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ΕΚΠΑΙΔΕΥΣΗ

HELLENIC REPUBLIC
HQA
HELLENIC QUALITY ASSURANCE
AND ACCREDITATION AGENCY

Accreditation Report for the Undergraduate Study Programme of:

Digital Systems
Institution: University of Piraeus
Date: 09 November 2019

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Επιχειρησιακό Πρόγραμμα
Ανάπτυξη Ανθρώπινου Δυναμικού,
Εκπαίδευση και Διά Βίου Μάθηση
Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης



Report of the Panel appointed by the HQA to undertake the review of the Undergraduate Study Programme of **Digital Systems** of the **University of Piraeus** for the purposes of granting accreditation

TABLE OF CONTENTS

Part A: Background and Context of the Review	5
I. The Accreditation Panel	5
II. Review Procedure and Documentation	6
III. Study Programme Profile	9
Part B: Compliance with the Principles	10
Principle 1: Academic Unit Policy for Quality Assurance	10
Principle 2: Design and Approval of Programmes	12
Principle 3: Student- centred Learning, Teaching and Assessment	15
Principle 4: Student Admission, Progression, Recognition and Certification	18
Principle 5: Teaching Staff	20
Principle 6: Learning Resources and Student Support	22
Principle 7: Information Management	24
Principle 8: Public Information	26
Principle 9: On-going Monitoring and Periodic Internal Review of Programmes	27
Principle 10: Regular External Evaluation of Undergraduate Programmes	29
Part C: Conclusions	31
I. Features of Good Practice	31
II. Areas of Weakness	31
III. Recommendations for Follow-up Actions	32
IV. Summary & Overall Assessment	33

Abbreviations used in this report:

AP	Accreditation Panel
DDS	Department of Digital Systems
DS	Digital Systems
ECTS	European Credit Transfer System
EDIP	Support Teaching Staff (ΕΔΙΠ)
HQA/ADIP	Hellenic Quality Assurance and Accreditation Agency (ΑΔΙΠ)
IEGs/OMEA	Internal Evaluation Groups / Department's Internal Evaluation Committee
KPIs	Key Performance Indicators
QA/QAU/MODIP	Quality Assurance / QA Unit / ΜΟΔΙΠ
UGP	Undergraduate Study Programme
UniPi	University of Piraeus
ΕΣΔΠ	Εσωτερικό Σύστημα Διασφάλισης Ποιότητας
ΠΑΠΕΙ	Πανεπιστήμιο Πειραιώς

PART A: BACKGROUND AND CONTEXT OF THE REVIEW

I. The Accreditation Panel

The Panel responsible for the Accreditation Review of the Undergraduate Study Programme of **Digital Systems** of the **University of Piraeus** comprised the following three (3) members, drawn from the HQA Register, in accordance with the Law 4009/2011:

- 1. Prof. Sotirios Skevoulis** (Chair)
Pace University, New York, USA

- 2. Prof. Dimitrios Makris**
Kingston University, London, United Kingdom

- 3. Dr. Paraskevas Dalianis**
UniSystems SA, Athens, Greece

II. Review Procedure and Documentation

The Accreditation Panel visit started with a meeting at the Royal Olympic Hotel in Athens on Monday 4/11/2019, during which staff of the HQA (the President and General Manager) explained the Accreditation Procedure, and the role and tasks of the AP members. The documentation and the supporting material provided to the panel included:

- the accreditation guide created by HQA,
- the mapping grid, created by HQA, which was very helpful in mapping the contents of the different principles to questions to be answered during the site visit, the accreditation proposal (“Πρόταση Ακαδημαϊκής Πιστοποίησης του ΠΠΣ”) prepared by the department,
- a set of annexes with the accreditation proposal, explicating various issues and providing detailed information; including the study guide, course descriptions, policies’ documents, etc,
- a set of documents presenting quality indicators both for the department and the study program, the report of the October 2013 external evaluation conducted by HQA for the Department
- a set of presentations used by the HQA staff members to present the purpose, goals and procedures of the accreditation.

The site visit to the Department of Digital Systems of the University of Piraeus started on Monday 4/11/2019. The visit lasted from 13.30 to 16:00. At the welcome meeting, the AP met the Deputy-Rector and President of MODIP, Prof. Pantelis Pantelidis, and the Head of Department, Prof. Costas Lambrinoudakis. Prof. Pantelidis gave a broad overview of the history and current situation of the University, informed the AP about the Quality Assurance Procedures of the University. He mentioned that the Department participated fully in the university’s evaluation processes.

Prof. Lambrinoudakis made a brief presentation of the history of the Department, which was founded in 1999 as the Department of Technological Education and was renamed in 2002 to "Department of Computer Education and Digital Systems" and in 2009 to "Department of Digital Systems". He explained various aspects concerning the study program and its objectives, staffing, numbers of students, program progression and completion statistics, and the preparation of the students for the job market.

The AP subsequently had meetings with:

MODIP and OMEA representatives (Professor George Vouros, President, Professor Aggelos Rouskas, Associate Professor Ilias Maglogiannis, Assistant Professor Apostolos Melionis, Assistant Professor Christos Doulkeridis, Assistant Professor Orestis Telelis, Professor Christos Xenakis, Eirini Perantonaki, Varvara Markou) explained the Department’s evaluation processes, which are coordinated by the OMEA (Internal Evaluation Committee of Department), and answered a series of questions from the AP, providing supplementary information.

After the above meetings, the AP met briefly in private to discuss the findings of the visit so far. The day ended with transport of the AP members back to their hotel.

The following day the AP had the second visit at the Department and the day started with a meeting with members of the teaching staff (DEP) (Professor Athanasios Kanatas, Professor Stefanos Gritzalis, Professor Symeon Retalis, Professor Andriana Prentza, Professor Angeliki Alexiou, Associate Professor Fotini Paraskeva, Assistant Professor Maria Halkidi). The AP discussed with them their professional careers, workloads, staff mobility, their understanding of student-centred teaching, the linking of teaching and research, the structure of the study programme, teaching staff's involvement in applied research, projects and research activities directly related to the programme; possible areas of weakness and other such matters.

