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HELLENIC REPUBLIC

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Accreditation Report

for the Postgraduate Study Programme of:

Electronics-Radioelectrology and in Control & Computing

Department: Department of Physics

Institution: National and Kapodistrian University of Athens

Date: 17 November 2023

Ευρωπαϊκή Ένωση
Ευρωπαϊκό Κοινωνικό Ταμείο

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

ΕΣΠΑ 2014-2020

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Report of the Panel appointed by the HAHE to undertake the review of the Postgraduate Study Programme in **Electronics-Radioelectrology and in Control & Computing** of the **National and Kapodistrian University of Athens** for the purposes of granting accreditation

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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 in **Electronics-Radioelectrology and in Control & Computing** of the **National and Kapodistrian University of Athens** comprised the following five (5) members, drawn from the HAHE Register, in accordance with Laws 4009/2011 & 4653/2020:

1. **Dr. Konstantinos Banitsas (Chair)**
   Brunel University, London, UK

2. **Prof. George Angelos Papadopoulos**
   University of Cyprus

3. **Prof. Michael Komodromos**
   Frederick University, Nicosia CYPRUS

4. **Prof. Christos Flytzanis**
   Ecole normale supérieure, France

5. **Mr. Dimitrios G. Selimis**
   PhD Student, Department of Informatics and Telecommunications,
   University of Peloponnese, Tripoli, Greece

II. Review Procedure and Documentation

The External Evaluation and Accreditation Panel (EEAP from now on) was formed on Wed 2nd November 2023 and was immediately given access to all relevant materials through the ETHAAE web site. The accreditation involved two postgraduate degree programmes: *M.Sc. in Computer, Telecommunications and Network Engineering* and *MSc in Electronics-Radioelectrology and in Control & Computing*. There were some unofficial meetings with the other members of the committee to share some initial thoughts and get synchronised.

It is worth mentioning that there was very little time available to go through all the material uploaded which accounted for thousands of pages in total for both PG programmes. Furthermore, it is very difficult to arrange availability for such a committee with only two or three days of notice, as most will have prior teaching and research commitments. It is, therefore, highly recommended that ETHAAE makes every possible effort to give advanced warning in such invitations; something that will benefit ETHAAE as well by increasing the experts' participation level.

The quality of the documentation provided by both PSP were excellent and very detailed.

The online accreditation begun on Monday the 6th of November. It is worth mentioning that up until (and including) that first day, there were only four members forming the EEAP. In the morning of the second day of meetings, the committee was informed that a fifth member was added. Unfortunately, this came a bit late as the final member had already missed the whole first day of meetings and thus limiting his capability of providing any meaningful feedback regarding the first PSP.

It is also worth mentioning that all members of staff, both from the accredited institutions and ETHAAE were extremely helpful and were available constantly to provide extra materials and additional assistance when needed.

As stated, both PSP accreditations were done online. That somehow limited the ability to experience everything with own eyes, but this was mitigated with additional material provided by the PSP management. As such, there were several slide presentations containing graphical and pictorial information as well as two videos (totalling about 40 minutes) depicting a tour of the premises including lecture halls, labs, library etc.

During the first day of the meetings, the committee had a chance to talk to both Heads of Departments as well as MODIP and other members of the academic staff. This was done on a friendly and collegial environment.

During their corresponding date of each PSP (Tue and Wed), the committee had a chance to talk to current students, past students (alumni) and Industrial stakeholders. There were valuable conclusions drawn by each of these meetings, with emphasis on the latter where interesting ideas and suggestions surfaced.

Finally, each day was concluded with a short meeting with the corresponding HoD and a brief discussion of the findings of that day.

III. Postgraduate Study Programme Profile

The *MSc in Electronics-Radioelectrology and in Control & Computing* PSP has a long history as its predecessor PSP was established back in 1946 with a similar name while in 2018 the name changed to what it is today. Most of the cohort comes from UG graduates of the Physics department, as well as graduates from various telecommunications and computing backgrounds. It lasts for three six-months terms; with the last term being related mostly to the dissertation. Each term successfully completed translates to 30 ECTS totalling 90 ECTS.

