



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
HELLENIC REPUBLIC



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Accreditation Report for the Postgraduate Study Programme of:

Computer Science

Department: Informatics

Institution: Athens University of Economics and Business

Date: 4 November 2023



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 HAHE to undertake the review of the Postgraduate Study Programme of **Computer Science** of the **Athens University of Economics and Business** for the purposes of granting accreditation.

Table of Abbreviations

Abbreviation	Definition
AP / Panel / EEAP	HAHE External Evaluation Committee/ External Evaluation Accreditation Panel
AUEB / University	Athens University of Economics and Business (Οικονομικό Πανεπιστήμιο Αθηνών ΟΠΑ)
CS	MSc in Computer Science postgraduate programme
DI / Department	Department of Informatics (AUEB)
ECTS	European Credit Transfer System (E.C.T.S.)
HAHE	Hellenic Authority for Higher Education
HoD	Head of Department
IEG / OMEA	Internal Evaluation Group/ Department’s Internal Evaluation Committee / Ομάδα Εσωτερικής Αξιολόγησης (ΟΜ.Ε.Α.) Τμήματος
IQAS	Internal Quality Assurance System (IQAS) / Εσωτερικό Σύστημα Διασφάλισης Ποιότητας (ΕΣΔΠ Ακαδημαϊκού Ιδρύματος)
KPIs	Key Performance Indicators
NISQA	National Information System for Quality Assurance in Higher Education (NISQA – ΟΠΕΣΠ)
PSP	Postgraduate Study Programme
QA	Quality Assurance
QAA	Quality Assurance and Accreditation
QAU/ MODIP	University’s Quality Assurance Unit (ΜΟΔΙΠ Ακαδημαϊκού Ιδρύματος)
QM	Quality Management

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PART A: BACKGROUND AND CONTEXT OF THE REVIEW

I. The External Evaluation & Accreditation Panel

The Panel responsible for the Accreditation Review of the postgraduate study programme of **Computer Science** of the **Athens University of Economics and Business** comprised the following four (4) members, drawn from the HAHE Register, in accordance with Laws 4009/2011 & 4653/2020:

- 1. Dr. Paraskevas Dalianis (Chair)**
UniSystems S.M.S.A., Quest Group, Athens, Greece

- 2. Dr. Dimitris Kabilafkas**
OTE, Greece

- 3. Dr. Vasilis Friderikos**
King's College London (KCL), University of London, London, UK

- 4. Mr. Athanasios Kranas**
University of Thessaly, Greece

II. Review Procedure and Documentation

The External Evaluation and Accreditation Panel (EEAP) attended a series of videoconference meetings, utilizing e:Presence and Zoom tools, in terms of evaluating and accrediting the postgraduate study programme in **Computer Science** at the Department of Informatics at the Athens University of Economics and Business.

The EEAP Review was scheduled to take place remotely for two days of interviews on Monday the 30th and Tuesday 31st of October 2023, with the 2nd – 4th of November 2023 for EEAP further private meetings and drafting the Accreditation Report.

At the opening of the first day, the EEAP was warmly welcomed by the Rector Professor Dimitrios Bourantonis, who, immediately after his short introduction, left the virtual meeting room.

Following that, the Vice Rector of Academic Affairs Personnel and President of MODIP Professor Vasilios Vasdekis introduced the academic and other supporting staff involved with the delivery and management of the PSP programmes.

The Directors of the PSPs, Associate Professor Evangelos Markakis (director of the CS MSc programme), and Prof. Georgios Papaioannou (director of the DMH MSc programme) presented an overview of their programmes, providing information on PSPs' profiles, current status, strengths and possible areas of concern. The discussion extended to the Standards for Quality Assurance and Accreditation (QAA) and the quality assurance (QA) procedures in place for the PSPs, with all participants, including Prof. Ioannis Kotidis (steering committee member), Ms. Nausika Kokkini (OMEA member) and Mrs Panagiota Ioakeim (Deputy Supervisor of MODIP staff). At the end of this long first meeting, the EEAP was offered a short overview of the facilities, as well as, of the videos provided for this purpose. EEAP requested a number of supporting documents and information, which MODIP made available the following days. EEAP expresses the heartfelt thanks to the MODIP representatives for the speedy response to all such requests.

On the second day (31st of October) the Panel met online with a number of internal and external CS PSP's stakeholders. During the first video conference session, the Panel had the opportunity to discuss with teaching staff of the CS PSP, including one Professor (Dr. Ion Androutsopoulos), three Associate Professors (Dr. E. Markakis, Dr. St. Toumpis, Dr. G. Papaioannou), one Assistant Professor (Dr. Sp. Voulgaris), one Laboratorial Teaching Staff (Dr. K. Papakonstantinopoulou), and one external collaborator (Dr. M. Malakasiotis). Discussion topics included professional development opportunities, workload, mobility, challenges towards ensuring learning outcomes, evaluation by students; links between PSP teaching and research activities; and possible areas of weakness.

During the second session, the Panel met with eight (8) students from the Programme. Five (5) of them were new students to the PSP, registered in the current academic year (2023-2024). Three (3) of them were registered in the previous year and are currently completing their MSc. Thesis. The students were asked various questions, about their academic life, their experiences and any challenges they are facing during their studies, their understanding about the structure and content of the PSP, their knowledge and understanding upon the QA process and their expectations from the PSP.

At the following third session, a number of graduate students (selected by the Programme and coming from PSP academic years starting from 2018 till 2021), shared their experience of their postgraduate studies in AUEB, their current professional status and career path and their integration into the industry and/ or their opportunities for further studies following their PSP graduation. Five of them are currently PhD Candidates (four of them studying at universities abroad and one of them in a research centre in Athens) and one of the participating graduates is working at an international company (with offices in Greece and abroad). All participants had landed exceptional opportunities for PhD studies at prestigious institutions or held excellent positions in the software development industry.

The Accreditation review concluded with an hourly session with six external collaborators, where five of the participants were representatives from private companies and one from an US University. The latter was also a member of the PSP's External Advisory Committee. During that session, EEAP had the opportunity to explore their interactions and relations with the PSP, their views regarding the Programme of Studies and its outcomes, the quality of PSP's students, as well as any mechanisms/procedures in place, including that of the External Advisory Committee.

The concluding session of the day was for the EEAP chair to provide EEAP's draft list of conclusions and immediate feedback, summarising mainly, due to the time constraints, some aspects for improvement. The Panel shared with the leadership of the department and the Programme, as well as the representatives of the MODIP and OMEA, some key findings of the two-day remote visit and a summary of the results of the accreditation review meetings.

The EEAP had a number of private sessions, in between the different scheduled meetings with the various stakeholders and the following days, to discuss the findings and the various aspects upon the Programmes, in terms of preparing and finalising the Accreditation report.

The report hereafter presents the collective findings of the Panel, based on the aforementioned meetings, PSP's QA material provided by HAHE, shared documentation provided by the PSP, and email communication with MODIP.

III. Postgraduate Study Programme Profile

The postgraduate study programme MSc in Computer Science is offered by the Department of Informatics at the Athens University of Economics and Business. It was founded in 2002 and re-established in 2018, as a two (2) semesters degree. It is intended for students with an undergraduate degree in Computer Science or a related field or others with a sufficient background in Computer Science and Mathematics.

For the successful completion of the Program, students must acquire at least 75 ECTS. It is offered on a full-time basis and requires the successful completion of 10 courses that correspond to 60 ECTS and a diploma thesis which corresponds to 15 ECTS. One of the courses must be the "Research Methodology" and at least three must be Core Courses.

The programme focuses on the promotion of research providing such experiences to its students. The curriculum is personalized. The only course that is required for all students is "Research Methodology", the rest of the courses are elective and are chosen by students after the approval of the counselling Professor that is a member of the Programs Committee. Among others, it offers two research-oriented courses, «Research in Computer Science" I and II, in the 1st and 2nd semester, which are research oriented, personalized for each student, with the provision of individual supervision on a research topic to all students. These courses are offered by members of the faculty according to the field of academic interest.

The CS PSP focuses mainly on four different scientific areas, that is, Artificial Intelligence, Computer Systems, Networks and Telecommunications, and Theoretical Computer Science. However, these scientific areas are not specializations and are not listed in the detailed grade nor in the Diploma Supplement of the graduates.