The visit continued with a meeting with several students. As part of this particularly important meeting, the AP asked students about their satisfaction with the Department and the programme of study, their involvement in feedback and evaluation processes, their student identity and their perception of their study programme from an external perspective, and the opportunities afforded to them to actively participating in research activities. In addition, they discussed the opportunities provided to them after their graduation and the student centered activities supported by the Department that directly or indirectly support their studies. These include: New Student Orientation Day, Faculty advising, the education portal (e-class) and the effectiveness of the administration staff, among others. The students expressed their content about the programme as well as their relationship with the members of the teaching staff. They also expressed their general satisfaction with their overall learning and teaching experience.

Immediately after this meeting (11:15-12:15) the AP was given a tour of the department's own building, visiting classrooms, computer laboratories, the University library and other departmental facilities, accompanied by Professor Lambrinouidakis, Professor Maglogiannis, and Ms Antoniou, Administrative Staff.

At 12:30, the AP met with 12 alumni to discuss their experience of studying at the Department and subsequent activities. They all had found jobs and/or continuing their education for Master's degree or PhD degrees.

The AP asked them about their satisfaction with the Department and the study program, their involvement in evaluation processes, and the possibilities they had of participating in research activities. The alumni expressed their enthusiasm with their learning experience and had an excellent opinion about their relationship and interactions with the members of the teaching and administrative staff. They also expressed their gratitude to the Programme of Study, which offered them a plethora of academic and practical skills for a successful professional career.

At 13:30, the AP met with a group of external stakeholders including Panagiotis Papagiannakopoulos (EY), Maria Papadopoulou (ENISA), Georgios Diamantopoulos (COSMOTE), Ioannis Simos (ADACOM), George Vasios (Hellenic Army), Panagiotis Karamalis (PALLADIO School), Kostas Papadatos (CyberNoesis), Dimitris Apostolopoulos (Obrela Security Industries), Dimitris Alexandrou (Ubitech). All participants provided very positive feedback regarding the Digital Systems Department, its students and graduates, highlighting their willingness to employ

graduates of the department and mentioned the reputation the Department enjoys by the industry and the society. The employers were also very eager to cooperate with the department, participate in an external advisory board and provide input for the updating of its curriculum based on the latest industry and market trends.

The final meeting was with Deputy-Rector and President of MODIP, Prof. Pantelis Pantelidis, the Head of Department, Prof. Costas Lambrinouidakis, and representatives of MODIP and OMEA. During this meeting the AP asked for some minor additional information and provided some overall feedback, outlining the overarching findings of the accreditation visit.

The AP would like to thank the Deputy Rector, the Head of Department and their Colleagues for this helpful tour, and in general for the very positive and professional atmosphere in which the site visit was conducted. All department members were very willing to collaborate with the AP and provide further information when requested. The extensive documentation provided in advance, and in hard copy and on an online google drive, forms the basis of the current report.

III. Study Programme Profile

The University of Piraeus was founded as a "School of Industrial Studies" in 1938 by the Association of Industrialists and Craftsmen in association with the Federation of Public Limited Companies Greece intending to provide economic, legal and technical education to industrial executives. Currently it has four Schools: School of Information and Communication Technologies (ICT), School of Finance and Statistics, School of Maritime and Industrial Studies and School of Economics, Business and International Studies. The ICT School has 40+ faculty members, 100+ post-doc researchers and PhD students, 2 under-graduate programmes of study: Informatics; Digital Systems and 7 postgraduate programmes of study. Its vision is to establish a School as a top choice for young people willing to study high-standards ICT, for research groups seeking high-quality collaborators in ICT-related research fields, for the community, in general, towards the social good. The Digital Systems Programme serves a population of approximately 1,838 students (currently active and inactive students) and has set as its goals as: the promotion of specialized professionals who can design, implement, and manage state of the art digital systems and Services.

PART B: COMPLIANCE WITH THE PRINCIPLES

Principle 1: Academic Unit Policy for Quality Assurance

INSTITUTIONS SHOULD APPLY A QUALITY ASSURANCE POLICY AS PART OF THEIR STRATEGIC MANAGEMENT. THIS POLICY SHOULD EXPAND AND BE AIMED (WITH THE COLLABORATION OF EXTERNAL STAKEHOLDERS) AT ALL INSTITUTION'S AREAS OF ACTIVITY, AND PARTICULARLY AT THE FULFILMENT OF QUALITY REQUIREMENTS OF UNDERGRADUATE PROGRAMMES. THIS POLICY SHOULD BE PUBLISHED AND IMPLEMENTED BY ALL STAKEHOLDERS.

The quality assurance policy of the academic unit is in line with the Institutional policy on quality, and is included in a published statement that is implemented by all stakeholders. It focuses on the achievement of special objectives related to the quality assurance of study programmes offered by the academic unit.

Quality policy statement of the academic unit includes its commitment to implement a quality policy that will promote the academic profile and orientation of the programme, its purpose and field of study; it will realise the programme's strategic goals and it will determine the means and ways for attaining them; it will implement the appropriate quality procedures, aiming at the programme's continuous improvement.

In particular, in order to carry out this policy, the academic unit commits itself to put into practice quality procedures that will demonstrate:

- a) the suitability of the structure and organization of the curriculum;*
- b) the pursuit of learning outcomes and qualifications in accordance with the European and the National Qualifications Framework for Higher Education;*
- c) the promotion of the quality and effectiveness of teaching;*
- d) the appropriateness of the qualifications of the teaching staff;*
- e) the enhancement of the quality and quantity of the research output among faculty members of the academic unit;*
- f) ways for linking teaching and research;*
- g) the level of demand for qualifications acquired by graduates, in the labour market;*
- h) the quality of support services such as the administrative services, the Library, and the student welfare office;*
- i) the conduct of an annual review and an internal audit of the quality assurance system of the undergraduate programme(s) offered, as well as the collaboration of the Internal Evaluation Group (IEG) with the Institution's Quality Assurance Unit (QAU);*

Study Programme compliance

- The DDS has established an appropriate Quality Assurance (QA) Policy that covers the DS UGP, that demonstrated its commitment and consistency to the UniPi's QA Policy. However, the implementation of this policy is under continuous improvement and needs

further elaboration, i.e. the processes and the overall life cycle of QA Policy need further clarification.

