 5 of the Regulation of Postgraduate Studies.
 16. The students can obtain useful information related to the curriculum (course syllabus, class and exam schedule, assignments, laboratory practices, course transparencies, etc.) from the following websites <https://www.csd.auth.gr>, <https://dmci.csd.auth.gr>, and <https://elearning.auth.gr/>. Announcements and information about the School can also be found on the School’s and PSP’s Facebook page (<https://www.facebook.com/csdauthgr/>, <https://www.facebook.com/dmci.csd/>).
 17. In every semester, prior to the examination period, students have the right and obligation to evaluate the courses and the instructors in order to improve the quality of the studies. More information is available on the Quality Assurance Unit's website (MODIP-A.U.Th

<https://qa.auth.gr/>) and the School website.

18. In case of disciplinary offense (such as, copying during exams, use of forbidden electronic means during exams, plagiarizing from other sources without proper citation in MSc theses/project reports.), the Departmental Assembly imposes penalties pursuant to Coordinating Committee recommendation.

ALUMNI PORTAL

School of Informatics (including its PSPs) alumni portal can be found at <http://grads.csd.auth.gr/> whose mission is to maintain the communication with the students after their graduation.

8. STUDIES REGULATION

The PSP in “Digital Media-Computational Intelligence” awards a master’s degree. Since the Academic Year 2018-19, the School of Informatics of the A.P.Th. has offered autonomously the PSP.

The necessary adaptation of the Establishment Decision and the Internal Regulation of Operations of the PSP according to Law 4957/2022 is in progress (Appendix M2.1). The necessary documents will be submitted to HAHE when they are approved by the Senate of the Re-establishment (Decision). The Internal Regulation of Operation of the PSP contains the following articles:

- Article 1. Objective of the Postgraduate Studies Program (PSP)
- Article 2. Administrative Bodies of the PSP
- Article 3. Candidates
- Article 4. Number of Approved Students, Criteria and Procedure of Selection
- Article 5. Duration and Terms of Studies
- Article 6. Curriculum – Knowledge Assessment
- Article 7. Scholarships
- Article 8. Faculty (Tutors)
- Article 9. Revenues - Financial Management
- Article 10. Administrative Support – Infrastructure
- Article 11. Commencement
- Article 12. Awarded MSc Degree
- Article 13. Plagiarism
- Article 14. Other provisions.

Article 6 has been revised twice regarding the courses offered and the option the courses to be taught in English: [Gov. Gazette 4727 tB/2020](#) and [Gov. Gazette 3501 tB/2021](#). Pursuant to the above decisions, the official teaching/examination language of the program is English with the possibility of teaching/examination in Greek as well, as long as no foreign postgraduate students have been registered. Recommended reading in all courses is in English. The language of the postgraduate thesis can be English or Greek.

European Credit Transfer System (ECTS)

The ECTS system was developed within the framework of the European Community Action Scheme for the Mobility of University Students (ERASMUS) program in order to facilitate the procedures for academic recognition of studies abroad by evaluating and/or transferring the work of the participating student (transfer of credit units) between the cooperating institutions. ECTS is based on the principle of mutual trust between participating institutions.

ECTS credits are a numerical value allocated to course units to describe the student's workload required to complete them. They reflect the quantity of work each course requires in relation to the total quantity of work necessary to complete a full year of academic study at the institution, that is, lectures, practical work, seminars, tutorials, field-work, private study - in the library or at home - and examinations or other assessment activities. ECTS is thus based on a full student workload and not limited to contact hours only. In ECTS, 60 credits represent the workload of an academic year of study, whereas the workload for a semester and a term (defined as a 4-month period) usually corresponds to 30 and 20 credits respectively. Each ECTS credit unit corresponds to 30 hours of workload under Greek law regulations.

9. POSTGRADUATE STUDIES PROGRAMS - PHD STUDIES

Autonomous Postgraduate Studies Programs

Since the academic year 2018-2019, the School of Informatics offers another (4) new Postgraduate Studies Programs.