PART B: COMPLIANCE WITH THE PRINCIPLES

PRINCIPLE 1: QUALITY ASSURANCE POLICY AND QUALITY GOAL SETTING FOR THE POSTGRADUATE STUDY PROGRAMMES OF THE INSTITUTION AND THE ACADEMIC UNIT

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 THE POSTGRADUATE STUDY PROGRAMMES OF THE INSTITUTION AND THE ACADEMIC UNIT. THIS POLICY SHOULD BE PUBLISHED AND IMPLEMENTED BY ALL STAKEHOLDERS.

The quality assurance policy of the academic unit should be in line with the quality assurance policy of the Institution and must be formulated in the form of a public statement, which is implemented by all stakeholders. It focuses on the achievement of special goals related to the quality assurance of the study programmes offered by the academic unit.

Indicatively, the 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 postgraduate study programme (PSP), its purpose and field of study; it will realise the programme's goals and it will determine the means and ways for attaining them; it will implement appropriate quality procedures, aiming at the programme's improvement.

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

- a) the suitability of the structure and organisation of postgraduate study programmes*
- b) the pursuit of learning outcomes and qualifications in accordance with the European and National Qualifications Framework for Higher Education - level 7*
- c) the promotion of the quality and effectiveness of teaching at the PSP*
- d) the appropriateness of the qualifications of the teaching staff for the PSP*
- e) the drafting, implementation, and review of specific annual quality goals for the improvement of the PSP*
- f) the level of demand for the graduates' qualifications in the labour market*
- g) the quality of support services, such as the administrative services, the libraries and the student welfare office for the PSP*
- h) the efficient utilisation of the financial resources of the PSP that may be drawn from tuition fees*
- i) the conduct of an annual review and audit of the quality assurance system of the PSP through the cooperation of the Internal Evaluation Group (IEG) with the Institution's Quality Assurance Unit (QAU)*

Documentation

- *Quality Assurance Policy of the PSP*
- *Quality goal setting of the PSP*

Study Programme Compliance

I. Findings

AUEB has established a set of QA principles for the collection of data, regarding course structure and implementation, students, teaching staff, annual monitoring, periodic internal/external assessments, etc. and operates centralised information systems, providing effective academic services and tools to its Programmes for their administrative and QA purposes.

The PSP Steering Committee and the PSP Director, in close cooperation with the AUEB's QA Unit, the Department and its IEG, are committed to utilise the available tools in order to collect, organise, manage, and analyse information towards the continuous improvement of the Programme.

The QA Unit, in its recent internal evaluation report (document A8.), has identified a number of preventive/ corrective actions to be implemented toward further improving the PSP. The material shared with EEAP, apart from the defined actions and results, provides sufficiently documented associated objectives, and evidence of those actions, including decisions and measurable KPIs.

The PSP was founded in 2002 and re-established in 2018. It is intended for students with a B.Sc. in CS or with a sufficient background in CS and Math. The PSP is compliant with the ECTS system and is considered as a level 7 EQF programme. With a duration of 12 months, it requires the completion of 10 courses (60 ECTS) and a diploma thesis (15 ECTS). The programme focuses on the promotion of research providing such experiences to its students. Among others, it offers a Research methodology course, and Research I & II courses, assuring the provision of individual supervision on a research topic to all students. There are currently no tuition fees in this PSP.

Admission requirements are well defined, and a number of quantitative and qualitative criteria for the selection of candidates are also predefined, where it appears that some emphasis is given on the candidate's interview performance.

As was evident to the EEAP, students are struggling to complete their thesis in time within the 12-month duration. Almost all of them are applying for an extension of a few months, working on that beyond the projected duration of the Programme, but have to complete it within the calendar year following their entry year in the programme.

The Programme exploits feedback from external stakeholders toward its continuous improvement. An external Advisory Committee has been established to further support the PSP into that. The PSP is also conducting questionnaires with its graduates on an annual basis. Results of these questionnaires are published on AUEB's website.

Evidence of administrative personnel feedback on the QA process is also available in AUEB's website.

The Programme has established a formal faculty advisor scheme to assist students throughout their studies. Apart from that, students mentioned that faculty members are helpful and always available when students need advice or assistance in their studies.

II. Analysis

MODIP is monitoring and enforcing Quality Assurance to all AUEB's Programmes. The coordination committee of the PSP and the Department administration are managing the

whole QA process. Annual internal audits are foreseen. Sufficient quality data and feedback from the previous external reports of the Institution (Evaluation Report 2015, IQAS Accreditation Report 2019) have been collected, analysed and ended up in decisions, actions and measurable KPIs (Docs. A3, A8, A18).

Formal and systematic processes for eliciting extended data from all internal and external stakeholders may provide thorough input for periodic review of the Programme and QA purposes and facilitate a decision-making approach leading to well described actions toward PSP's effectiveness. Data collected from various sources must provide a holistic and concise view of PSP's performance and student experience.

The evident efficiency of the Programme, should be further exploited with extensive measurements using quantitative and qualitative indicators through KPIs, providing valuable and reliable information to support higher-level decision-making.

Regular data collection from students at the end of each semester allows for periodic evaluations and identification of trends for improvement. Higher response rates in course assessment surveys should eliminate any concerns raised upon QA data adequacy and effective decision-making.

A set of measurable goals, such as those connected with teaching methods and outcomes, stakeholders' involvement, PSP's international recognition and promotion, have already been codified in Doc. A3. They are all commensurate with Key Performance Indicators defined. The degree of attainment of the goals is being audited (Docs. A3, A8).

The program's faculty maintains a positive attitude towards quality assurance evaluation, and interviews with students indicate a high degree of satisfaction with the quality and relevance of the education offered by the academic unit.

A service for complaints management from students has been recently organised and is being offered (Docs. A10). Other existing methods, such as the student surveys, the academic advisor, the committee for gender equality and discrimination, may also be utilised for relevant complaints.

Taking into account the European and National Qualifications Framework for Higher Education, the PSP should consider expanding its structure to a minimum 90 ECTS towards extending its international recognition. The PSP should evaluate the possibility of adding a third semester, ensuring that all students will complete their thesis within the duration of their studies (3 semesters), reasonably strengthening the thesis requirements, providing a 90 ECTS degree. Nevertheless, such long-term strategic planning should be sufficiently evaluated considering any possible threats and opportunities.

The PSP may further benefit from all external stakeholders' cooperative spirit and willingness, which became apparent to EEAP during the review meetings. For example, performing different dedicated regular surveys involving all stakeholders, including the existing industrial and social network, may enhance the incorporation of useful feedback for the continuous review and development of the PSP.

III. Conclusions

A quality assurance policy has been established by the PSP. The EEAP is convinced that, given the high quality of the faculty members, and the existing QA documentation, the PSP is committed to implement an effective QA policy inline to the Institution's QA policy.

The PSP should outline long-term objectives and expand upon them as necessary through periodic internal quality review processes to promote continuous improvement. For example, next to a measurable KPI for improving students' low response rates to surveys, further specific actions to resolve this, should be identified. Perhaps, different surveys should be formulated adapted to PSP's specific needs and course differentiations or scheduled and well-organized events each semester to present to students, the results of previous surveys and the expected benefits of their participation.

Panel Judgement

Principle 1: Quality assurance policy and quality goal setting for the postgraduate study programmes of the institution and the academic unit	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

- The PSP should share all important and relevant results to its stakeholders, enhancing the provision of feedback to all internal and external stakeholders, further raising QA culture and extending their active QA contribution.
- Further increase Students' participation in course evaluations; this should be a top priority for the PSP.
- The PSP should consider re-evaluating its approach, towards the duration of the programme with its research-oriented nature vs the intime completion of the required research-oriented thesis, and the impact of its duration and offered ECTS on its international recognition. Such long-term strategic planning should be well analysed and documented.
- Make an effort to systematize and document the information collected in relation to the market demand for professional qualifications expected from the program's graduates.
- A formal procedure should be created and implemented to systematically promote the active QA participation of all external stakeholders (next to the already active External Advisory Committee), capitalising on staff's wide network of external relations.
- The PSP is encouraged to promote and support the formation of an Alumni membership aiming at the active engagement of its graduates in periodic activities (e.g., an industrial Open Day), strengthening the PSP's visibility/promotion and QA processes.

