ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
HELLENIC REPUBLIC

Accreditation Report

for the Postgraduate Study Programme of:

Modern Electronic Technologies

Department of Physics
Institution: University of Ioannina
Date: 27 November 2023

Report of the Panel appointed by the HAHE to undertake the review of the Postgraduate Study Programme of **Modern Electronic Technologies** of the **University of Ioannina** 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 of **Modern Electronic Technologies** of the **University of Ioannina** comprised the following four (4) members, drawn from the HAHE Register, in accordance with Laws 4009/2011 & 4653/2020:

1. **Prof. Sotiris Skevoulis (Chair)**
   Pace University, New York City, USA

2. **Prof. Petros Drineas**
   Purdue University, West Lafayette, USA

3. **Prof. George Angelos Papadopoulos**
   University of Cyprus, Nicosia, Cyprus

4. **Ms. Eftychia Mavrou**
   University of West Attica, Athens Greece

II.   Review Procedure and Documentation

The External Evaluation & Accreditation Panel (EEAP) was formed in the second week of November 2023 and received the accreditation supporting material concerning the Postgraduate Study Programmes (henceforth PSPs) in Data & Computer Systems Engineering (DCSE) as well as in Modern Electronic Technologies (MET) at the University of Ioannina a few days before the online visit to the Programmes began on November 13th. EEAP had the chance to run a preliminary review of the documents submitted. During the visit, all the participants involved (MODIP, Teaching and Administrative staff, students, graduates, and social partners) were very prompt to provide us with all the information asked for. All the meetings were conducted online utilising Microsoft Teams from Monday November 13th to Wednesday November 15th in a very friendly and cooperative spirit. The meetings during the visit were scheduled as follows:

At the welcome meeting, the EEAP met with the Directors of the two PSP, the Head of the Department, MODIP, Steering Committees/ OMEA members to discuss the compliance of the PSP to the Quality Standards for Accreditation. At the same time, the department provided us with access to a video of the facilities and grounds.

The third day, November 15th, at 15:00 the Panel started a sequence of online meetings concerning the second PSP (MET) that lasted until 19:30. The teleconferences started with the teaching staff members of the PSP, followed by students, graduates, and ended with employers/social partners. The students were asked various questions about their academic life. They expressed their perspectives regarding the structure of the PSP Programme, the challenges they are facing and their experiences so far from the Programme and the University in general.

The next video conference was with some graduate students selected by the Programme. The focus of the EEAP was identifying the graduate student's integration into the industry and their opportunities for further studies. Most graduate participants had landed exceptional opportunities in pursuing Ph.D. studies at some prestigious institutions or held excellent positions in the software development industry. At the end of this day EAP had its last follow-up meeting with the OMEA and MODIP representatives during which additional comments and clarifications were brought up. The EEAP gave a short preliminary verbal report about their impressions and findings of the virtual visit. The EEAP thanked everyone for their participation, cooperation, and virtual hospitality.

III.   Postgraduate Study Programme Profile

The Postgraduate Study Programme (PSP) in MET was established in 1996 and is housed in the Department of Physics. The purpose of the Programme is to educate and train young professionals in cutting-edge technology in electronics and create well-prepared professionals ready to compete and excel in ever growing public and private sectors.

There are a total of seven (7) full time faculty members, two (2) Professor Emeritus and two Special Teaching Staff (EDIP), one (1) lab assistants, and two (2) professional administrators. The programme can be completed in 3 (full-time) academic semesters with a mandatory Thesis for a total of 90 ECTS. The Thesis is written during the third semester of studies, counts for 30 ECTS, and is defended in front of a committee of three members, one of which is the advisor. The PSP has an impressive number of peer-reviewed publications (approx. 564 in the last six years). The Programme is supported by an excellent number of classrooms, as well as adequately equipped labs with all the hardware and software the students of the Programme need to complete their studies. Meeting rooms and offices for graduate students of the PSP are also available.

Graduates of the program land excellent jobs in the industry (Telecom/Informatics 38%, Higher Education Institutions (27%), Education and Government/Public sector 23%). The graduates of the PSP can work in the public and/or private sectors in various professional positions in education, software development and as Electronics Engineers.

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 quality assurance policy of the Department incorporates necessary procedures to ensure a well-structured and organised curriculum, aligned with European and national standards, while achieving the intended learning outcomes and professional qualifications. The implementation of this policy involves utilising the

Quality Manual of the Internal Quality Assurance System of the University of Ioannina. While the PSP's Curriculum has not undergone an external evaluation/accreditation yet, the Department and the University have successfully gone through periodic external evaluation by committees of independent experts through certification procedures organised by the Hellenic Authority for Higher Education.