- It is commendable that all relevant documents (QA Policy, goals paired to KPI, annual base and target KPI values, annual internal evaluation) are publicly available through the department’s webpage, although they are not always clearly connected to each other. In addition, the AP has observed some discrepancies in base values of KPIs across different documents, e.g. for the KPIs Δ.1.4.36, Δ.1.4.38, Δ.1.4.40.
- Appropriate SMART objectives were set for the study programme, related to teaching and research activities. However, student satisfaction is not linked to any of the published KPIs. In addition, the difference between the base and target values for some KPIs appears to be too small, despite the fact that further improvement would be feasible and beneficial.
- Internal evaluation and monitoring of base values for KPI are performed annually. However the internal evaluation is entirely based on the analysis of student questionnaires and lacks discussion of the current base values of KPIs. Analysis of student questionnaires is mainly based on the median response for each question and tends to ignore the full profile of responses which may be more informative.
- In addition, the AP was unable to find clear evidence of a process monitoring the suitability of goals and updating the target KPIs over the years.

Panel judgement

Principle 1: Institution Policy for Quality Assurance	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

- Clarify the process for reviewing and revising the goals and their paired KPIs by the DDS and specify the periodicity of such process.
- Include KPIs related to student satisfaction and pair them to the appropriate teaching-oriented goals to further improve the student-centric approach of the study programme.
- Provide annual feedback to all stakeholders, including students, such as identifying the areas needed improvement and the actions that the Department agreed to implement.

Principle 2: Design and Approval of Programmes

INSTITUTIONS SHOULD DEVELOP THEIR UNDERGRADUATE PROGRAMMES FOLLOWING A DEFINED WRITTEN PROCESS WHICH WILL INVOLVE THE PARTICIPANTS, INFORMATION SOURCES AND THE APPROVAL COMMITTEES FOR THE PROGRAMME. THE OBJECTIVES, THE EXPECTED LEARNING OUTCOMES, THE INTENDED PROFESSIONAL QUALIFICATIONS AND THE WAYS TO ACHIEVE THEM ARE SET OUT IN THE PROGRAMME DESIGN. THE ABOVE DETAILS AS WELL AS INFORMATION ON THE PROGRAMME'S STRUCTURE ARE PUBLISHED IN THE STUDENT GUIDE.

Academic units develop their programmes following a well-defined procedure. The academic profile and orientation of the programme, the objectives, the subject areas, the structure and organisation, the expected learning outcomes and the intended professional qualifications according to the National Qualifications Framework for Higher Education are described at this stage. The approval or revision process for programmes includes a check of compliance with the basic requirements described in the Standards, on behalf of the Institution's Quality Assurance Unit (QAU).

Furthermore, the programme design should take into consideration the following:

- *the Institutional strategy*
- *the active participation of students*
- *the experience of external stakeholders from the labour market*
- *the smooth progression of students throughout the stages of the programme*
- *the anticipated student workload according to the European Credit Transfer and Accumulation System*
- *the option to provide work experience to the students*
- *the linking of teaching and research*
- *the relevant regulatory framework and the official procedure for the approval of the programme by the Institution.*

Study Programme compliance

The structure and content of the study programme is periodically reviewed, according to UniPi Quality Assurance guidelines, whilst taking into consideration the Department's teaching and research priorities and restrictions.

From an external standpoint, the study programme adheres to international curriculum guidelines, as stipulated by Professional Bodies, such as the Association for Computer Machinery, and the Institute of Electrical and Electronics Engineers, as emphasized by the Department.

Moreover, it is periodically reviewed and adapted to meet the needs of the Greek Industry/Economy. Information regarding the needs of the Greek economy is mainly obtained through informal consultations with employers, monitoring employment status of graduates, the process of the industrial placement of the students, etc. All this information is forwarded on an ad-hoc basis to the Academic programme committee for further refinement. This departmental committee develops a recommendation to the Department General Assembly for final decision. Following an extensive and in depth reformulation of its curriculum, which took place in 2017-2018, the Department of Digital Systems offers a four-year undergraduate study programme

that requires the completion of 240 ECTS units which correspond to 44 courses. There are 5 core courses in each of the two semesters during the 1st year, 6 core courses in each of the two semesters during the 2nd year, 3 core courses in the 5th semester (3rd year), and 4 core courses in the 6th semester (3rd year). At the 5th semester, students have to define their preferred primary specializations (divisions), and during the 3rd year, attend at least 3 compulsory courses from this stream, plus 2 others either from the same or another specialization. At the 7th semester they may define their secondary specialization, in order to attend 2 compulsory courses during the year, plus 6 from this specialization or any other available course.

To its credit, the Department offers students the opportunity to complete a Final Year Thesis as a compulsory obligation, which is organized in two courses, one in the 7th semester and one at the 8th semester of studies.

After the recent restructuring, the programme is organized in 3 primary specializations, each with its own compulsory and optional courses, providing more flexibility to students, during the last two years of their studies. Each of these specializations has two secondary specializations (subdivisions). The primary specializations with their secondary specializations are:

1. Software and Data Systems (Soft&Data), divided into Information Systems and Data Management.
2. Computational Infrastructures and Services (Comp.Infra&Services), divided into Computational Architectures-Systems and Digital Services.
3. Telecommunications and Computer Networks (TelCom&Nets), divided into Telecommunications and Networks.

There are also two horizontal specializations that go across all specializations mentioned above:

- A. ICT Security (Sec), ie. IT Systems and Networks Security and Privacy Protection , and
- B. Pedagogical & Teaching Abilities, leading to the Pedagogical and Teaching Certificate.

Students are also allowed to attend very limited elective courses offered by other study programmes within the University.

Paid internship (“πρακτική άσκηση” or “Student Placement”) is also offered as an elective course, at the fourth year of studies, linking students with potential future employers. It became evident to the AP that there is significant student interest in paid internships. The Department promotes them widely, and does its best towards enhancing student participation to ERASMUS+ programme as well.