Postgraduate Studies Program (MSc) "Artificial Intelligence"

Director: Associate Professor Grigorios Tsoumakas

Website: <https://ai.csd.auth.gr/en/>

Postgraduate Studies Program (MSc) "Data and Web Science"

Director: Associate Professor Anastasios Gounaris

Website: <https://dws.csd.auth.gr/en/>

Postgraduate Studies Program (MSc) "Interactive Hardware and Software Technologies"

Director: Professor Nikolaos Konofaos

Website: <https://ihst.csd.auth.gr/en/>

Postgraduate Studies Program (MSc) "Communication Networks and Systems Security"

Director: Professor Amalia Miliou

Website: <https://cnss.csd.auth.gr/en/>

Contact info:

Secretariat of the School of Informatics Aristotle University of Thessaloniki

Thessaloniki 541 24

E-mail: pms_info@csd.auth.gr

Tel: 2310998930, 2310998709, 2310998410 Fax: 2310998310

Joint Postgraduate Studies Programs (MSc)

The Department of Informatics participates in three Joint Postgraduate Studies Programs.

(a) Joint Postgraduate studies program (MSc) on “Management and Information Systems” (offered by the School of Informatics and School of Economic Sciences of the A.U.Th.)

Director: Professor Nikolaos Bassiliades

Website: <https://deps.csd.auth.gr/>

Contact info:

Secretariat of the School of Informatics Aristotle University of Thessaloniki

Thessaloniki 541 24

E-mail: deps_info@csd.auth.gr

Tel: 2310998930, 2310998709, 2310998410 Fax: 2310998310

(b) Joint Postgraduate studies program (MSc) on “Medical Informatics” (offered by the Medical School, the Department of Electrical and Computer Engineering, and the School of Informatics of A.U.Th.).

Director: Professor Antonios Aletras

Website: <http://promesip.med.auth.gr/>

Contact info:

Laboratory of Medical Informatics Medical School

Aristotle University of Thessaloniki

Thessaloniki 541 24

E-mail: promesip@med.auth.gr Tel: 2310999272 Fax: 2310999263

(c) Joint Postgraduate studies program (MSc) on “Biomedical Engineering” (offered by the Departments of Biology, Electrical and Computer Engineering, Medical Engineering, Chemical Engineering, the Medical School and the School of Informatics).

Director: Professor Dimitrios Kougioumtzis

Ιστοσελίδα: <https://bme.web.auth.gr>

Contact Info:

E-mail: bme@auth.gr

DOCTORAL STUDIES

The School of Informatics awards a doctoral degree in a wide range of research fields. The research of the PhD candidates is supervised by the Professors of the School who all have extensive research experience in their knowledge domains. The results of the doctoral thesis research are published in leading conferences and journals under the auspices of the most important scientific organizations in Computer Science, such as: Association for Computing Machinery (ACM) and Institute of Electrical and Electronics Engineers (IEEE). The Doctoral Studies Program operates

as a 3rd cycle PSP according to the internal regulation (Decision 12875, Government Gazette No. 3359, τ.Β/August 10th, 2018).

Website: <https://www.csd.auth.gr/en/studies/doctoral-studies>

10. STUDENT MOBILITY

ERASMUS+ PROGRAM

Information on the mobility of postgraduate students with the ERASMUS+ program (Mobility for Studies), adopting the good practices for the proper operation of the program approved by the AUTH Senate are provided by the ERASMUS+ Coordinator at the Department of Informatics, the Department's website <https://www.csd.auth.gr/en/studies-en/llp-erasmus-program/> as well as by the Department of European Educational Programs (D.E.E.P.) at <https://eurep.auth.gr/en>.

11. USEFUL SERVICES TO STUDENTS

Anyone studying at Aristotle University of Thessaloniki may request the assistance of special University services in order to solve various problems they may face during their studies. They can also become themselves volunteers by offering their services to other colleagues or fellow students in need.

Website: <https://www.auth.gr/services>

SOCIAL POLICY AND HEALTH COMMITTEE

The Social Policy and Health Committee (SPHC) aims to create conditions that will make the University an accessible area to all members of the University community, by giving priority to space (and therefore knowledge) accessibility to disabled persons.

For this reason, qualified members of the teaching staff can train students with visual impairment to use electronic equipment linked with Braille printers installed in some of the University libraries. Also, the SPHC tries, to the extent possible, to ensure the granting of books with voice output to these students.

The SPHC also provides a bus for disabled persons, in order to facilitate their movement in the campus for classes and exams during the academic year. It is worthwhile to mention that the University has created a Program for the Promotion of Self-Help, which is basically run by a team of volunteers, the majority of whom are students (E-mail: selfhelp@auth.gr, website: <https://www.selfhelp.gr/en/>).