Concerning the implementation of the quality assurance policy, the EEAP has identified the following aspects related to the PSP Curriculum: The PSP fully aligns with the European and National Qualifications Framework for Higher Education. The course syllabi adhere to a standardised template that is compatible with the European Credit Transfer and Accumulation System (ECTS). The primary method to evaluate the quality of teaching is through student questionnaires for each module. The qualifications of faculty and teaching staff are ensured through open and merit-based recruitment, evaluation, and promotion in accordance with national law.
The Programme emphasises the need for promoting quality in research work while encouraging the pursuit of competitive grants, awards, and distinctions at the international level. The interconnection of teaching, research, and innovation is fostered through students' access to teaching and research labs and by promoting research-targeted diploma theses. External stakeholders and graduates are currently involved in the curriculum evaluation process utilizing an informal process.

II.   Analysis

The Internal Evaluation Committee (OMEA), in collaboration with the University's Quality Assurance Unit (MODIP), assumes the responsibility of overseeing the quality assurance processes within the PSP and evaluating the effectiveness of the entire academic provision. The General Assembly of the Department, in conjunction with the Chair, holds overall accountability for reviewing the PSP and ensuring its compliance with institutional Quality Assurance standards. To gather student feedback, PSP undergoes scrutiny through student evaluation questionnaires at the end of each semester for every course. However, it was observed during meetings with external stakeholders there is no formal role for them in the Quality Assessment Process for assessing the curriculum. On a positive note, students expressed that their qualitative feedback and comments in the questionnaires are taken seriously, and appropriate measures are implemented whenever possible. Additionally, faculty members are actively engaged in research and strive to integrate their research findings into their teaching practices

III.   Conclusions

Overall the programme team appears to have engaged very well with the institution and the quality assurance body of it. All procedures for developing, delivering the programme, monitoring the outcomes, and evaluating the results appear to be well in line with the institution's quality framework.

In broad terms, the EEAP is satisfied with the adopted quality assurance framework in the Institution. The Department seems well organized and managed and the key overarching mission to offer a high-quality UGP is largely fulfilled.

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

- The Department should periodically and systematically rationalise existing KPIs and form new ones as required to ensure they are well-defined and strategically prioritised.
- A well-documented procedure should be defined in reviewing/updating a course.

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

Based on the provided documents as well as on our discussions with faculty, staff, students, graduates, and stakeholders regarding the Postgraduate Program in Modern Electronic Technologies (PMS-MET) at the University of Ioannina's Department of Physics, our key findings are:

- Longstanding and Evolving Program: Established in 1996 and re-established in 2018, PMS-MET has a rich history aligned with the advancements in the digital revolution era, focusing on innovative electronic technologies.
- Comprehensive Curriculum with Research Focus: The program offers an extensive curriculum that requires 90 ECTS credits for graduation, emphasizing a balance between coursework and research, thereby equipping students with advanced skills and knowledge in modern electronic technologies.
- Interdisciplinary Approach with Industry Relevance: The interdisciplinary nature of the program covers diverse areas like telecommunications, informatics, biomedicine, and energy. This breadth seems to produce graduates who are versatile and well-prepared for various sectors in the job market.
- High Graduate Employment Rate: Graduates of the program have a high rate of employment in sectors such as technology, IT, telecommunications, academia, and research centres, underscoring the program's relevance and effectiveness in meeting industry needs.
- Integration of Teaching and Research: The program emphasises linking teaching with research activities. Faculty members engaged in cutting-edge research contribute to a rich learning environment, fostering students' skills in autonomous research and critical thinking.

These findings highlight PMS-MET''s commitment to delivering a high-quality education that is both academically rigorous and industry-relevant, preparing students for successful careers in the field of modern electronic technologies.

II.   Analysis

The Postgraduate Program in Modern Electronic Technologies (PMS-MET) at the University of Ioannina's Department of Physics demonstrates a significant alignment with evolving industry needs, as evidenced by its high graduate employment rate in diverse technology sectors. The program's re-establishment in 2018, decades after its initial inception in 1996, suggests a responsive adaptation to the rapidly changing landscape of electronic technologies. Its interdisciplinary curriculum, encompassing areas like telecommunications, informatics, biomedicine, and energy, not only broadens the scope of learning but also increases the employability of graduates by catering to a wide array of industries. The integration of research into the curriculum, with faculty members actively participating in global R&D, enhances the academic experience by exposing students to real-world challenges and cutting-edge developments. Furthermore, the program's emphasis on a balanced mix of coursework and research, requiring 90 ECTS credits, indicates a robust approach to education that combines theoretical knowledge with practical application. The small size of the program is perhaps the major impediment regarding its sustainability, but the committee does recognize that the program has an ongoing presence for over 25 years.