The aforementioned information regarding the study programme, comes from the latest official Student Guide (“Οδηγός Σπουδών 2019-2020”), which is currently available only in Greek, and the departmental website, which provides information on the greek and english language. There are currently some discrepancies between those two presentations, although the learning outcomes are well defined. Related information on the latest available revised Accreditation Proposal (19/4/2019) has also to be updated and match with the latest Study Programme.

The Department maintains strong relationships with external stakeholders. Nevertheless, it has not yet formulated any official mechanism and/or systematic approach towards facilitating their contribution to strengthening its study programme. It is expected that the encouragement of their participation in the study programme review process, through an advisory role approach, might significantly contribute to the continuous evolution and appeal of its study programme.

It has to be noted, that the external stakeholders praised the high quality of the Department's graduates, and expressed their willingness to contribute to any departmental effort towards enhancing the study programme.

All courses of the study programme are available online through the Department website and the e-learning, e-class platform EVDOXOS, in which recommended textbooks and lecture handouts are also posted.

Panel judgement

Principle 2: Design and Approval of Programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- The Department should formalize the approach of involving external stakeholders in the collection of information towards the design and updating of its study programme, and set up an External Advisory Board, aiming at assisting towards the identification of the industry / economy needs. The proposed membership might include:
 - representatives of the alumni association,
 - representatives of private / public organisations with a wide range of cooperation in the context of Internship,
 - representatives from employer's organisations
 - distinguished members of the academic community in areas related to the course thematic areas.
- Update the website to include the current student guide. Ensure that all up to date information regarding the study programme is available on the website, both in Greek and English.

Principle 3: Student- centred Learning, Teaching and Assessment

INSTITUTIONS SHOULD ENSURE THAT THE UNDERGRADUATE PROGRAMMES ARE DELIVERED IN A WAY THAT ENCOURAGES STUDENTS TO TAKE AN ACTIVE ROLE IN CREATING THE LEARNING PROCESS. THE ASSESSMENT METHODS SHOULD REFLECT THIS APPROACH.

Student-centred learning and teaching plays an important role in stimulating students' motivation, self-reflection and engagement in the learning process. The above entail continuous consideration of the programme's delivery and the assessment of the related outcomes.

The student-centred learning and teaching process

- *respects and attends to the diversity of students and their needs, enabling flexible learning paths;*
- *considers and uses different modes of delivery, where appropriate;*
- *flexibly uses a variety of pedagogical methods;*
- *regularly evaluates and adjusts the modes of delivery and pedagogical methods aiming at improvement*
- *regularly evaluates the quality and effectiveness of teaching, as documented especially through student surveys;*
- *reinforces the student's sense of autonomy, while ensuring adequate guidance and support from the teaching staff;*
- *promotes mutual respect in the student - teacher relationship;*
- *applies appropriate procedures for dealing with students' complaints.*

In addition :

- *the academic staff are familiar with the existing examination system and methods and are supported in developing their own skills in this field;*
- *the assessment criteria and methods are published in advance;*
- *the assessment allows students to demonstrate the extent to which the intended learning outcomes have been achieved. Students are given feedback, which, if necessary is linked to advice on the learning process;*
- *student assessment is conducted by more than one examiner, where possible;*
- *the regulations for assessment take into account mitigating circumstances*
- *assessment is consistent, fairly applied to all students and carried out in accordance with the stated procedures;*
- *a formal procedure for student appeals is in place.*

Study Programme compliance

- The new UGP has adopted a wide range of modes of delivery (lectures, practicals, labs) and assessment methods (written and oral examinations, intermediate exercises, practical laboratory assessment, coursework). Assessment criteria and methods are communicated in the beginning of each course electronically and during the first lecture.
- Students are enabled to develop a wide range of technical skills and obtain their own specialization through primary and secondary study directions and elective courses. However, based on feedback from external stakeholders and the recent graduate's survey, graduates lack soft skills necessary for their future careers.

- New students are given the opportunity to attend a short “Welcome Day” (induction) event that lasts 60min-90min. However, the AP considers that a longer (half-day or full-day) induction is normally better suited.
- A new academic advisory scheme was introduced this year and students were invited to attend a group initial informative meeting with their academic advisor. The AP appreciates that its effectiveness has not yet been assessed.
- Students are given the opportunity to express their views for individual courses and the entire UGP in regular surveys. However, the results of such surveys are not explicitly linked to KPIs and as a consequence to the QA goals. In addition, any improvements the DDS may decide, as a reaction to the outcomes of the survey, are not explicitly communicated to the students.
- There is a well-evolved procedure for student appeals and complaints, including the Student’s Ombudsman (or Student’s Advocate). Based on the meeting between the AP and a sample of the student population, the majority felt comfortable to resolve any matters informally through interaction with the academic staff and only a few were aware of the available formal process though.
- A mental health unit has been established by the University and provides support to students in need.
- The academic staff is generally approachable, have published surgery hours and students are encouraged to informally discuss any issues. Student representatives are considered as part of the department’s general assembly.
- A survey of students who graduated from the study programme between 2015-2017 was conducted, but it is worth noting that the majority of the respondents (85%) received a grade higher than the traditional average grade (6.5), so students with lower grades were under-represented. Among the positive outcomes of the survey is that 87% of the DS graduates would recommend the UGP to a friend. However, areas of concern were also identified, such as 47% thought that they have received little or no support related to their study programme, and almost a quarter of students did not finish on time due to the difficulty of the UGP.
- Further improvement could be achieved by clarifying the vision and strategy that places students in the epicentre. In addition, academic staff are not explicitly exposed or trained to any modern pedagogical approaches in higher education that consider the student as an active participant in the teaching-learning process.