Applications varied throughout the years, especially affected by the pandemic, but during the last cycle there were 36 actual students studying, while the data provided seem to indicate that there is closure in the gap between intake and graduations (attrition rate).

It is worth mentioning that graduates from this MSc are regarded as highly skilled by the industry, as evident by our discussions with the industrial stakeholders, while the whole MSc is capitalising in the branding of the Kapodistrian University.

Finally, this MSc is enjoying some regulatory benefits, with its graduates being able to gain professional rights and qualifications as dictated by the Greek legislation. That partially explains the rather peculiar Greek title of this PSP.

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

The *MSc in Electronics-Radioelectrology and in Control & Computing* is a long-established PSP that aims to create highly skilled graduates to man specialised positions in the industry and equipping its graduates with state-sought qualifications.

This is the first time that this course is undergoing such an accreditation and as such one would be expecting a number of things to be out of place. Nevertheless, the institution has done a wonderful job trying to address all issues, at least in principle.
With that in mind, the institution has established all the necessary procedures to ensure that this PSP has: appropriate goals set, a unit (MODIP) to check the quality of this programme regularly, a system of internal checking and a method of addressing any shortcomings with clear and measurable metrics.
More particularly:

- MODIP seems setup and functioning as needed.
- Internal evaluations have taken place, identifying issues to be addressed (Appendix A8).
- These issues are then analysed, and specific metrics are set to address those, with owners indicating responsibility of each of these issues (Appendix A3).
- Most of the proposed solutions suggested in A3 are feasible and within a reasonable time frame.
- In general, both of the documents mentioned above, describe a course that is compatible with the European and National qualifications framework.
- Finally, all the documents involving quality assurance are published in the web pages of the course and are relatively easy to find.

II. **Analysis**

As mentioned above, the institution has taken the necessary steps to ensure that a quality assurance framework exists for this course by monitoring, evaluating and addressing any issues that may arise.
The institution creates very highly qualified graduates that are well respected by the industry. This is evident by both the skills level of the current and past students as well as their reputation in the labour market.
Furthermore, the management of the course seem to be very aware of how such accreditations would benefit both students, staff and the course in general. This was made clear by the willingness of the leadership of the course to listen, evaluate and adopt any recommendations made by the committee during our talks.
Some issues that might need attending are:

- The internal evaluation of the PSP seems shallow and should be expanding to more detail.
- The students' feedback is practically non existing. This would be analysed further within another principle.
- The items highlighted by the above evaluation are addressed with measurable goals/actions. However, there seems to be too many owners for each item. That might lead to loss of accountability if/when this item is not resolved as expected. Furthermore, some actions seem under ambitious (i.e. raise the students' feedback from 2 to only 4), or the use of a personal tutor (keeping to 4).

- Although the internal evaluations and quality assurance documents are published on the web, they do not seem to exist in English. The programme specifically states that English language is also supported in this PSP.
- It is hard to comment on the financial viability of the PSP as there are many scholarships and the tuition fees seem very low. It is presumed that significant state funding would be of support to the PSP, otherwise it would be impossible to break even on the expenses of the course.
- Special mention to the very high level of the teaching staff; most being actively involved in research. This allows them to promote their research within their teachings.
- Finally, even though support mechanisms exist (personal tutor, welfare office, etc), students seem to underutilise them either because they do not appreciate their value or because they are not made aware of their existence.

III. **Conclusions**

The reviewing committee verified that all of the prerequisites for this principle have been addressed, with different levels of success for each. Within the analysis (above) a number of issues are highlighted and can be extracted and addressed in time for the next accreditation.
In conclusion, this PSP is of high quality, as evident by a lot of factors. Several details are to be highlighted in the following sections. These are not expected to be major and should be implementable relatively easily. This will allow for the course to follow an even more impressive trajectory that would benefit both students and members of staff.

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	**X**
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

R1.1 Increase students' feedback
R1.2 Better inform students about support services
R1.3 Be more vigilant in internal evaluations

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 PRORAMME 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 Program started in 1946 and it was the first postgraduate program in Greece for a Professional Diploma in Electronics and Radio-Electrology. In 1972, the specialization in Electronic Automation was added to the program. The program became inter-departmental in 1994 (ΦΕΚ 254-8/4/1994 τ. Β'), operated by the Department of Physics and the Department of Informatics and Telecommunications. In May 2018, the two specializations of the program were defined, namely (i) Electronics - Radio Electronics and (ii) Electronic Automation. The program consists of 90 ECTS. For all courses, the attendance/practice hours of each are three (3) per week including tutorial/laboratory exercises or seminars. The thesis is credited with 18 ECTS. Students can register for full-time (3 semesters) or part-time (6 semesters) studies.