The program might benefit from more connections with the external stakeholders and by a better internship program to further strengthen connections with industrial and other partners.

III.   Conclusions

The Postgraduate Program in Modern Electronic Technologies at the University of Ioannina has a dynamic and responsive educational approach and does its best to bridge the gap between academic learning, research, and, to a certain extent, industry requirements. It has a comprehensive and interdisciplinary curriculum, coupled with a strong emphasis on research and active benchwork.

Panel Judgement

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

Panel Recommendations

Design areas that could be improved include:

- Connections with stakeholders (perhaps via an advisory committee board)
- More opportunities for internships and practical training for the student body

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

This PSP is clearly a student-centred learning course. It is researched and project-based and it has a small number of students annually. Students create personal relationships among them

and with the teachers, which guide them through the learning process in small groups in the laboratories, using hands- on learning. Students also have active participation in the course by providing academic support work (supervision to undergraduate exams, laboratory courses etc), which they value as it cultivates soft skills. Students are aware of the function of the supervisor professor, but they have strong mutual respect in the student-teacher relationship that they don't use it.

II.   Analysis

The PSP is mainly research based. The department provides laboratories, where students can work and learn with measurement instruments and tools for program development, applications, and adequate materials. Both students and graduates have valued the laboratories to be modern and with state-of-the-art equipment, which intrigues them to learn to use it. They also value the support and guidance of the professors, since there are small groups of students in each laboratory. One of the reasons that the PSP has a limited number of students annually is the fact that the structure of the learning is project and research- based and each student should have sufficient access to the laboratory equipment. Indeed, they have their bench space and offices and are able to deepen their work. Additionally, they are taught how to validate theoretical knowledge and research findings. They are seen as active partners in the learning process, taking under consideration the subjects taught.

Students are encouraged to develop individual skills as well as collaboration skills. During the graduates' interview it was underlined that the most valued skills they gained were problem solving, communication and collaboration, debugging, critical thinking etc. The small number of students, the structure of the Master and the teachers' support and guidance provided them with these skills that have proven useful to their careers. Students are informed about the assessment criteria and methods at the beginning of each course, while all the respective information about the courses is written in detail in the Study Programme. They are well informed on the PSP, the context and the learning procedures.

Students also appreciate the collaboration with other institutions and the extraversion. They value the support and efficiency of the academic and administrative staff.

III.   Conclusions

The PSP fully complies with the Principle. Some minor suggestions, as concluded from the interviews, could be to cultivate more the presentation skills of the students (it is a research-based and small group course, the presentations are done informally) and to maintain the timeframe of the master.

Panel Judgement

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

Panel Recommendations

While students do participate widely in paper publications, they could participate more in conferences, cultivating their presentation skills.

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

The Study Programme and Student Guide provide all necessary information to the students and all the data are available online, in the PSP's site. The PSP accepts a limited number of students annually, which are well informed on the structure and operation of the programme during a welcoming event. Furthermore, they remain updated during the studying years, due to the proximity of the student community and accessibility of the academic and administrative staff. The PSP does not have fees so there is no need for granting of scholarships. Students can apply for internships and can benefit from the ERASMUS + programme. ECTS is applied across the curriculum and there is a Code of Research Ethics available on the Student Guide. Students can apply for Practical training, although they do not usually use this option. The Master Thesis is obligatory, and the Thesis Handbook is available to the students, who also profit from the academic support of their supervisor professor.

II. Analysis

The PSP receives applications for graduate students twice per academic year. The application process, criteria, and selection procedure are described in detail in the Regulations and in the admission announcements. The candidates are accepted after a successful oral interview-examination conducted by a five-member examination committee, appointed by the Department Assembly. An orientation event is organized to welcome incoming students, where the main regulations of the program are presented, and students are informed about the structure and organization of the program, the curriculum, offered courses, as well as their

rights and obligations as graduate students of the department. Additionally, during the event, students have the opportunity to ask questions about the program's operation.

All the necessary data and documents are available to the students and are also available online. Students are aware of the function of the counsel professor; however, they do not use it since they have proven collaboration with their professors – especially the supervisor- and their fellow students and any issue can be discussed directly.

Students do not pay fees, they contribute to the programme with supporting work in the labs, which they appreciate as part of the learning process.

Students are aware of the ERASMUS + programme, which is available to them, however, they do not seem to use this option: they are taking full advantage of the PSP and the research conducted in the premises and prefer to complete their studies in UoI and continue with PhD or work. Similarly, they do not seem to profit from the practical training function; however, the stakeholders which participated to the interview have declared to be very satisfied with the graduates and are willing to further support and strengthen the practical training. The stakeholders have valued the graduates to have obtained accurate knowledge as well as soft skills and effective competences during their studies in this PSP. Students are satisfied by the offered networking with other institutions and the perspectives they have after the competition of the studies. Furthermore, they value the obtained relationships and cultivated culture during and after their studies in the PSP with the fellow students and teachers.