Many years ago, the Social Policy and Health Committee established the institution of Voluntary Blood Donation, which also led to the creation of a Blood Bank in AHEPA hospital. Since May 2007, a second Blood Bank was founded too, in the Department of Physical Education in Serres

with the collaboration of the Social Policy and Health Committee and the General Hospital of Serres. Voluntary blood donation takes place twice a year during the months of November and April, at the Ceremony Hall of Aristotle University. The target is to cover all needs for blood through voluntary blood donation, which currently covers 40% of total needs. Volunteering for blood donation, which is a safe and a complications-free procedure, is open to every person above 18 years old, who does not have special health problems.

E-mail: socialcom@ad.auth.gr

Website (in Greek): [EKPY @ facebook](#)

Tel./Fax: 2310 995386, 2310 995360

COUNSELLING AND PSYCHOLOGICAL SUPPORT COMMITTEE

The Counselling and Psychological Support Committee aims to the better organization and function of the University structures that offer psychological assistance and counselling to AUTH students.

The services provided by the University Centre for Counselling and Psychological Support are offered to students and University staff alike. The Committee works closely with other related Committees and organizes workshops with students, as well as with the administrative and other staff of the University community. Among the future aims of the Committee is the operation of a campus hotline, in order to provide immediate assistance to people in crisis and to those facing personal difficulties that could feel safer to talk about their problems in anonymity and in absence of visual contact.

The Counselling and Psychological Support Committee is located on the ground floor of the University Student Club, in the Sanitary Service Section at offices 5 & 8.

Website: <https://kesypsy.web.auth.gr/>

E-mail: vpapadot@ad.auth.gr

Fax: 2310 992607 & 210992621

VOLUNTEER COMMITTEE

The Volunteer Committee has as its prime goal to promote to the members of AUTH University the idea of volunteering as a contemporary social demand. In this direction, the Volunteer Committee having also as its motivation the improvement of the daily life of everyone working in Aristotle University –students, teaching, and administrative staff– in areas such as student affairs, environmental issues and social aid, and encourages all members of the University community to take initiative by submitting ideas and suggestions. To this end, some Networks of Volunteers in Departments and Faculties have already been created, consisting of a faculty member and a student, in order to develop a body of volunteers in each Department /Faculty of AUTH.

E-mail: vrect-ac-secretary@auth.gr

Tel: 2310996713, 996708

Fax: 2310996729

SURVIVAL GUIDE

The Department of Studies of the Aristotle University of Thessaloniki (<https://dps.auth.gr/en>) publishes a Survival Guide targeting primarily at first-year students that offers useful information about the city of Thessaloniki and the Aristotle University.

LIAISON OFFICE

The A.U.Th Liaison Office is a hub for information, support, networking and encouragement for students and graduates of the Institution in matters of study and professional career. The services and actions developed and being developed, evolve daily according to the current trends. They have a single goal: to help students and graduates building their professional career, discover their skills and apply to job openings in the modern, competitive environment or even start their own business. The Liaison Office provides information on postgraduate studies in Greece and abroad, scholarships and endowments as well as advisory support. It also organizes counseling workshops, entrepreneurship workshops, career events, career days. It also announces new jobs and internships.

Webpage: <https://career.auth.gr>

12. CURRICULUM AND TUTORS

The basic elements of the detailed Curriculum (Studies Program) of the PSP are as follows:

- There are no specializations, it is a single program.
- The courses are taught in English with the possibility of offering them in Greek as well. The bibliography of each course is basically in English.
- ECTS credits of each course: 7,5 credit units.
- ECTS credits of the MSc diploma thesis: 30 credit units.
- Total ECTS credits of the PSP: $(8 \times 7,5) + 30 = 90$ credit units.
- The workload of a full-time postgraduate student during an academic year is evaluated at sixty (60) credit units, and during an academic semester it is evaluated at thirty (30) credit units (ECTS).

Important points are the following:

- Student grades in postgraduate courses are reported on a scale of 0-10 with an accuracy of one tenth of a unit. A passing grade of six (6) is set for both the graduate courses or for any undergraduate courses and the postgraduate diploma MSc thesis.
- The postgraduate student has the obligation to attend and be successfully examined in eight (8) courses of the first and second semesters and to successfully carry out a post-graduate diploma (MSc) thesis.
- The duration of postgraduate studies which leads to the award of the Postgraduate Studies (MSc) Diploma is defined at three (3) academic semesters for full-time post-graduate students at least, which includes the time for preparation and assessment of the post-graduate diploma (MSc) thesis.
- The maximum time allowed to complete the studies is set at four (4) academic semesters in the case of full-time study and at six (6) semesters for part-time study.