II. Analysis

The curriculum of the program compares well with similar programs and the courses cover a wide range of topics that satisfy the learning outcomes of the program. The structure and organization are considered satisfactory in fulfilling the knowledge and skills objectives of the program. The program ends with a thesis that contains a research component. The Student Guide offers a complete description of the program and information of procedures, rights, and obligations of the students. The academic body responsible for the operation of the program is the Postgraduate Studies Committee. Even though there are regulations in place for the revision of the program, at this stage the activities in periodically reviewing the program are more procedural rather than substantial. The opinion of the program graduates and other external stakeholders is incidental, and it is usually sought through informal communication with faculty members of the collaborating departments in any efforts for reforming the program. Also, during the implementation of the program, the degree of achievement of the expected learning outcomes is assessed with examinations, and student homework. However, the assessment of learning outcomes attainment does not differentiate among individual outcomes. Assessing attainment of individual learning outcomes would enrich the efforts towards program continuous improvement.

III. Conclusions

The development of the existing inter-departmental Program was developed through renovation and updates of older versions to accommodate market needs. The development of the Program followed a well-defined process as required by NKUA. Since the two departments participating in the Program operation are actively involved in research, the courses taught contain portions with a research character. The structure, content and organisation of courses and teaching methods used are considered appropriate.

Panel Judgement

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

Panel Recommendations

R2.1 A well-defined procedure should be developed and applied for the systematic revision of the program which will include the main stakeholders of the program.

R2.2 The program should develop processes that assess attainment of individual learning outcomes in each course to enrich the efforts for program continuous improvement.

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

Firstly, the courses which are available in this PSP have a wide spectrum thus covering adequately the PSP's field. A lot of the courses utilize assessment methods contributing to a

student's final assessment, but mainly a final assessment is used for student's evaluation. It should be noticed that the assessment criteria could not be evaluated, since they become available during lectures or after enrolment to the corresponding course. Moreover, students must attend the course in person to deliver all the available courses. Further most of courses' notes are available online, i.e. something like online classes, thus giving the opportunity to students of flexible learning paths. Through participation in individual assessments, students are encouraged to develop individual skills, while also the large availability of elective courses contributes to the students' individual growth. All students have excellent relations with the faculty both, during delivery and during evaluation of the available courses. Through those interactions students are seen as active partners in the learning process. In addition, the availability of formal procedures for student appeals, as well as the successful application of student advisory was not so clear in most cases. Lastly, while there are in place student satisfaction surveys, relatively few students participate in them, thus not proactively evaluate the courses. The EEAP received assurances from the teachers participating in the PSP that they will try to promote to students the student satisfaction surveys to a greater degree. Evaluation is performed annually, as directed by MODIP.

II. Analysis

Overall analysis of the PSP indicates the compliance with the directives of student-centred learning and teaching, by effectively promoting interaction among students and faculty. Further students' individual skills are developed alongside each individual's personal growth. In addition, the teaching processes are always under correction and constant improvement through regulated and systematic evaluations. Students should play a crucial role in this improvement mainly through individual interactions between them and the teaching staff. The teachers also appear to be fully aware of the needs of the PSP and take appropriate action.

III. Conclusions

The PSP fully complies with the Principle.

Panel Judgement

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

Panel Recommendations

R4.1 It is recommended that the teachers should promote and encourage more, the students to participate actively in the student satisfaction surveys, while also further promote the role of the student advisor.