PRINCIPLE 2: DESIGN AND APPROVAL OF POSTGRADUATE STUDY PROGRAMMES

INSTITUTIONS SHOULD DEVELOP THEIR POSTGRADUATE STUDY PROGRAMMES FOLLOWING A DEFINED WRITTEN PROCESS WHICH WILL INVOLVE THE PARTICIPANTS, INFORMATION SOURCES AND THE APPROVAL COMMITTEES FOR THE POSTGRADUATE STUDY PROGRAMMES. THE OBJECTIVES, THE EXPECTED LEARNING OUTCOMES AND THE EMPLOYMENT PROSPECTS ARE SET OUT IN THE PROGRAMME DESIGN. DURING THE IMPLEMENTATION OF THE POSTGRADUATE STUDY PROGRAMMES, THE DEGREE OF ACHIEVEMENT OF THE LEARNING OUTCOMES SHOULD BE ASSESSED. THE ABOVE DETAILS, AS WELL AS INFORMATION ON THE PROGRAMME'S STRUCTURE ARE PUBLISHED IN THE STUDENT GUIDE.

The academic units develop their postgraduate study programmes following a well-defined procedure. The academic profile and orientation of the programme, the research character, the scientific objectives, the specific subject areas, and specialisations are described at this stage.

The structure, content and organisation of courses and teaching methods should be oriented towards deepening knowledge and acquiring the corresponding skills to apply the said knowledge (e.g. course on research methodology, participation in research projects, thesis with a research component).

The expected learning outcomes must be determined based on the European and National Qualifications Framework (EQF, NQF), and the Dublin Descriptors for level 7. During the implementation of the programme, the degree of achievement of the expected learning outcomes and the feedback of the learning process must be assessed with the appropriate tools. For each learning outcome that is designed and made public, it is necessary that its evaluation criteria are also designed and made public.

In addition, the design of PSP must consider:

- *the Institutional strategy*
- *the active involvement of students*
- *the experience of external stakeholders from the labour market*
- *the anticipated student workload according to the European Credit Transfer and Accumulation System (ECTS) for level 7*
- *the option of providing work experience to students*
- *the linking of teaching and research*
- *the relevant regulatory framework and the official procedure for the approval of the PSP by the Institution*

The procedure of approval or revision of the programmes provides for the verification of compliance with the basic requirements of the Standards by the Institution's Quality Assurance Unit (QAU).

Documentation

- *Senate decision for the establishment of the PSP*
- *PSP curriculum structure: courses, course categories, ECTS awarded, expected learning outcomes according to the EQF, internship, mobility opportunities*
- *Labour market data regarding the employment of graduates, international experience in a relevant scientific field*
- *PSP Student Guide*
- *Course and thesis outlines*
- *Teaching staff (name list including of areas of specialisation, its relation to the courses taught, employment relationship, and teaching assignment in hours as well as other teaching commitments in hours)*

Study Programme Compliance

I. Findings

The department adheres to the institution's well-defined overall quality assurance framework, and it has become evident from the offered documentation and discussions that key mechanisms are in place to ensure that the postgraduate programme meet national (as well as international) standards for quality including academic qualifications that offered to a student at the postgraduate level. This is reflected in the overall design and approval of this postgraduate programme.

There are solid procedures in place for approving and/or altering/amending modules in the Department and its programmes. This aspect has been discussed during the meetings and the overall procedures have been outlined and explained during the discussions. Members of staff appreciate the role of student feedback and the role that such feedback has to play across the whole lifecycle of a module and the programme as a whole. To this end, it is evident from the offered information to the Panel that data are indeed collected, analysed and discussed at the Departmental level. These aspects are mainly overseen by the Head of Department (HoD) and the programme coordinator; good practice is propagated back to the academics and if there are any issues this is handled under the chairing of the HoD. It has become apparent that aggregated results are also discussed during departmental General Assembly meetings. Therefore, the overall modus operandi is similar to other Departments nationally highlighting a good quality assurance policy. The analysis of the available results, as documented and presented to the members of the committee, depict an excellent (overall) performance in terms of teaching quality. This has also become evident with the discussion with students that have already graduated. It has been mentioned that some modules, such as for example the 'Convex Optimization' one, compare in terms of quality, breadth, and depth of the content to similar modules offered by world-class Ivy-league Universities (in fact it was mentioned that this particular module is ever a more challenging one compared to similar offered modules at top institutions). A number of modules that could be offered in the future, such as reinforcement learning, are within the plans, but this will require new members of academic staff. The Student Guide seems to contain all required information.

II. Analysis

In overall the set of procedures that have been put in place provide a sufficient framework for both the effective monitoring as well as the implementation of corrective actions in ensuring a high-quality postgraduate programme. The modules are designed to the highest quality, and this has been mentioned both by students that have graduated from the programme but also from stakeholders. Having said that it is important to note also that the high quality of the modules is reflected also on the teaching quality having as a net result that the completion rate ticks towards 100% even though, according to the discussions, there have been instances where students do not graduate and/or graduate by securing reasonable extensions of few months (for example to their research Thesis). Those extensions are mainly granted by the HoD and/or the Programme Director after a request from the student; it seems that those

requests do not relate to the difficulty or over expectations from a module. Having said that, it will be important to have clearly defined criteria for such mitigating circumstances (i.e., what is accepted and what not) in order to ensure fairness and equality across the students in the same cohort and/or across the different years. This should also be in line with practice from other Programmes within the University.

Regarding aspects related to student feedback with respect to the quality of the different offered modules: The reporting rate is more than 50% which, according to what has been discussed during the meetings, is well above the average across different programmes and/or other departments. However, there is still room for improvement but sufficient to portray the high quality of the taught modules – students seem to appreciate the effort and devotion from academics in delivering high quality modules. Regarding the feedback per se, different possible actions have been discussed; however, there is a need to converge to a specific policy and try to increase even further the percentage of students that reply to such surveys. More generally, there is a need to also close the loop and enhance such a student centered approach where this feedback and any associated actions are injected back and propagated to the students.

The postgraduate programme offers a large number of modules that are deemed as selective. The net effect is to have modules with a very low number of enrolled students (sometimes also below the required threshold) which means that some students might not be offered a selected module. This is in general an issue of concern. Extremely small numbers of students per module might affect teaching quality, the performance of the students and even the way that a module is delivered (for example not possible to create different group projects). This is an issue that the Panel encourages to be examined by the programme director and members of the academic staff that teach in that programme. Finally, future modifications to the programme are linked to the recruitment of new members of staff. Increasing further the number of available modules to the students reinforce the previously mentioned problem of having low numbers of students registered per module.

III. Conclusions

The Panel is satisfied that the Department has developed and is in fact implementing an appropriate quality assurance policy, as part of its strategy for the design and approval of modules within this programme of study. It has become evident from the discussions that modules offered are of high quality and provide postgraduate students the required knowledge to further their studies within academia (i.e., for example at the doctoral level) or move to industry. Overall, the programme is very well organized and its overall quality and associated measures to ensure quality assurances provides to the Department a competitive edge.

Panel Judgement

Principle 2: Design and approval of postgraduate study programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- Include aspects related to equality, diversity, and inclusion in the Student Study Guide(s).
- Provide further details of how the Thesis is evaluated and the criteria that are used.
- Potentially consider decreasing the number of selective modules that are offered to decrease the possibility of having void modules at the start of the academic year.

PRINCIPLE 3: STUDENT-CENTRED LEARNING, TEACHING, AND ASSESSMENT

INSTITUTIONS SHOULD ENSURE THAT POSTGRADUATE STUDY PROGRAMMES PROVIDE THE NECESSARY CONDITIONS TO ENCOURAGE STUDENTS TO TAKE AN ACTIVE ROLE IN THE LEARNING PROCESS. THE ASSESSMENT METHODS SHOULD REFLECT THIS APPROACH.