Learning Outcomes:

- apply knowledge in practice
- communicate in a second foreign language
- search, process, analyze and synthesize data and information, use also the necessary technologies,
- adapt to novel situations and make decisions,
- work independently or in groups in international and/or interdisciplinary contexts,
- generate new research ideas and design and
- manage projects,
- respect diversity, multiculturalism and the natural environment,
- demonstrate social, professional and moral responsibility and sensitivity to gender issues,
- reflect on themselves and on others critically,
- promote free, inductive and deductive thinking.

In the following, the courses of the PSP are listed per semester for the academic year 2023-2024, The title of each course refers to a hyperlink that points to the analytical description of the course in the webpage of the Quality Assurance Unit (MODIP) of A.U.Th.

1st Semester

Code	TITLE	HOURS	ECTS	TYPE	TUTORS
DMCI101	Computational Vision/Προχωρημένη Υπολογιστική Όραση	3	7,5	CE ³	I. Pitas
DMCI102	Computational Intelligence-Statistical Learning/Υπολογιστική Νοημοσύνη -Στατιστική Μάθηση	3	7,5	CE	A.Tefas
DMCI103	Statistical Signal Processing – Time Series/Στατιστική Επεξεργασία Σημάτων – Χρονοσειρές	3	7,5	CE	C. Kotropoulos
DMCI104	Biosignal Analysis – Neuroinformatics/Ανάλυση Βιοσημάτων -Νευροπληροφορική	3	7,5	CE	N. Laskaris
DMCI105	Games and Artificial Intelligence/Παιχνίδια και Τεχνητή Νοημοσύνη	3	7,5	CE	N. Nikolaidis
DMCI107	Dynamic Systems: Applications to signals, robotics, and finance/Δυναμικά Συστήματα: Εφαρμογές σε Σήματα, Ρομποτική, Οικονομία *	3	7,5	CE	C. Kotropoulos
DMCI108	Bioinformatics and Digital Biology/Βιοπληροφορική και Ψηφιακή Βιολογία	3	7,5	CE	C. Ouzounis

* Course DMCI106 [Complex Systems: From the society to the web/Πολύπλοκα Συστήματα: Από την Κοινωνία στο Web](#) is offered every other year. It will be offered the academic year 2024-2025.

2nd Semester

CODE	TITLE	HOURS	ECTS	TYPE	TUTORS
DMCI201	Deep Learning and Multimedia Information Analysis/Βαθιά Μάθηση και Ανάλυση Πολυμεσικών Δεδομένων	3	7,5	CE	A.Tefas
DMCI203	Autonomous System Perception/Αντίληψη Αυτόνομων Συστημάτων	3	7,5	CE	I. Pitas
DMCI204	Signal Processing for Brain Interfaces/Επεξεργασία Σήματος για Εγκεφαλικές Διεπαφές	3	7,5	CE	L. Laskaris
DMCI205	Virtual Reality/Εικονική Πραγματικότητα	3	7,5	CE	N. Nikolaidis
DMCI206	Language Technology/Γλωσσική Τεχνολογία	3	7,5	CE	C. Kotropoulos

*Course DMCI202 Social Media/Κοινωνικά Μέσα * is offered occasionally.

3rd Semester: Postgraduate diploma (MSc) thesis

The preparation of a postgraduate diploma (Master's) thesis is mandatory. The topics of the diploma theses fall under the academic subjects of the PSP. Importance is given to the preparation of quality diploma theses that can advance the skills to the students but also provide innovative solutions while simultaneously identify the potential and dynamics of postgraduate students.

- ECTS credits of the MSc diploma thesis: 30 credit units.

³ CE Compulsory-Elective (YE in Greek)

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- More information can be found in the related Regulation of Postgraduate Diploma Thesis [link](#) (in Greek)

13. CONTACT INFORMATION

Faculty	Phone	E-mail
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Administrative and Support Staff		
Maria Milosi	2310 99-8410	mmilosi@csd.auth.gr
Eirini Trika	231099-8930	eitrika@csd.auth.gr

E-mail	
PSP Secretariat	pms_info@csd.auth.gr
List of emails of postgraduate students	dmci-csd@lists.auth.gr
List of emails of alumni	csd-grads@lists.auth.gr

Postal Address	School of Informatics Aristotle University of Thessaloniki Thessaloniki 54124
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14. DIRECTORS

PERIOD	DIRECTOR & DEPUTY DIRECTOR
2018 – 2022	Professor Constantine Kotropoulos Associate Professor Nikolaos Nikolaidis
2022 –	Professor Christos Ouzounis