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

Regarding this issue, students can find the enough of the PSP documentation online and thus full advantage of the available services can be granted. Students can, at a great degree, get informed for the availability of services by the PSP, but it should be noted that students should be better informed about their time obligations before registering. There is a close interaction between students and administrative staff, thus providing to students the possibility of monitoring their own progress. Moreover, there is sufficient encouragement towards student's mobility. Despite this fact it seems that not many students choose this option. Further ECTS is applied across the curriculum, while also there is a student's guide for the PSP. However, it should be mentioned that there is a set of quality requirements for the implementation of the PSP thesis, but the Thesis Handbook is absent. Further the thesis can be written in both Greek and English, depending on the choice of the students. In addition, for now it seems that practical training is on adaptation process. The teaching staff recognized this and reassured the EEAP of finding a solution. It should be mentioned though that, conferences and seminars are organized in the context of the PSP promoting networking between students and relevant industrial or academic partners. A Code of Research Ethics for the PSP is also available. Lastly, the Diploma Supplement is issued without request and free of charge both in Greek and English.

II. Analysis

The PSP seems to follow the guidelines of the Principle for the regulation of its studies. The Students Guide contains the majority of the information that students need during their studies. Furthermore, all necessary information and assessment criteria for the PSP's thesis are contained. However, the issue of the Thesis Handbook is highly recommended, alongside the issue of practical training. Finally, the student progression is monitored through the use of the secretariat's electronic system.

III. Conclusions

The PSP fully complies with the Principle.

Panel Judgement

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

Panel Recommendations

R4.1 It is highly recommended that the PSP issues a Thesis handbook, to provide clear and concise instructions for conducting its theses. Further PSP should include practical training, to develop an overall job-specific or broader skills.

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

The Electronics and Radioelectrology and Control and Computing program is offered as an interdepartmental graduate degree between the Department of Physics and the Department of Informatics and Telecommunications. The offered courses are taught by the faculty of both departments as well as, where appropriate and needed, by external instructors. The hiring (or the promotion) of any faculty member in Greek universities is governed by national laws. Nevertheless, as both departments enjoy a very good international reputation, for any available faculty vacancy they attract high calibre candidates. Although the panel was told that some faculty take advantage of sabbatical leaves, it is not evident to what extent this mobility mechanism is used. The workload of the faculty is between 8-12 hours per week, which is considered appropriate, aligns with international good practices and leaves sufficient time for research activities. It is evident that the offered program is linked to the research activities of the faculty, as a number of graduate theses generate scientific publications, and a number of this program's graduates pursue Ph.D. studies. There is an established procedure for the faculty getting feedback from the students by means of suitably formed questionnaires; however, the percentage of students filling these

questionnaires is typically very low to be of any statistical value. The specialisations and research interests of the faculty in the involved departments aligns well with the theme, scope, and offered courses of the program in question.

II. Analysis

The faculties of the two departments involved in the offering of this program cooperate smoothly and have complementary role. The instructors have the required qualifications, and the offered program aligns well with the interests of the involved departments. There is financial support for the faculty to attend conferences. The low involvement of students in providing feedback needs to be addressed as well as a higher use of the sabbatical leave mechanism.

III. Conclusions

Overall, there is a well-established procedure for the recruitment of teaching staff and good conditions for undertaking their duties.

Panel Judgement

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

Panel Recommendations

R5.1 Increase the participation of students in providing feedback

R5.2 Increase the number of faculty taking advantage of sabbatical leaves

PRINICPLE 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 LEARING 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

The academic unit seems to provide the whole infrastructure to support the PSP operation. Specifically, students have easily access to the university library, the IT infrastructure along with classrooms. A full in person inspection to the facilities could not be facilitated due to the nature of this assessment, but some images of the used equipment have been provided. Further it should be mentioned that laboratories are used for other postgraduate as well as undergraduate studies. In addition, the administration of the PSP appears to cooperate smoothly with the postgraduate students thus pointing to a satisfactory operation. Lastly, the PSP does not require tuition, thus a tuition utilisation plan is not applicable.

II. Analysis

The Department seems to provide all the necessary facilities and services for the PSP needs. The student body is well aware of the facilities that are available to them. The administration staff appears to smoothly cooperate with the postgraduate students ensuring the proper operation of the PSP.

III. Conclusions

The PSP fully complies with the Principle.

Panel Judgement

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

Panel Recommendations

PSP is compliant.