Panel judgement

Principle 3: Student- centred Learning, Teaching and Assessment	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

- Ensure that soft skills, such as oral/written communication, presentation, working in team, conflict resolution, as explicitly included in the curriculum and properly assessed.
- Review and adapt accordingly the newly introduced academic advisory scheme. Consider approaches that will ensure that new students attend the first crucial meetings. Add an appropriate KPI paired with a relevant goal in the QA Policy.
- Expand the induction programme, for example by including introductory meetings between the academic advisors and their assigned groups of students.
- Provide feedback to students on how the DDS reacts to any issues identified by the student and graduate surveys.
- Include KPIs based on student surveys.
- Introduce schemes that train academic staff to modern pedagogical approaches in higher education. For example, the DDS can introduce a peer-observation scheme between academic during teaching sessions, while the UniPi could establish a training course on teaching-learning in higher education.

Principle 4: Student Admission, Progression, Recognition and Certification

INSTITUTIONS SHOULD DEVELOP AND APPLY PUBLISHED REGULATIONS COVERING ALL ASPECTS AND PHASES OF STUDIES (ADMISSION, PROGRESSION, RECOGNITION AND CERTIFICATION).

Institutions and academic units need to put in place both processes and tools to collect, manage and act on information regarding student progression.

Procedures concerning the award and recognition of higher education degrees, the duration of studies, rules ensuring students progression, terms and conditions for student mobility should be based on the institutional study regulations. Appropriate recognition procedures rely on institutional practice for recognition of credits among various European academic departments and Institutions, in line with the principles of the Lisbon Recognition Convention.

Graduation represents the culmination of the students' study period. Students need to receive documentation explaining the qualification gained, including achieved learning outcomes and the context, level, content and status of the studies that were pursued and successfully completed (Diploma Supplement).

Study Programme compliance

The Department maintains a comprehensive induction programme to support new students transitioning from high school to university academic life. Key information which underpins the orientation of new students during their first few weeks at UniPi, is available on the website and is presented in a rather short in duration "Welcome Day" event. Students commented positively on the accessibility of this information, and those of the UniPi's support services. The recent enhancement of the Academic Advisor approach, with the direct contribution of the whole body of the academic staff into that, is expected to play a significant role towards this direction.

The Department does not have any control on the number of incoming students, which is mandated by the State. Considering this with the fact of limited resources, someone may easily understand that there may be a serious hindrance to the effectiveness of the Department's teaching programme.

As part of their studies, students have the option to undertake a paid internship in industry. The Department, which encourages the research activities of its staff, maintains very good relations with external stakeholders, has a significant research record, and actively supports its students towards this option.

Students are also encouraged to participate in the ERASMUS+ programme by spending one or two semesters at an overseas institution. The Department is proactive in trying to promote funding opportunities, such as ERASMUS+ programmes, and dedicates reasonable resources in that respect.

As mentioned, the Department offers students the opportunity to complete a compulsory Final Year Thesis, which is organized in two successive courses, during the last two semesters of studies (ie. 7th and 8th). Although some information is provided upon its implementation in the

departmental Regulation of Studies, it is advised that a detailed Thesis Handbook should be available, providing all information, on the Thesis, like its alternative implementation approaches, methods of provision of available topics, staff's involvement, quality requirements and expectations, evaluation methods, etc.

The DDS has introduced the provision of the Diploma Supplement in 2007, providing the required detailed information to all graduates.

Panel judgement

Principle 4: Student Admission, Progression, Recognition and Certification	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

1. The role of the Academic Advisor, which was recently expanded with the involvement of all academic staff and assignment of a small group of incoming students to each of them, has to be well documented, promoted and supported by the Department.
2. The Department may further benefit from its wide network of external stakeholders towards expanding its scholarship opportunities, taking into consideration any limitations applicable due to the State Law.
3. The Thesis Handbook may be enhanced, providing all information on its implementation methodology, reflecting the substantial effort the Department's Staff is devoting to it.

Principle 5: Teaching Staff

INSTITUTIONS SHOULD ASSURE THEMSELVES OF THE QUALIFICATIONS AND COMPETENCE OF THE TEACHING STAFF. THEY SHOULD APPLY FAIR AND TRANSPARENT PROCESSES FOR THE RECRUITMENT AND DEVELOPMENT OF THE TEACHING STAFF.

The Institutions and their academic units have a major responsibility as to the standard of their teaching staff providing them with a supportive environment that promotes the advancement of their scientific work. In particular, the academic unit should:

- *set up and follow clear, transparent and fair processes for the recruitment of properly qualified staff and offer them conditions of employment that recognize the importance of teaching and research;*
- *offer opportunities and promote the professional development of the teaching staff;*
- *encourage scholarly activity to strengthen the link between education and research;*
- *encourage innovation in teaching methods and the use of new technologies;*
- *promote the increase of the volume and quality of the research output within the academic unit*
- *follow quality assurance processes for all staff members (with respect to attendance requirements, performance, self-assessment, training etc.);*
- *develop policies to attract highly qualified academic staff;*

Study Programme compliance

- Staff mobility is encouraged through a number of Erasmus and bilateral agreements that the UniPi participates but mainly through the staff's research activities. Unpaid sabbaticals are also offered.
- The teaching workload seems reasonable and staff are allowed to be engaged in research and other personal development activities. However, the department lacks a clear and transparent workload model that would allow academic staff to balance research and teaching activities.
- The research activity of the academic staff is clearly one of the strengths of the department, as evident by the number of publications in high-quality journals and reputable conferences, high number of citations, as well as research income and participation in prestigious European research projects (Horizon 2020).
- Students have the opportunity to be exposed to research activities through their final year theses. However, the AP could not substantiate sufficient evidence of research-informed teaching in other courses.
- Teaching staff are assessed by students through the course surveys. However, they are not offered the opportunity for self-assessment or peer assessment.
- The DDS's research strategy is worded through some key aspirations and delivered through the research structure organized in research labs. However, relevant target KPIs are not ambitious enough to drive further improvement. For instance the citation KPI is accumulative and not annual and is likely to be achieved anyway through passive accumulation of citations. In addition, the current number of research labs (ten) is probably too high for a department of 26 academic staff and could be benefited by some

re-organisation that would allow the establishment of research units with critical mass and further exploit the established intra-departmental collegiality.