Student-centred learning and teaching plays an important role in enhancing students' motivation, their self-evaluation, and their active participation 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 by adopting 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*
- *strengthens 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 the students' complaints*
- *provides counselling and guidance for the preparation of the thesis*

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.*
- *Assessment is consistent, fairly applied to all students and conducted in accordance with the stated procedures.*
- *A formal procedure for student appeals is in place.*
- *The function of the academic advisor runs smoothly.*

Documentation

- *Sample of a fully completed questionnaire for the evaluation of the PSP by the students*
- *Regulations for dealing with students' complaints and appeals*
- *Regulation for the function of academic advisor*
- *Reference to the teaching modes and assessment methods*

Study Programme Compliance

I. Findings

The postgraduate program "Computer Science" is a one-academic year program intended for students with a B.Sc. in CS or with a sufficient background in CS and Math. In total its curriculum consists of 10 courses (one of which is mandatory - Research Methodology) and

the diploma thesis. The courses take place in the winter and spring semester, while diploma thesis in the summer.

The PSP is oriented towards student-centered process learning. For this purpose, a set of measures and tools that reinforce the active role of students in this process has been adopted.

II. Analysis

The curriculum of this postgraduate programme enables students to design a personalized program of studies that suit their preferences. For this purpose, there is only one compulsory subject in the curriculum, while the remaining subjects are elective courses. In this way, a list of core or elective courses is offered to students which fall within their interests. It provides a range of teaching aids, electronic notes and supervisory material, with the target of facilitating teaching. It enables students to choose the field in which they will work on their diploma thesis and define the topic together with the supervising teacher, according to their personal goals.

In the context of further strengthening the student-centered educational process, a student complaints management procedure has been adopted. This particular procedure concerns all complaints related to the quality of services provided by the teaching and administrative staff of the Department. In order to register complaints, the "Department Complaint Form" is available on the Department's website.

Regulations and guides of studies, preparation of the diploma thesis and everything related to course process can be accessed on the Department's website.

Every student, after enrolling in the first semester of the Computer Science Program, gets in touch with his Academic Advisor Professor. The Advising Professor is a member of the Program Coordinating Committee and guides the student regarding the course and Diploma Thesis choices.

Regarding teaching, a wide range of teaching practices are used such as online presentations and accompanying audio-visual material. Seminar presentations are made both by the lecturers and by visiting Professors. Students are also supported by a wide range of online courses tools and multimedia (e-class) where there are lectures, notes, exercises and in general all the supporting material of the course.

The quality and effectiveness of the teaching work of the Faculty members of the Department is evaluated by the students during the 13th (last) week of each semester in QAU's (Quality Assurance Unit - MODIP) questionnaire. The QAU's questionnaire includes course, teacher, educational material and learning outcomes evaluation. In addition, students appoint a student representative, who is tasked to transfer to the coordinating committee problems, requests and proposals of the students, in order to discuss them at subsequent meetings.

Exams are held twice per academic year, at the end of each semester. At the beginning of each semester teachers analyse the course outline and the learning outcomes of their courses and post the outline of the course on the course's e-Class page. The way students are assessed is

described in detail in the outline of each course in the Study Guide as well as on e-Class and it is determined by the teacher who takes into account students' performance. There is a range of possible assessment methods such as final written exams, midterm tests and optional exercises that can be given during the semester. The teacher makes it clear in advance with the course outline the exact way and the assessment criteria, as well as the percentage by which each form of assessment will contribute to the final grade of the course.

III. Conclusions

The curriculum of the postgraduate program "Computer Science" is fully compliant with the standards of the HAHE as it is of high quality. Graduates are provided with strong knowledge and experience in both professional and research fields. Students' participation in evaluation is 56,7% on average and should be higher in order to get proper feedback.

Panel Judgement

Principle 3: Student-centred learning, teaching, and assessment	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- Although there is a wide range of core or elective courses that is described in Study Guide, not all of them are offered to students during the semester. That should be clear to students in advance.
- Find ways to involve more students to participate in evaluation.

PRINCIPLE 4: STUDENT ADMISSION, PROGRESSION, RECOGNITION OF POSTGRADUATE STUDIES, AND CERTIFICATION.

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

All the issues from the beginning to the end of studies should be governed by the internal regulations of the academic units. Indicatively:

- *the student admission procedures and the required supporting documents*
- *student rights and obligations, and monitoring of student progression*
- *internship issues, if applicable, and granting of scholarships*
- *the procedures and terms for the drafting of assignments and the thesis*
- *the procedure of award and recognition of degrees, the duration of studies, the conditions for progression and for the assurance of the progress of students in their studies*
- *the terms and conditions for enhancing student mobility*

All the above must be made public in the context of the Student Guide.

Documentation

- *Internal regulation for the operation of the Postgraduate Study Programme*
- *Research Ethics Regulation*
- *Regulation of studies, internship, mobility, and student assignments*
- *Degree certificate template*

Study Programme Compliance

I. Findings

For the admission of postgraduate students, an announcement is published every year defining a specific deadline for submitting applications and supporting documents. Candidates submit their application, electronically and/or in paper form, to the Secretariat of Master and Doctoral Studies of the School of Information Sciences and Technology of the University.

II. Analysis

The selection criteria for candidates are defined in the announcement and include degree grade, score in undergraduate courses, scientific papers, work experience, type of research and/or professional experience, knowledge of the English language, knowledge of another foreign language, personal interview, letters of recommendation from faculty members and/or employers.

The letter of acceptance is sent to each accepted candidate attached with Regulation of Operation of the Postgraduate Study Programme and gives a deadline at least 15 days in order for the candidate to accept his position.

On the Program website (<http://grad.cs.aueb.gr/index.php>) there is all the relative information about the process of applications, online registration, obtaining an academic ID, the academic

calendar, the use of infrastructure, laboratories, supporting services and infrastructure as well as access to the University.

With the start of the new academic year, the Program welcomes new students hosting a welcoming ceremony. In the reception ceremony, in addition to welcoming the students, re-information and reminder about the registration to the various services of the Program, there is a discussion and answer to possible questions of the students by the Programme director, the secretariat and the teachers present. In addition, during the reception ceremony, there is a detailed presentation of the courses by the teachers.

Students' progress is monitored during the course of each semester under the responsibility of the teachers. The relatively small number of students who attend each course allows this to be done directly through class-level questions and answers. During the academic year, the Academic Advisor Professor through repeated meetings and discussions ensures the progress of each student during his studies.

The Program does not provide for student mobility and practical training is not in place. The Diploma Supplement is issued without request in the Greek and the English language. There is in place a Code of Research Ethics for the University.

The Department applies the ECTS in accordance with the relevant legislation. The number of ECTS for each course is reported in the Study Guide. Each academic year corresponds to 60 ECTS and for obtaining a degree a minimum of 75 ECTS are required.

The requirements and specifications of the Thesis are referred to in Article 10 of study regulations of the Program (A.12 document) and in Thesis Guide (A.14.2 document).

III. Conclusions

This is a well-organized and designed PSP and there is in place Internal Regulation for the operation of the Program.

Panel Judgement

Principle 4: Student admission, progression, recognition of postgraduate studies and certification	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- A defined measured set of quality requirements for the implementation of the PSP thesis should be available.
- Thesis evaluation should be conducted using a clear set of criteria that can be split down (in terms of marking) into different aspects such as Evaluation, General Scholarship and Knowledge & Understanding.

PRINCIPLE 5: TEACHING STAFF OF POSTGRADUATE STUDY PROGRAMMES

INSTITUTIONS SHOULD ASSURE THEMSELVES OF THE LEVEL OF KNOWLEDGE AND SKILLS OF THEIR TEACHING STAFF, AND APPLY FAIR AND TRANSPARENT PROCESSES FOR THEIR RECRUITMENT, TRAINING AND FURTHER DEVELOPMENT.

The Institution should attend to the adequacy of the teaching staff of the academic unit teaching at the PSP, the appropriate staff-student ratio, the appropriate staff categories, the appropriate subject areas, the fair and objective recruitment process, the high research performance, the training- development, the staff development policy (including participation in mobility schemes, conferences, and educational leaves-as mandated by law).

More specifically, the academic unit should set up and follow clear, transparent and fair processes for the recruitment of properly qualified staff for the PSP and offer them conditions of employment that recognise 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 (with respect to attendance requirements, performance, self-assessment, training, etc.); develop policies to attract highly qualified academic staff.