PRINCIPLE 7: INFORMATION MANAGEMENT

INSTITUTIONS BEAR FULL RESPONISBILITY FOR COLLECTING, ANALYSING AND USING INFORMATION, AIMED AT THE EFFICIENT MANAGEMENT OF POSTGRADUATE STUDY PROGRAMMES AND RELATED ACTIVITIES, IN AN INTEGRATED, EFFECTIVE AND EASLILY 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

The University of Athens has established a set of QA principles for the collection of data regarding students, teaching staff, course structure, annual monitoring, periodic assessments, etc., and operates centralised information systems (such as Unitron, eClass), providing effective academic services and tools to its Programmes for their administrative and QA purposes. Evidently, there are no established mechanisms for eliciting feedback and QA support from graduates (including employability and career paths). Furthermore, the involvement of on-going students in student satisfaction surveys is low. However, students appear to be well informed about the main issues related to their studies, rights as students as well as mitigation procedures for any difficulties they may encounter. The collected data has been analysed showing a decline in the number of incoming students for a number of years, although recently this decline seems to start to reverse.

II. Analysis

Data collected from various sources provides a holistic -although limited- view of the program's performance and student experience. 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. Regular data collection from students at the end of each teaching semester allows for periodic evaluations and identification of trends for improvement. Nevertheless, persistent low response rates raise concerns about QA data adequacy and effective decision-making. Performing dedicated regular surveys involving other stakeholders (in addition to the students), for example, alumni and the existing industrial network may enhance the incorporation of useful feedback for the continuing review and development of the program.

III. Conclusions

The department must further elaborate on using the institutional information systems and ensure the comprehensive data management and quality assurance processes contribute to its effectiveness and success. The department should consider extending and formalising external stakeholders' active participation in its QA processes, including, among others, alumni. An alumni association's absence hinders valuable feedback for continuous program improvement and visibility to the industry.

Panel Judgement

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

Panel Recommendations

R7.1 A formal procedure should be created to systematically promote the active participation of external stakeholders, capitalising on staff's wide network of external relations in PSP QA processes.

R7.2 The formation of an Alumni membership that also includes participation in periodic activities (e.g. an industrial open day), aiming to actively engage its members towards strengthening the program's visibility/promotion and QA processes towards its continuous improvement.

R7.3 The involvement is more on-going students in the student satisfaction surveys should be sought.

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

The accreditation review of the PSP-2 proceeded with presentations and discussions of the main issues of the program inclusive the teaching and laboratory facilities and information for student support and guiding; for the purpose extensive documents were provided on-line extensively covering all these issues. The PSP-2 is essentially part of the Department of informatics and Computer Sciences of EKPA founded with joint involvement of the Physics Department and accordingly the engineering orientation is dominant in its scope and organization based on well-established and evolving technology.

I. Findings

The issues however concerning Principle 8 were cursively alluded in the presentations and discussions with the Committee. The provided on-line documents contained certain references and information about these issues but in highly formal way for external use but are incomprehensive to be of any use for the students without appropriate direct contact and council with their teachers which is not yet developed in the institution. As a consequence, the students were not informed of the interest and impact of the additional possibilities offered by the Institution in collaboration with other institutions in particular within the European Union for their education and professional career and the openings to new and interesting directions in their subsequent professional careers; very few students were coming in direct contact with their teachers to exploit and benefit from these possibilities.

II. Analysis

From the discussions in zoom of the Committee with the selected graduates and current students it became clear that the missing of such supportive *institutional mentoring system* had drawbacks in several respects even in setting up and completing their study program, the

choice of the courses and difficulties in basic courses in particular if these were provided in zoom; with the laboratory work they were getting some direct contact with teachers and only with the diploma work had some contact and guiding with a teacher on the specific topic and eventually some help for their subsequent professional career in appropriate field or eventually continuing for an academic career. In addition several students had partial parallel jobs which could interfere with their studies in several respects if these were not connected with their studies in PSP-2. All these issues could cause delays in the completion of their studies and even failures; these issues were not sufficiently addressed in the presentations. On the other hand there was some information and advice about the labour market and some contacts with external organizations for the purpose.