- Although there have been some indication of sparse training sessions, e.g. on Horizon2020 research project, the AP could not substantiate any evidence of a clear personal development program. As discussed in Principle 3, no pedagogical training is provided to academics.

Panel judgement

Principle 5: Teaching Staff	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- Develop a strategy and a programme for professional development, properly communicated to academic staff, including training to pedagogical theories and approaches in teaching and learning in higher education.
- Ensure that research-informed teaching is delivered in undergraduate courses beyond the final year thesis.
- Re-organise the research structure to avoid overlap and establish research units with sufficient critical mass for further development.
- Review the target KPIs related to research activities to be sufficiently challenging, so to drive further the department's research profile.
- Establish a transparent workload model that takes into account and balances teaching, administration and research activities across the academic staff in the department.

Principle 6: Learning Resources and Student Support

INSTITUTIONS SHOULD HAVE ADEQUATE FUNDING TO COVER TEACHING AND LEARNING NEEDS. THEY SHOULD –ON THE ONE HAND- PROVIDE SATISFACTORY INFRASTRUCTURE AND SERVICES FOR LEARNING AND STUDENT SUPPORT AND–ON THE OTHER HAND- FACILITATE DIRECT ACCESS TO THEM BY ESTABLISHING INTERNAL RULES TO THIS END (E.G. LECTURE ROOMS, LABORATORIES, LIBRARIES, NETWORKS, BOARDING, CAREER AND SOCIAL POLICY SERVICES ETC.).

Institutions and their academic units must have sufficient funding and means to support learning and academic activity in general, so that they can offer to students the best possible level of studies. The above means could include facilities such as libraries, study rooms, educational and scientific equipment, information and communications services, support or counselling services.

When allocating the available resources, the needs of all students must be taken into consideration (e.g. whether they are full-time or part-time students, employed or international students, students with disabilities) and the shift towards student-centred learning and the adoption of flexible modes of learning and teaching. Support activities and facilities may be organised in various ways, depending on the institutional context. However, the internal quality assurance ensures that all resources are appropriate, adequate, and accessible, and that students are informed about the services available to them.

In delivering support services the role of support and administrative staff is crucial and therefore they need to be qualified and have opportunities to develop their competences.

Study Programme compliance

The AP noted the high quality of facilities which are dedicated to supporting the study programme and its students. The Department operates 6 fully equipped laboratories with 160 available seats for undergraduate and graduate students. Teaching and research equipment in the classrooms and laboratories is of good quality. All lecture rooms and labs are equipped with Internet and audio-visual facilities. Auxiliary facilities are also available and accessible to students as needed. All courses of the study programme are available online through the Department website and the e-learning, e-class platform EVDXOS, in which recommended textbooks and lecture handouts are also posted.

Students appeared to be well informed of the different support services available in the University. Although, students mentioned that they have good access to them, some concerns were noticed on the adequacy of the teaching labs for their studies due to the limited resources compared to the large number of new students per year.

The Department does have the appropriate resources, at least at the lecture level, to implement the curriculum. The faculty instructors are highly qualified and trained. However, the Department lacks University-funded supporting personnel like technical support staff. Furthermore, the Department faces serious space limitations (not limited to the labs).

To their credit, DDS makes good use of the research funding they receive by equipping the labs to a very high standard, despite the obvious space restrictions, which affect virtually all campuses based in the centre of large capital cities.

On the other hand, UniPi provides limited -if any- facilities or support for sports.

The Department encourages the participation of students to social activities for students, and public events. It is estimated that the Department may benefit substantially towards the effectiveness of its programme and student experience, by further promoting and supporting the organization and/or participation in events, such as conferences of special topics of interest for the Department in line with its study programme, in close cooperation with its extensive professional network of external stakeholders, making the most out of it towards enhancing the interaction of students with society and the market.

Finally, the Department performs well towards student exchange programmes (e.g., ERASMUS+) encouraging mobility, networking and the acquisition of new knowledge and skills from external resources, as well.

Panel judgement

Principle 6: Learning Resources and Student Support	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

1. The Department should consider the enhancement of extracurricular activities wherever possible.
2. The Department should encourage and support its graduates towards setting up and maintaining an alumni body, which is expected to significantly contribute to the Department's activities in various ways (for example, as external stakeholders participating in reviewing / supporting clarifys, etc.) .
3. Despite the obvious space restrictions which affect virtually all campuses based in the centre of large capital cities, UniPi and DDS might further enhance their efforts to support the provision of some additional facilities for sports, cultural, volunteering, and other social activities for students.
4. The Department should enhance the range of support services available to the students, by further encouraging, for example, cooperation agreements with the municipal / prefecture authorities or local sport unions, providing its students access to sport facilities.
5. It is recommended that the secretariat (administrative services) should consider to extend their "office hours" to better serve the students.
6. DDS is also encouraged to further extend the opportunities available to students to gain practical experience by establishing collaboration agreements with their extensive professional network of external stakeholders.

Principle 7: Information Management

INSTITUTIONS BEAR FULL RESPONSIBILITY FOR COLLECTING, ANALYSING AND USING INFORMATION, AIMED AT THE EFFICIENT MANAGEMENT OF UNDERGRADUATE PROGRAMMES OF STUDY AND RELATED ACTIVITIES, IN AN INTEGRATED, EFFECTIVE AND EASILY ACCESSIBLE WAY.

Institutions are expected to establish and operate an information system for the management and monitoring of data concerning students, teaching staff, course structure and organisation, teaching and provision of services to students as well as to the academic community.

Reliable data is essential for accurate information and for decision making, as well as for identifying areas of smooth operation and areas for improvement. Effective procedures for collecting and analysing information on study programmes and other activities feed data into the internal system of quality assurance.

The information gathered depends, to some extent, on the type and mission of the Institution. The following are of interest:

- *key performance indicators*
- *student population profile*
- *student progression, success and drop-out rates*
- *student satisfaction with their programme(s)*
- *availability of learning resources and student support*
- *career paths of graduates*

A number of methods may be used for collecting information. It is important that students and staff are involved in providing and analyzing information and planning follow-up activities.