Documentation

- *Procedures and criteria for teaching staff recruitment*
- *Employment regulations or contracts, and obligations of the teaching staff*
- *Policy for staff support and development*
- *Individual performance of the teaching staff in scientific-research and teaching work, based on internationally recognised systems of scientific evaluation (e.g. Google Scholar, Scopus, etc.)*
- *List of teaching staff including subject areas, employment relationship, Institution of origin, Department of origin*

Study Programme Compliance

I. Findings

Overall policies for attracting and recruiting highly educated academic personnel are mostly coming from the institution and are applied at the Departmental level; those are similar to those found at other Greek universities. Having said that, it is evident that all faculty members are not only very appropriately qualified to teach the programme modules, but the modules closely follow their research. In other words, the professors, and the department as a whole truly appreciate the value of research and how research could spill over into teaching to create highly competitive modules. These aspects have been appreciated by the students who have graduated from the programme and explained how beneficial it was to have such research lead teachers. In many instances postgraduate students have been able to publish their research and increase their knowledge as well as create a more competitive CV for them to contribute their studies at the doctoral level. The teaching is regularly evaluated via feedback from the students. As eluded in other sections of this report the feedback rate is well above 50% which can be deemed as good but there is room for improvement. It was not clear how the Programme is closing the loop on that feedback in the sense that students are informed

how previous feedback has been used to shape the module. According to the discussions, all members of academic staff expressed the opinion that the workload is reasonable and are able to well balance teaching activities with research. Staff mobility and participation in Erasmus+ programmes is not an area of pursuit within the Programme; having said that it has also become apparent that requests for Sabbatical leave are taken very seriously and every effort is made to accommodate them. This can be considered as a significant opportunity for professional development for academics.

II. Analysis

Members of staff receive feedback from their students on a very regular basis (every semester). It should be noted that only a good proportion (approximately 55%) of students engage in these evaluations. Every semester, the established method of evaluating the teaching staff is carried out by requesting students to complete electronic questionnaires/surveys using an electronic system. The students have a couple of hours to provide feedback, this timeframe might be extended, and reminders could be sent to those that haven't completed their feedback. From the discussion it has become clear (as eluded in other sections of this report) that some modules might not be taught during an academic year due to the very low number of students enrolled. This creates a rather variable load for the academics, and it is not clear how in this case teaching, research and administration duties are re-distributed in those cases (and if they are re-distributed). A clear decision-making process should be in place in order to create a fair allocation of responsibilities within the Department.

III. Conclusions

Members of staff are highly qualified researchers in their scope areas of expertise and these research qualities reflect also on the quality of the taught modules in this postgraduate course. All modules are of excellent quality and the strong linkage between research and teaching is very beneficial for the students - both for those that want to continue their academic studies at the doctoral level but also for those that move to the industry (in Greece or abroad).

Panel Judgement

Principle 5: Teaching staff of postgraduate study programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- A re-thinking of the programme if new members of staff are recruited and new modules offered into the programme (i.e., it is not recommended for example to just add more selective modules).
- A clear decision-making process is recommended to be in place in order to create a fair allocation of responsibilities within the Department.

PRINCIPLE 6: LEARNING RESOURCES AND STUDENT SUPPORT

INSTITUTIONS SHOULD HAVE ADEQUATE FUNDING TO COVER THE TEACHING AND LEARNING NEEDS OF THE POSTGRADUATE STUDY PROGRAMME. 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, NETWORKS, CAREER AND SOCIAL POLICY SERVICES ETC.).

Institutions and their academic units must have sufficient resources and means, on a planned and long-term basis, to support learning and academic activity in general, so as to offer PSP students the best possible level of studies. The above means include facilities such as the necessary general and more specialised libraries and possibilities for access to electronic databases, study rooms, educational and scientific equipment, IT and communication services, support and 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 students, students with disabilities), in addition to 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 proves -on the one hand- the quantity and quality of the available facilities and services, and -on the other hand- that students are aware of all available services.

In delivering support services, the role of support and administration staff is crucial and therefore this segment of staff needs to be qualified and have opportunities to develop its competences.

Documentation

- *Detailed description of the infrastructure and services made available by the Institution to the academic unit for the PSP, to support learning and academic activity (human resources, infrastructure, services, etc.) and the corresponding firm commitment of the Institution to financially cover these infrastructure-services from state or other resources*
- *Administrative support staff of the PSP (job descriptions, qualifications and responsibilities)*
- *Informative / promotional material given to students with reference to the available services*
- *Tuition utilisation plan (if applicable)*

Study Programme Compliance

I. Findings

With the aim of its smooth operation and meeting its educational needs, the PSP uses the University's infrastructure, especially classrooms, conference rooms, auditoriums and ceremony rooms, network, computing, research, and other services. In addition to the computing support provided across the University by the Computer Centre and the Network Management Centre, the IT Department provides additional computing infrastructure to its members, due to their increased needs in teaching and research. The Department has the Educational Laboratory Informatics, which is spatially distributed in four rooms as well as five Research Laboratories covering the areas of research activity of the Department which require specialized infrastructure. These are accessible also to postgraduate students engaged in their advanced courses and research papers which fall within the scope of each laboratory.

II. Analysis

The Educational Laboratory of Informatics is spatially distributed in four rooms, with a total of 139 workstations supported by a server array with multiple processors and disks in RAID. Workstations have Windows and/or Linux operating system and all labs have laser printers for use by the students of the Department. The Department also has five Research Laboratories, Laboratory of Computer Systems and Communications, Laboratory of Information Systems and Databases, Laboratory of Economics Informatics and Systems Theory, Information Processing Laboratory and Wireless Networks and Multimedia Communications Laboratory.

There are in place supporting and advisory services and structures of the University such as Library and Information Centre, Network Management Centre and Computer Centre, Employment and Career Structure, Student Welfare Office, sport/cultural facilities, Mental Health Counsellor Service, Services for Students with Special Needs, volunteering program. There is sufficient and competent administrative staff to ensure the smooth operation of the student support services.

III. Conclusions

The academic unit makes available to the PSP the necessary facilities (classrooms, laboratories, IT infrastructure, access to digital libraries and databases, etc) to ensure an appropriate teaching and learning environment. The above resources available to the PSP are considered sufficient to support the operation, providing education and promoting research.

Nevertheless, students were not aware of all the available services, although these services are functional and easily accessed.

Panel Judgement

Principle 6: Learning resources and student support	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

The availability of academic infrastructure and services should be constantly and properly communicated to the students of the Programme.

PRINCIPLE 7: INFORMATION MANAGEMENT

INSTITUTIONS BEAR FULL RESPONSIBILITY FOR COLLECTING, ANALYSING AND USING INFORMATION, AIMED AT THE EFFICIENT MANAGEMENT OF POSTGRADUATE STUDY PROGRAMMES 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.

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

The information collected 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 programmes*
- *availability of learning resources and student support*

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

Documentation

- *Report from the National Information System for Quality Assurance in Higher Education (NISQA) at the level of the Institution, the department, and the PSP*
- *Operation of an information management system for the collection of administrative data for the implementation of the PSP (Students' Record)*
- *Other tools and procedures designed to collect data on the academic and administrative functions of the academic unit and the PSP*

Study Programme Compliance

I. Findings

In the context of the implementation of the Program's quality policy, various pieces of information are collected and analysed, with the aim of monitoring its operation, the continuous improvement of the services provided, by applying various procedures using respective tools, for collecting, displaying, and analysing the information.

Students Monitoring and Teaching Support

The basic system for the collection of information and the monitoring of the course of the study of postgraduate students is the student registry, used by the Administrative staff of the corresponding Programmes.

The student register collects data on incoming students yearly, total enrolled students and graduating ones, imported by teachers and the secretariat. It also collects and stores data on students' elective courses, course grades and E.C.T.S. for each semester, with the purpose of

formulating recommendations to the Assembly during its periodic reforms of the study program. Students have access, with their personal credentials, to their grades and course registrations. Teachers have access to all the information that concern the courses they teach, the enrolled students and their grades of these students in their courses.

The Secretariat utilises the system for curriculum management, registration, and management of individual information of each student, management of student applications and issuance of digital certificates, copies of Degrees, issue of the Diploma Supplement, production of attendance statistics and grades, etc. This system provides a web portal for students and faculty members (Electronic Secretariat).