In this context along with the improvement of the facilities and study program and research the educational system must also be structured for an efficient transmission and improvement of the expertise and acquisition of information through proper interaction and collaboration between scientists and in particular between students and teachers and for this the introduction and establishment of a) **the institutional mentor system** is both appropriate and imperative and this throughout the study program up to the obtention of the degree and b) a **following up** track of the graduates in their professional career and evolution to get a *feedback assessment of the mentor system* and use for future graduates**.**

In the present case the mentor system should be established by assigning pairs of students to a teacher preferably related to their choice of courses in the start of an academic year that will provide the council and appropriate support for their studies to each pair of students through personal informal meetings. This mentoring configuration can be reconfigured in the course of the studies and in particular in the choice of the diploma work which could be performed in another institution or organization or in the context of the European programs. The suggestion to assign a pair of students is based on the need also to train students to collaboration, joint action and mutual support in their studies and also later in their future activities. In this respect the two-year PSP2 was not clearly elaborated in semesters for courses and diploma work in the provided documents and in the presentations.

It should be stressed that the engineering/technology character of PSP-2 is should be properly taken into consideration in the introduction of the mentor function as sketched above.

III. **Conclusions**

By introducing the *mentor function* besides providing an institutional on-demand educative council and support to the students during their study in the PSP2 should also provide information concerning the possibilities for the students to effectively benefit from the European Union programs (Erasmus …Civis….) and contacts with appropriate organizations of the labour market and organize meetings and discussions with representatives of these organizations.

The *following up track* of the graduates in their subsequent professional career besides the feedback assessment of the mentor system should provide additional information and connections to the students regarding the labour market also its evolution and upcoming trends and the opening of new research directions jointly with other academic institutions.

Here, it is important to make the appropriate choices regarding Institutions in the European countries and how these address similar problems and in this respect the mentors should play an important role through their connections.

Panel Judgement

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

Panel Recommendations

R8.1 The main recommendation is the introduction of the institutional mentoring system in to provide a personalized on-demand educative council and support to the students during their study in the PSP2 and properly inform the students concerning the possibilities to effectively benefit from the European Union programs as well which provide many advantages for their education and subsequent professional choices.

R8.2 Jointly it is also strongly recommended to set up a following up track of the graduates in PSP2 in their subsequent professional career to provide additional information and contacts to the students concerning the labour market and its evolution and upcoming trends.

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 Internal Quality Assurance System (IQAS) which operates under the Quality Assurance Unit (QAU) is responsible for the entire range of functions and activities of NKUA. The objective of the IQAS is to monitor the attainment of high quality in the operation of the University through continuous improvement of its programs. The internal evaluation of the individual programs is performed by the departmental Internal Evaluation Team. There is a set timeline schedule for the periodic review of the program within the academic year starting in October and ending in July. The process includes electronic questionnaires for continuing students and graduates of the Program and completion of a report by the instructors of the courses describing the teaching and research activity during the academic year. At the end of the evaluation period the data collected is analysed and evaluated. The process is repeated annually. The evaluation results are composed in a comprehensive report which is presented and discussed in a

departmental meeting involving the program faculty and other supporting staff for consideration and Program improvements.

II. Analysis

It is evident that there is a good internal quality assurance system in place for the assessment and evaluation of the postgraduate program. Moreover, this process is well-defined and there is a specific timeline schedule that is followed. However, one of the components of the process, namely the participation of the students through the completion of relevant questionnaires seems to exhibit very low contribution. It is observed that there is limited interest by the students to contribute to this activity. The Program did not manage yet to convince the students of the importance of this feedback mechanism in the effort to improve the delivery of the Program. Furthermore, little convincing evidence has been shown that strongly relates any changes at the program level to conclusions resulting from the internal evaluation processes.

III. Conclusions

There is a good internal quality assurance system in place and its processes are well-defined. However, more effort should by applied in improving the effectiveness of the system to produce better results, which will enable the Program to benefit from continuous improvement actions.

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

R9.1. The program must campaign the importance of participation of the students in the process of continuous improvement. Furthermore, it is important to make the results of the yearly-completed process more visible to the participants so they can appreciate their value in the process of continuously improving the Program.

R9.2 The Program should seek more feedback from stakeholders outside the University, in a more structured way, to enhance the activities and effectiveness of continuous improvement.