Study Programme compliance

The departmental information resides on the centralized information system network of the university. The Department of Digital Systems maintains the overall responsibility for overseeing the continuous improvement of its academic provision, research outputs, and the high-performance standards of its students. The Departmental portal collects, organizes, manages and disseminates a wealth of information. This information is utilized for the purpose of serving the academic and administrative needs of the department as well as to be used for Program Quality Assurance and Quality Improvement for which the Departmental Unit for Quality Assurance (OMEA) and the University Unit for Quality Assurance (MODIP) are responsible. The department conducts several surveys targeting a variety of student bodies: students in their first 3 years of study, graduating students and alumni. The question of these surveys are adequate enough and assist in extracting useful conclusion about a number of areas of interest like: teaching methods, student progression, employability, etc. The information content that is maintained on the departmental portal is regularly updated. The Department closely adheres to the institutional principles (set by the University) which govern the collection of data regarding students, teaching staff, course structures, annual monitoring, assessments, progression, and completion rates. Many of these reports are published on the departmental website for public access. The Department has made a substantial effort to connect with their

alumni. The AP feels much more needs to be done. The Department's alumni are a valuable resource for informed feedback and an important ally in promoting quality assurance.

Panel judgement

Principle 7: Information Management	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

1. Set up online procedures for the monitoring of the employability and career path of the graduates.
2. Establish online procedures for strengthening the ties with the alumni.

Principle 8: Public Information

INSTITUTIONS SHOULD PUBLISH INFORMATION ABOUT THEIR TEACHING AND ACADEMIC ACTIVITIES WHICH IS CLEAR, ACCURATE, OBJECTIVE, UP-TO-DATE AND READILY ACCESSIBLE.

Information on Institution's activities is useful for prospective and current students, graduates, other stakeholders and the public.

Therefore, institutions and their academic units provide information about their activities, including the programmes they offer, the intended learning outcomes, the qualifications awarded, the teaching, learning and assessment procedures used, the pass rates and the learning opportunities available to their students, as well as graduate employment information.

Study Programme compliance

The departmental website provides the main channel of communication for both students and staff of the Department, as well as the outside world. The website is well structured and is offered both in Greek and English for the most part. The information presented is accurate and consistent across both sections. The web site is highly usable and the content is broken down into a number of sections which cover educational, administrative, and social matters, with all key information being present. The navigation between the different parts of the site is easy; basic web usability principles are followed. It became apparent from the interview with the students that the web site is a useful resource for them.

Panel judgement

Principle 8: Public Information	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

The site contains a lot of PDF files with up-to-date information regarding the department, but the contents of those files could also be available as a 'hypertext' (html format) to allow selective access. Uptodate information about the high quality research labs and activities should be properly maintained.

Principle 9: On-going Monitoring and Periodic Internal Review of Programmes

INSTITUTIONS SHOULD HAVE IN PLACE AN INTERNAL QUALITY ASSURANCE SYSTEM FOR THE AUDIT AND ANNUAL INTERNAL REVIEW OF THEIR PROGRAMMES, SO AS TO ACHIEVE THE OBJECTIVES SET FOR THEM, THROUGH MONITORING AND AMENDMENTS, WITH A VIEW TO CONTINUOUS IMPROVEMENT. ANY ACTIONS TAKEN IN THE ABOVE CONTEXT SHOULD BE COMMUNICATED TO ALL PARTIES CONCERNED.

Regular monitoring, review and revision of study programmes aim to maintain the level of educational provision and to create a supportive and effective learning environment for students.

The above comprise the evaluation of:

- *the content of the programme in the light of the latest research in the given discipline, thus ensuring that the programme is up to date;*
- *the changing needs of society*
- *the students' workload, progression and completion;*
- *the effectiveness of the procedures for the assessment of students*
- *the students' expectations, needs and satisfaction in relation to the programme;*
- *the learning environment, support services and their fitness for purpose for the programme*

Programmes are reviewed and revised regularly involving students and other stakeholders. The information collected is analysed and the programme is adapted to ensure that it is up-to-date. Revised programme specifications are published.

Study Programme compliance

The self-assessment procedure of the study programme takes place annually. The department collects, records and submits the results to the Institution's QAU/MODIP. As soon as the results of the self-assessment are available they are disseminated within the academic unit. The review procedures for the evaluation and improvement of the study programme and the integration of the latest research into the teaching, are found to be strong. Apart from successfully monitoring the learning attainment and teaching goals, there is strong evidence of engagement with external stakeholders. Internally, student needs and expectations are seen as uncompromisable targets, alongside the targets which support staff development opportunities, workload balancing, and the overall welfare of staff. The Department is deemed to be fully compliant in this area.

Panel judgement

Principle 9: On-going Monitoring and Periodic Internal Review of Programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

The Department is encouraged to improve the methodology of analysis of student surveys as part of the self-assessment procedure. For example to consider the distribution of student responses instead of only the median. It is also strongly suggested to get the external stakeholder groups fully engaged with this process.

Principle 10: Regular External Evaluation of Undergraduate Programmes

PROGRAMMES SHOULD REGULARLY UNDERGO EVALUATION BY COMMITTEES OF EXTERNAL EXPERTS SET BY HQA, AIMING AT ACCREDITATION. THE TERM OF VALIDITY OF THE ACCREDITATION IS DETERMINED BY HQA.

HQA is responsible for administrating the programme accreditation process which is realised as an external evaluation procedure, and implemented by a committee of independent experts. HQA grants accreditation of programmes, with a specific term of validity, following to which revision is required. The accreditation of the quality of the programmes acts as a means of verification of the compliance of the programme with the template's requirements, and as a catalyst for improvement, while opening new perspectives towards the international standing of the awarded degrees.

Both academic units and institutions participate in the regular external quality assurance process, while respecting the requirements of the legislative framework in which they operate.

The quality assurance, in this case the accreditation, is an on-going process that does not end with the external feedback, or report or its follow-up process within the Institution. Therefore, Institutions and their academic units ensure that the progress made since the last external quality assurance activity is taken into consideration when preparing for the next one.