The Educational process is supported by the University's Open e-Class system (<https://eclass.aueb.gr/>), which provides the possibility to the teachers of the Programme to share informational and educational material to students and facilitate the communication among them.

Quality Data Management

- Annual Activity Reports of Faculty Members:

Reports are prepared by faculty members, contain detailed information about teaching, research (publications, research projects), the student supervision and administration, and are made public on the School's website, aiming at the detailed and analytical recording of the work of the Academic Department.

There exists also the capability of production of standardised inventories of teaching (e.g., course outline) and research activities. Data is collected which are related to the structure of undergraduates and of postgraduate study programs (e.g., ECTS, learning outcomes, evaluation method etc.) and the ability to export pivot tables is provided. Finally, access is provided in the descriptive statistics of course/teaching evaluation and teaching impression load (programming and accounting) of the members of its teaching staff Department.

- Quality System Data

The National Information System for Quality Assurance in Higher Education (NISQA - ΟΠΕΣΠ) contributes to the support of the procedures certification of his Study Program. The handling of the primary data allows the production of reports of any type with aggregated data and quality indicators, which are available at <https://www.aueb.gr/el/modip>.

In particular, the data entered in the system are quantitative and refer to the following categories: 1) Department, 2) Undergraduate Program, 3) Program Postgraduate Studies, 4) Doctoral Studies Program, 5) Students and Graduates, 6) Human resources, 7) Structure and organisation of studies, 8) Infrastructure and services, 9) Research activity, 10) Financial data.

Quantitative performance indicators are extracted to monitor the performance of the quality policy and the achievement of the School's goals, on the basis of the established KPI's.

- Evaluation of the educational process by student questionnaires

Data for the evaluations of courses by the students are collected. The questions cover all aspects of the teaching of each course (teachers, lectures, essay, workshop). Students are given the opportunity to freely submit comments and Suggestions, as the questionnaires are anonymous. The questionnaires are sent to the students by the School Secretariat, in electronic form, and should be returned on the same day. The results are recorded electronically and separately for each course. Students' participation in the questionnaires is about ~56%.

Average scores in questions are provided overall for all courses. More specific statistics (like min, max, median) are provided by an aggregated statistics report, on university level for all postgraduate programs. Tables and charts summarise the results (ratings) for all sections and questions of the questionnaire. The access in this report is free through its website of the University's Quality Assurance Unit (<https://www.aueb.gr/el/node/22500>) that is not easily accessible for the QAU site (<https://www.aueb.gr/el/modip>).

Based on the information gathered, the Dean and the Assembly proceed to corrective interventions to improve the teaching work and the services offered, such as updating course material, introducing new courses, deleting courses which have not been taught for a long time and are not expected to be taught in the foreseeable future, improvements in teaching methods, etc.

The Institution (Doc. A19.3) has also set up a yearly honorary award for outstanding achievement in teaching for the didactic in charge of the Postgraduate Programmes of the University, based on student's response in the aforementioned questionnaires.

Other Information - surveys

- Administrative Staff

In the context of the project "Upgrading the Quality of the Athens University of Economics and Business for its More Effective and Efficient Operation - Support of QAU", aiming at the replacement of traditional and bureaucratic functions with new effective and efficient ones, in the context of quality management, the Quality Assurance Unit developed and implemented the "Staff Satisfaction Survey" procedure (2023). A detailed survey report is provided, however no conclusions or further actions, so far, are known.

- Library & Information Centre of the University

The Quality Assurance Unit of Academic Libraries carries out online user satisfaction surveys of Greek academic libraries, in order to examine the degree of user satisfaction with the services offered, establishing and applying indicators for evaluating their operation, in accordance with international practices. On the page of AUEB's MO.DI.P. the reports of the electronic user satisfaction survey of the Library & Information Centre of the Athens University of Economics and Business for the years 2013, 2014 and 2017 are posted.

- Research and Teaching Information System

Annual Activity Reports are prepared by faculty members, contain detailed information about teaching, research (publications, research projects), the student supervision and administration, and are made available on the QAU website for the academic and QA staff.

- Specific quality data

On the AAU site (<https://www.aueb.gr/el/content/dedomena-poiotitas-pms>), quality data can be found, on department's lever, and specifically the following:

- Key performance indicators
- Student population profile
- Study course and academic achievements
- Availability of learning resources and student support
- Graduates Career Path, including satisfaction survey.

II. Analysis

The course process is monitored by a satisfactory information system and the quality tools of the Internal Quality Assurance System and the Hellenic Authority for Higher Education. Additional effort has been noted to expand the elementary capabilities of the systems, by collecting and utilizing additional data. The data are well outlined but no conclusions or suggestions for further actions were noticed.

All these elementary and additional data are analysed for the assessment of possible drawbacks in the program, however it could always be deeper analysed for detection e.g., of cross-reference factors.

Students' participation in questionnaires lies at a usual (~56%), albeit still unsatisfactory level. The recent transfer from written to electronic form, (with a one-day deadline) does not seem to have worked well. The Program recognizes the problem and various ideas are discussed with the Panel, such as transferring the process in the class, or, quite the opposite, keeping it asynchronous providing more time for their completion and email reminders or targeted reminders in e-Class, even drawing gifts as incentives. A first step to be considered is the investigation whether there is a systematic and intentional refusal of the questionnaire or an accidental negligence, still signifying a partial disvalue of the process.

III. Conclusions

The programme is supported by a satisfactory information management system that is further enhanced with additional data collection and analysis capabilities.

Low participation in students' questionnaires. The Programme should consider various approaches to significantly improve participation, utilising different tools, including the exploitation of the award "for outstanding achievement in teaching" as another motivation to e.g., "help your favourite teacher to get the award".

Panel Judgement

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

Panel Recommendations

- Increase participation in students' questionnaires, at least in a mean level. In this direction, the Programme might consider the in-class encouragement of students for participation in the surveys, the provision of sufficient time for their completion, the implementation of additional promotional events, the exploitation of the award "for outstanding achievement in teaching" as a motivation to e.g., "help your favourite teacher to get the award", etc.
- Keep upgrading the information system with further analysis capabilities.

PRINCIPLE 8: PUBLIC INFORMATION CONCERNING THE POSTGRADUATE STUDY PROGRAMMES

INSTITUTIONS SHOULD PUBLISH INFORMATION ABOUT THEIR TEACHING AND ACADEMIC ACTIVITIES RELATED TO THE POSTGRADUATE STUDY PROGRAMMES IN A DIRECT AND READILY ACCESSIBLE WAY. THE RELEVANT INFORMATION SHOULD BE UP-TO-DATE, OBJECTIVE AND CLEAR.

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

Therefore, Institutions and their academic units must provide information about their activities, including the PSP they offer, the intended learning outcomes, the degrees awarded, the teaching, learning and assessment procedures applied, the pass rates, and the learning opportunities available to their students. Information is also provided on the employment perspectives of PSP graduates.

Documentation

- *Dedicated segment on the website of the department for the promotion of the PSP*
- *Bilingual version of the PSP website with complete, clear and objective information*
- *Provision for website maintenance and updating*

Study Programme Compliance

I. Findings

The website of the Program (<https://dept.aueb.gr/gradcs>) contains detailed information about it, its purpose, the members of the Coordinating Committee, the Study Regulations, the Study Program, the teaching staff, the application process, the selection criteria as well as current announcements. The website is also available in English at <https://dept.aueb.gr/en/gradcs>.

The website aims to provide information for students at PSP as well as for those interested to study at PSP.

The PSP website is based on the unique format (template) of the University, resulting in a more or less uniform appearance and common tabs/links of the sites.

The outline of contents of the Program's site is:

- Program Overview
 - Aim
 - Program Structure
 - Student Handbook
 - Program Regulations
 - MSc Dissertation Guidelines
 - Teaching Faculty
 - Fees & Scholarships
- Candidates-Admissions
 - Target-Prerequisites
 - Application Process
- Career
- Life in Athens (only in English version)

- Research
- Quality assurance
 - Quality policy
 - Certification
 - Evaluation of educational program
 - Quality Assurance Unity
- Contact

PSP Study Guide

The Study Guide is posted in electronic form on the site of the Program, under the tab “Programme” at <http://grad.cs.aueb.gr/page.php?id=122> and is downloadable, in the Greek version. It includes all the information necessary to inform students on matters related to the program and its study regulations, the learning outcomes of courses, the applied teaching and learning processes, as well as, information about a range of topics of general interest and services provided to students by the Department and the University (that are not expected to be found there). An English version (<http://grad.cs.aueb.gr/en/index.php>) of it contains only a short description of the Program.