R9.3. The Internal Evaluation Team should clearly link modifications in the Program to results obtained from the assessment and evaluation of data obtained from the Internal Quality Assurance processes.

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

The regular external evaluation of postgraduate study programmes is an important procedure to maintain and improve the quality and efficiency of the formation of well-trained scientists and engineers and more importantly provides information to HAHE for the appropriate support and guiding in the proper **function** of the institutions in organizing their PSP. This must be taken into consideration properly several aspects regarding structure and department configurations of the Institutions and their PSPs and the different services and facilities.

I. Findings.

The institutions must also evolve, and this necessitates to be properly taken into account in the evaluation procedure and the use of the collected information.

Thus equally important is the use of the collected information for the proper coordination of the postgraduate programs between institutions at the national level and the accreditation review and procedure must be appropriately reconfigured for the institutions to establish sustained collaborations and even joint postgraduate study programmes with consequent allocation and distribution of the funding and organization of the programs and in Greece this would help provincial institutions to improve their level and also the attraction of students with improved facilities and even arise and diversify the labour market and concomitantly the research facilities and technology.

II. Analysis

At presently such and other related considerations are missing from the policy and preoccupations of HAHE and similarly in the institutions and this should become an urgent issue in the accreditation and evaluation of postgraduate study programmes.

At presently joint postgraduate programs between different departments in the same Institution seem to take shape but with mitigated results. The present PSPs and similar ones issued from joint

involvement of the Informatics and Physics Departments in EKPA is an appropriate effort in this direction established 2018 and this is one of the first evaluations to draw any conclusions but should be carefully assessed for the purpose as Informatics is specifically becoming an essential tool in all fields of science, inclusive biosciences, and technologies but also in services. In this context one must be careful of the emergence and impact of the Artificial Intelligence in the education.

Clearly this can be extended in diverse configurations with different institutions and in particular benefit from European Programmes that promote such joint postgraduate degrees between two institutions in different countries.

III. **Conclusions**

In this context the accreditation procedure and review should be properly reorganized and coordinated with internal evaluations that more properly take into consideration the evolution of the PSP within the institution in particular by joint involvement of two different departments within the institution or different institutions inclusive within the European Union as there is appropriate interest and support for such PSP. These internal evaluations should be organized midterm between the external ones, at present these apparently being five-year terms.

Panel Judgement

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

Panel Recommendations

R10.1 HAHE might assist by setting up appropriate accreditation reviews for joint postgraduate programmes between different institutions preferably from different cities and as these are established to use the European Union Programmes for similar joint programmes with other countries with careful attention to the research activities and educational perspectives.

Part C: Conclusions

I. Features of Good Practice

- A very strong PSP designed to train future engineers and professionals.
- Very capable academic staff with willingness to improve.
- Strong student cohort.
- Valuable links with the industry and other stakeholders.
- Enjoys excellent reputation.

II. Areas of Weakness

- Very limited students' feedback.
- Limited use of student support mechanisms, including personal tutor.
- PSP can utilise industrial partners much more efficiently.

III. Recommendations for Follow-up Actions

This PSP is a really strong PG programme with a stellar trajectory. Any minor shortcomings identified are relatively small and do not take away the high level of dedication and delivery demonstrated by the staff and students. The suggestions below only serve to make the PSP even stronger in future accreditations. This committee is confident that even though this time the PSP achieved the highest score, the recommended actions would be followed as there is a clear willingness to improve, as evident by the teaching staff but mostly by the Head of Department's approach to this accreditation; which is commendable.

- Consider revising the name of the PSP to a more modern one that might attract more students.
- Promote students' feedback by making it more appealing (i.e. offer a gift or other incentives).
- There are wonderful labs available that can be used more to support learning. This is equally important to both UG and PG courses.

- During induction week/day, explain the support mechanisms available and their purpose. Compile all these information to a student's handbook and send as an email to each new student.
- Introduce an Industry Advisory Panel that can meet once or twice a year and:
    - Offer guidance on the courses taught
    - Discuss research opportunities
    - Present to students / graduates
    - Be part of students' project presentations

IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are:

1, 2, 3, 4, 5, 6, and 10.

The Principles where substantial compliance has been achieved are:

7, 8, 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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2. **Prof. George Angelos Papadopoulos**
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