Study Programme compliance

The accreditation cycle currently taking place is the first such exercise for the Department and its Digital Systems study programme. In the past, the Department had undergone an External Evaluation in October 2013. A number of the recommendations made by the External Evaluation Committee (External Evaluation Report document, page 23, October 2013) have been considered and have since been incorporated into the programme as documented in the Evaluation Report, Action Plan. Most notable example of an action taken is the introduction of courses on entrepreneurship. However, a substantial number of the recommendations of the external evaluation committee either were not acted upon or the actions are not documented in the final report. A sample of recommendations/actions that are not reported are :

- the design and creation of a strategic plan,
- development and deployment of MOOCs,
- effort to maximize autonomy,
- improvement of the Department's visibility and the effectiveness of its marketing initiatives.

On the other hand, the Staff are aware of the importance of the study programme accreditation and their role as key Quality Assurance contributors to the continuous improvement of the Department. The current accreditation follows the Greek law (3374/2005) and has benefited from the excellent function and effective interaction between various agencies and committees including OMEA, MODIP and HQA. The Department's internal evaluation committee (OMEA) has a continuous collaboration with MODIP, the quality-assurance committee of University of Piraeus. The stakeholders have expressed their willingness to contribute to the programme in

various ways thus enhancing student education and career orientation. The Department would benefit from a consistent effort to address every single recommendation made by an external committee and equally document either the actions taken to implement the recommendations and/or the reason for not acting upon.

Panel judgement

Principle 10: Regular External Evaluation of Undergraduate Programmes	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

1. The AP would recommend the creation of a 5-year strategic plan. A strategic planning committee that would investigate where the Department wants to be 5 and 10 years down the road is recommended.
2. Development and deployment of MOOCs, initially as a pilot programme and, eventually, as a component of its academic programmes.
3. Pursuit of patents, etc. with incorporation of some of them in the academic curriculum.
4. Improvement of the Department's visibility and the effectiveness of its marketing initiatives.

PART C: CONCLUSIONS

I. Features of Good Practice

- Since its creation, the Department includes and fully supports a Final Year Thesis as a compulsory component of its Study programme.
- The Department closely adheres to the institutional principles (set by the University) which govern the collection of data regarding students, teaching staff, course structures, annual monitoring, assessments, progression, and completion rates.
- The web site is well structured, easy to navigate with a wealth of information present and high degree of usability.
- DDS makes good use of the research funding they receive by equipping the labs to a very high standard, despite the obvious space restrictions, which affect virtually all campuses located in the centre of large capital cities.
- The self-assessment procedure of the study programme takes place annually. The department collects, records and submits the results to the Institution's QAU/MODIP.
- The new UGP has adopted a wide range of modes of delivery (lectures, practicals, labs) and assessment methods (written and oral examinations, intermediate exercises, practical laboratory assessment, coursework). Assessment criteria and methods are communicated at the beginning of each course electronically and during the first lecture.
- The research activities of the academic staff is clearly one of the strengths of the department, as evident by the number of publications in high-quality journals and reputable conferences, high number of citations, as well as research income and participation in prestigious European research projects (Horizon 2020).

II. Areas of Weakness

- The QA policy is under continuous improvement and needs further elaboration, for example its implementation such as the relevant processes and their overall life cycle need further clarification. In some cases, there is confusion about the current base values for some KPIs.
- The results of student surveys are not explicitly linked to KPIs and therefore to the QA goals. In addition, any improvements the DDS may decide, as a reaction to the outcomes of the surveys, are not explicitly communicated.
- The teaching vision and strategy requires further clarification to ensure that places students in the epicentre. In addition, academic staff are not explicitly exposed or trained to any modern pedagogical approaches in higher education that consider the student as an active participant in the teaching-learning process.

- The Department would benefit from a consistent effort to address every single recommendation made by an external committee and equally document either the actions taken to implement the recommendations and/or the reason for not acting upon.

III. Recommendations for Follow-up Actions

- Establish an Advisory Board involving external stakeholders (including alumni) which may contribute to the collection of information towards the design and updating of its study programme. Consider its role also as a method for improved communication, coordination and implementation of departmental activities of mutual interest to all.
- The Department should develop a full Thesis Handbook, documenting all requirements, procedures and steps required and already implemented for the completion of the existing mandatory Thesis course.
- DDS should extend the opportunities available to students to gain practical experience by establishing collaboration agreements with its extensive professional network of external stakeholders.
- The Department should design and document relevant monitoring and periodic review of study programme procedures for all academic departmental activities.
- Encourage and enhance the active participation and involvement of the student body, in the annual quality assessment review process.
- Clarify the process for reviewing and revising the goals and their paired KPIs by the DDS and specify the periodicity of such process.
- Include KPIs related to student satisfaction and pair them to the appropriate teaching-oriented goals to further improve the student-centric approach of the study programme.
- Review the target KPIs related to research activities to be sufficiently challenging, so to drive further the department's research profile.
- Provide annual feedback to all stakeholders, including students, such as identifying the areas needed improvement and the actions that the Department agreed to implement.
- Develop a strategy and a programme for professional development, properly communicated to academic staff, including training to pedagogical theories and approaches in higher education.
- Ensure that research-informed teaching is delivered in undergraduate courses beyond the final year thesis.
- Re-organise the research structure to avoid overlap and establish research units with sufficient critical mass for further development.
- Establish a transparent workload model that takes into account and balances teaching, administration and research activities across the academic staff in the department.

IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are:

Principle 2: Design and Approval of Programmes

Principle 4: Student Admission, Progression, Recognition and Certification

Principle 5: Teaching Staff

Principle 7: Information Management

Principle 8: Public Information

Principle 9: On-going monitoring and Periodic Internal Review of Programmes

The Principles where substantial compliance has been achieved are:

Principle 1: Academic Unit Policy for Quality Assurance

Principle 3: Student – centred Learning, Teaching and Assessment

Principle 6: Learning Resources and Student Support

Principle 10: Regular External Evaluation of Undergraduate Programmes

The Principles where partial compliance has been achieved are:

None

The Principles where failure of compliance was identified are:

None

Overall Judgement	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

The members of the Accreditation Panel

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