Electronic Course Teaching Materials

The e-Class platform (<http://eclass.aueb.gr>) of the University is the basic teaching support for the undergraduate program and postgraduate study programs. However, it is only for internal use, with only very general info in public.

The Internship Office website (<https://www.aueb.gr/el/internship>) and the Erasmus page (<https://www.aueb.gr/el/international/content/erasmus>) that are provided centrally by the university would be a tool for publishing internship info, in case the Program proceeds in these activities.

The site contains only generic information in Quality Assurance, and only in its Greek version.

There is no direct reference from the site in labs infrastructure and the research activities. The university publishes some students' works for specific labs.

Information Maintenance

The content of information made public through the Program's website but also through social networking sites, are supervised by an appointed web Administrator, under the supervision of the Director as well as the Committee Communication of the Department of Informatics.

The maintenance and updating of the website and the social web pages of the Department are specified to be implemented through subprocess 6.1 ("Creation, maintenance, updating and evaluating websites, online applications and other media information") of Process 6 ("Disclosure of Information"), as outlined in “ΕΣΔΠ-ΟΠΑ-VER3(2022) τελικό”. Adequacy, clarity and objectivity of the information provided on the AUEB websites are also evaluated through the internal quality system as part of process 4 – "Internal evaluation".

In addition to the web administrator, the Secretariat is also able to post informational material.

Student Welfare

There is no specific section on students' life and welfare in the Greek Version (apart from the aforementioned info in the programmer's guide, In the English version, there is a "life in Athens" tab, with only general information about the city and the transportation services in the city and the country.

The program is listed in the Central Website of the Organization Study in Greece of the Ministry of Education (<https://masters.minedu.gov.gr/Masters/index/gr>) with a short but comprehensive entry about the Program and with keywords: Algorithms, Intelligent Mobile Networks, Social Networks, Digital Media, Database Design.

The University has a 3-years old entry in the Hellenic Academic Research Data Management Initiative, (<https://hardmin.heal-link.gr>) with a short description, however none of its Schools is listed or any information is provided.

No information was given on whether there is any interaction of the Program with the incubation & acceleration centre of the University (<https://acein.aueb.gr/en/>).

The official PSP Facebook group page (<https://www.facebook.com/groups/6202273214/>) reproduces the announcements and activities of the Program and acts as a complementary channel two-way communication with active students, alumni and the general public. It also helps in advertising the PSP and approaching prospective students. The group has a considerable number of members but the info is rather poor and seems not regularly updated.

II. Analysis

The program's site displays the basic necessary info for its structure and operations.

It appears that there is lack of full English support which is crucial for a program that eventually hopes to swift into "internationalisation".

Improvements should also be considered in the organisation of the material. Some items are not in the place where one expects intuitively to be found. Without duplicating the material, some more tabs could lead to the right place for finding the info. Some links are not obvious as such e.g., by colour or underlining. Thus, (in the English version only) there is an elementary tab in Athens life, whereas interesting material existed elsewhere, in the Program's or University site (e.g., the 3d presentation of the University, and the students' welfare info are not listed).

In a similar way, before updating the whole Program's site with English version, a single note like 'for more info in English press' in a striking place of the home page, could temporarily help.

It is a good practice to adopt a common format for all Programs of the university, and it should be sensible to extend the alignment between the Greek and the English pages and menus of the site. However, this may be the cause of some navigational inconveniences, e.g., away from what is intuitively expected, the name of the university and the school operate as links to their pages, whereas explicit links and home key are missing.

III. Conclusions

The Programme publishes information about its structure and its teaching and academic activities in its site and social media, to a satisfactory degree. However, there are navigational inconveniences, lack of info in labs and research activities, no welfare issues and not full synchronisation with the English version.

Panel Judgement

Principle 8: Public information concerning the postgraduate study programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- Enhance the provision of sufficient Information on research topics and labs related to the PSP on the website.
- Ensure the existence of consistent information across both language sections (Greek and English).
- Reconsider (in the framework of the common appearance) the structure and the allocation of info among the Programs', Schools', Departments' and University's sites.

PRINCIPLE 9: ON-GOING MONITORING AND PERIODIC INTERNAL EVALUATION OF POSTGRADUATE STUDY PROGRAMMES

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

The regular monitoring, review, and revision of postgraduate study programmes aim at maintaining the level of educational provision and creating a supportive and effective learning environment for students.

The above comprise the evaluation of:

- a) the content of the programme in the light of the latest research in the given discipline, thus ensuring that the PSP is up to date*
- b) the changing needs of society*
- c) the students' workload, progression and completion of the postgraduate studies*
- d) the effectiveness of the procedures for the assessment of students*
- e) the students' expectations, needs and satisfaction in relation to the programme*
- f) the learning environment, support services, and their fitness for purpose for the PSP in question*

Postgraduate study 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.

Documentation

- *Procedure for the re-evaluation, redefinition and updating of the PSP curriculum*
- *Procedure for mitigating weaknesses and upgrading the structure of the PSP and the learning process*
- *Feedback processes concerning the strategy and quality goal setting of the PSP and relevant decision-making processes (students, external stakeholders)*
- *Results of the annual internal evaluation of the PSP by the Quality Assurance Unit (QAU), and the relevant minutes*

Study Programme Compliance

I. Findings

The programme of study was designed and established in accordance with the relevant policies of the institution. The Internal Quality Assurance System encourages the accomplishment of a high-level of quality in the operation of university as a whole and at the departmental/programme level. Programme lead and members of staff that involved in this offered postgraduate programme have a very clear vision of what they want to offer to the students and how this course could potentially involve by introducing new areas within the AI/ML domain to further align it with current and emerging needs.

External stakeholders are fully aware about the specifics of the different modules and fully appreciate the overall quality of the programme. They do provide feedback; however, this seems to be in an ad hoc manner even though a more formal framework is under discussion

where such feedback could be provided. In overall, the monitoring and evaluation of the programme is in full accordance with the international practices and the principles and guidelines stemming from HAHE. As also eluded in other sections of this report the content of the programme can be deemed as up-to-date and provide to the students a well-rounded view on the current and emerging needs in the industry as well as the research challenges within the scope area of the different modules. In addition, the programme manages to create competitive graduates that are well sought within the industry; this has become clear from the discussion with the stakeholders. The completion rate is close to 100% but the submission of the final Thesis seems to vary. Extensions are normally granted by the Programme Director but there is no clear framework on mitigating circumstances that such extensions could be accepted. This might relate to a variable workload per Thesis because it is understandable that exceptionally there will be circumstances beyond the control of a student that might detrimentally affect their academic progress in the work but there seems to be a significant number of such requests. There are clear procedures regarding the assessment of students in the different modules and this is well documented into the student handbook. There is also the provision of teaching awards to members of staff that achieve the highest scores in the evaluations. For the Thesis there is a documentation provided that details in 10 pages the specifications but there is no clear description of the assessment criteria.

II. Analysis

Within the Department it has become clear to the Panel that policies are in place to collect, analyse, present on an annual basis all data relating with the postgraduate program and if required changes could be implemented. On a higher layer and as part of these policies, the institution's Quality Assurance Unit (MODIP) oversees the process to ensure that those procedures are followed, and actions are taking place in a structured manner. Having said that, feedback from stakeholders seems to take place in an unstructured manner and there is no specific framework in place on how external stakeholders could actually steer and/or provide feedback and how this information is utilized within the Programme and the Department as a whole. Even though assessment criteria for taught modules are well explained it is not the case for the submitted thesis from the students. For the Thesis, there are no clear criteria of how marking is happening and how different elements of the work contribute to the mark. In the documentation it is stated that there is a panel of three academics and students present 8 to 10 minutes using slides - it is not clear how the Thesis structure, writing and overall presentation of the text contribute to the final mark.

III. Conclusions

The programme immerses the students to the current state of art in different areas covered by the offered modules and provides competitive graduates that are fully equipped to excel at both the academic (move towards a doctoral degree) or industrial environment. Some attention should be placed on the actual reasons of why students request extending their submission of the Thesis and a formal framework should be in place to accept or decline such

requests. Furthermore, the evaluation criteria for a submitted Thesis assessment should be defined in a clear and transparent way. Teaching awards is an excellent policy and should be retained.

Panel Judgement

Principle 9: On-going monitoring and periodic internal evaluation of postgraduate study programmes	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

- Feedback from external stakeholders should be further formalized with a time-plan of implementation and how this feedback can be provided in a more structured manner.
- Would be important to create clear criteria on how submitted reports (Thesis) from the students are evaluated; The evaluation of the thesis should be done using a predefined set of criteria and marking should be decomposed according to those criteria.
- Feedback in assessments is an important element (including feedback for the submitted Thesis); will be pedagogical to provide clear and concise written feedback for all different assessments.

PRINCIPLE 10: REGULAR EXTERNAL EVALUATION OF POSTGRADUATE STUDY PROGRAMMES

THE POSTGRADUATE STUDY PROGRAMMES SHOULD REGULARLY UNDERGO EVALUATION BY PANELS OF EXTERNAL EXPERTS SET BY HAHE, AIMING AT ACCREDITATION. THE TERM OF VALIDITY OF THE ACCREDITATION IS DETERMINED BY HAHE.

HAHE is responsible for administrating the PSP accreditation process which is realised as an external evaluation procedure, and implemented by panels of independent experts. HAHE grants accreditation of programmes, based on the Reports delivered by the panels of external experts, with a specific term of validity, following to which, revision is required. The quality accreditation of the PSP acts as a means for the determination of the degree of compliance of the programme to the Standards, and as a catalyst for improvement, while opening new perspectives towards the international standing of the awarded degrees. Both academic units and Institutions must consistently consider the conclusions and the recommendations submitted by the panels of experts for the continuous improvement of the programme.

Documentation

- *Progress report of the PSP in question, on the results from the utilisation of possible recommendations included in the External Evaluation Report of the Institution, and in the IQAS Accreditation Report, with relation to the postgraduate study programmes*

Study Programme Compliance

I. Findings

Following the online discussions, it appears that all members of the staff have realised the importance of the QA process and its contribution to PSP's continuous improvement.

All internal stakeholders of the programme, including academic, administrative and support staff, and students, are actively engaged in the current Accreditation review process with EEAP.

It appears that the PSP (Doc. A18), has recently taken into consideration the specific recommendations related to postgraduate programmes, included in the Institution's external evaluation Report (November 2015), as well as, the IQAS accreditation report (February 2019).

Since, this is the first time that the PSP undergoes an external evaluation / accreditation, there are no further specific previous recommendations from any external review Body.

II. Analysis

As already discussed in findings, faculty and staff were sufficiently aware of the importance of the external review and did their best to present relevant information to our Panel in a timely and efficient manner.

Sufficient evidence, upon specific actions and measurements following the related to PSP activities and responsibilities recommendations, found in the earlier Institutional Evaluation (2015), the Institutional IQAS Accreditation (2019), was provided. This is also the case, following the internal evaluation process already implemented and documented in the material provided.

As is described in the material provided (Doc. A1.), the PSP will consider the accreditation comments and set up and implement an action plan towards the KPIs, which will be defined against any recommendations.

III. Conclusions

Although there was no previous PSP external review, the PSP commitment to the spirit and the processes of Quality Assurance (QA) should be evident in all principles and aspects.

The PSP should establish and/or extend formal and well-defined procedures to elicit, use and evaluate feedback from students and external stakeholders (graduates and partners).

It is strongly suggested that the PSP keeps minutes of relevant meetings / committees for QA purposes. This will provide the necessary documentation of the QA activities towards the improvement of the programme and provide evidence for monitoring purposes.

Panel Judgement

Principle 10: Regular external evaluation of postgraduate study programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

The PSP should increase its efforts towards sharing QA review results, conclusions, scheduled actions and decisions taken, with all internal and external stakeholders, encourage open discussions and formal procedures, raise QA culture and expand all stakeholders' active and continuous QA contribution.

PART C: CONCLUSIONS

I. Features of Good Practice

- The implementation of many QA procedures, promoted and supported by the Institution, for the successful operation and continuous improvement of the Programme. Examples, include:
 - the establishment of the annual award for outstanding faculty's teaching performance following students' course surveys,
 - the existence of the External Advisory Committee,
 - the activation of the Academic Advisor mechanism, the complaint management mechanism,
 - the collection of surveys from graduates on an annual basis,
 - the availability of multiple statistics and relevant results of QA activities on the academic website, etc.
- The student complaints management procedure which has been adopted, strengthens further the student-centered educational process.
- Faculty expertise and strong research profile and commitment towards a flexible personalised student-focused learning curriculum with remarkable research-oriented implementation approach.
- A very positive team spirit was evident during the meetings with academic and administrative staff.
- The PSP website is based on the unique format (template) of the University, resulting in a uniform appearance and common tabs/links of the sites.
- The development and the implementation of the Staff and Library users' satisfaction surveys.
- The PSP is a one-academic year program which enables students to proceed with further studies or professional evolution, without wasting time.

II. Areas of Weakness

- The availability and details of infrastructure and services are not properly communicated to the students of the Programme.
- A defined measured set of quality requirements for the implementation of the PSP thesis and detailed assessment criteria are not available.
- The PSP is currently not involved in any student mobility activity.
- There is no provision of full or partial internship implementation in the programme.
- The insufficient communication and dissemination of course assessment results and corresponding actions to students.

III. Recommendations for Follow-up Actions

- The PSP should share all important and relevant QA results to its stakeholders, enhancing the provision of feedback to all internal and external stakeholders, further raising QA culture and extending their active QA contribution.

- Systematically promote and extend the active QA participation of all external stakeholders (next to existing best practices, like those of the External Advisory Committee or the surveys collected from graduates), capitalising on staff's wide network of external relations and the support of its graduates.
- Further increase Students' participation in course evaluations.
- The PSP should carefully re-evaluate, analyse and document its approach, towards the duration of the programme with its research-oriented nature vs the intime completion of the required research-oriented thesis, and also its impact on the enhancement of its international recognition.
- A re-thinking of the programme if new members of staff are recruited and new modules offered into the programme (i.e., it is not recommended for example to just add more selective modules) is encouraged.
- Potentially consider decreasing the number of selective modules that are offered to decrease the possibility of having void modules at the start of the academic year.
- The PSP should clearly mention in its documentation for student candidates, that the offering and implementation of its wide range of core or elective courses per semester, described in the Study Guide, depends on the number of registered students.
- Further systematize and document the information collected in relation to the market demand for professional qualifications expected from the program's graduates.
- The PSP is encouraged to promote and support the formation of an Alumni membership aiming at the active engagement of its graduates in periodic activities (e.g., industrial Open Days), strengthening the PSP's visibility/promotion and QA processes.
- Include aspects related to equality, diversity, and inclusion in the Student Study Guide(s).
- A defined measured set of quality requirements for the implementation of the PSP thesis, as well as, clear criteria on how these reports (Thesis) from the students are evaluated, should be in place and well documented;
- The availability of academic infrastructure and services should be constantly and properly communicated to the students of the Programme.
- A clear decision-making process should be in place in order to create a fair allocation of responsibilities within the Department.
- Ensure the consistent provision of all PSP related information on its website, in both languages (Greek and English), including those on research topics and labs related to the PSP.
- Feedback from stakeholders should be further formalized with a time-plan of implementation and how this feedback can be provided in a more structured manner;
- Feedback in assessments is an important element (including feedback for the submitted Thesis); will be pedagogical to provide clear and concise written feedback for all different assessments;
- The PSP should increase its efforts towards sharing QA review results, conclusions, scheduled actions and decisions taken, with all internal and external stakeholders, encourage open discussions and formal procedures, raise QA culture and expand all stakeholders' active and continuous QA contribution.

IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are:

2, 3, 4, 5, 6, 7, 8, and 10.

The Principles where substantial compliance has been achieved are:

1 and 9.

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 External Evaluation & Accreditation Panel

Name and Surname	Signature
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<p>2. Dr. Dimitris Kabilafkas OTE, Greece</p>	
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