III.   Conclusions

Students, graduates, and stakeholders are satisfied by the progression and recognition of the PSP. Although the students do not seem to profit from practical training or ERAMSUS, they benefit from the research-based programme, the participation in international projects, the proximity of the academic community, the publications, the networking etc. They gain the necessary knowledge, competence, and skills to continue to a successful academic or other career.

Panel Judgement

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

Panel Recommendations

Some stakeholders are interested in engaging the students in the practical training during their studies. This opportunity could be further organised and structured with the collaboration of the administration of the PSP and the HR of the interested stakeholders.

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 Modern Electronic Technologies program is offered by the Department of Physics jointly with the Department of Computer Science and Engineering. The offered courses are taught primarily by the faculty of the two Departments. The hiring (or the promotion) of any faculty member in Greek universities is governed by national laws. The Departments attract high calibre candidates for any available faculty vacancy. The panel was told that around 2-3 faculty members take advantage of sabbatical leaves; however, this does not appear to be mentioned in any official documentation. The faculty also takes advantage of Erasmus+ mobility. The workload of the faculty is between around 8-13 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 number of students enrolled in the program at any time is rather low (between around 5-7), so feedback can be received during the direct

communication between the teaching staff and the students. The specialisations and research interests of the faculty aligns well with the theme, scope, and offered courses of the program in question.

II. Analysis

The instructors have the required qualifications, and the offered program aligns well with the interests of the department. There is financial support for the faculty via Erasmus+ for mobility.

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
Further 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 PSP is very well equipped with the equated laboratories and IT infrastructures. The limited number of students secures access to all the necessary facilities.

    II.   Analysis

The PSP profits from the participation in international funded research projects which allow to update the equipment and secure the provision of the necessary materials. Furthermore, the Prefecture of Ioannina provides a regular fund for the support of the function of the PSP, ensuring the smooth operation of the student support services. Professors are participating in state-of-the-art projects and pioneering research activities which enables them to have

adequate equipment and IT infrastructures. Some students have chosen this PSP for this reason. Stakeholders are valuing the knowledge and skills obtained in the laboratories and through the conducted research. A large number of scientific publications is obtained during the years of the implementation of the PSP, underlying the state-of-the-art outcomes.

III. Conclusions

The PSP provides highly satisfactory infrastructures and services for learning. In addition to the state- of- the- art equipment, the limited number of students facilitates even more their access to the facilities and reinforces their benefiting from the available resources, laboratories, networking etc.

Panel Judgement

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

Panel Recommendations
None.

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

Based on the documents provided to the committee as well as on our discussions with instructors, graduates of the program, and stakeholders the program seems to have a good plan in place to address the management and monitoring of data collected by the program. Given the relatively small size of the program, data collection is less important compared to data collection for larger-scale programs.

    II.   Analysis

Several points were highlighted in our analysis:

- Data Collection and Analysis: The program collects, analyses, and uses information for effective management. This involves gathering quality data about the program, including student and teaching staff details, funding, and research activities. The data is then registered in the Integrated National Quality Information System.

- Data Submission and Reporting: Annual data submission to the OPESP of HAHE is done after verifying completeness and reliability. Annual reports and quality indicators are issued and sent to relevant departments.
- GDPR Compliance: The University of Ioannina has a data protection regulation, and postgraduate students are informed about personal data collection and processing.
- Information Gathering Tools: Various data are collected for internal evaluation, including student and staff quality data, course performance, financial data, and opinions from students and administrative officers.
- Analysis: The program uses quantitative-statistical analysis and qualitative information analysis. It emphasises the use of external evaluation reports, live discussions, and continuous feedback for strategic decision-making and improvement.
- Improvement: Based on annual reports, the "General Assembly" leverages findings in the internal evaluation process of the program, leading to decisions for improvements.

III.   Conclusions

The program seems to have a comprehensive framework for data management and analysis and recognizes the importance of both quantitative and qualitative data in driving strategic improvements in postgraduate studies. Given the small size of the program (3-4 students/year) data analysis might result in statistically insignificant findings.

Panel Judgement

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

Panel Recommendations

As discussed in the conclusions, given the small size of the program, qualitative assessments are more important than quantitative ones and decisions should be mostly based on the instructors' experiences and feedback.

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

Based on the information provided by the department and our discussion with faculty, staff, students, graduates, and stakeholders, the program has a reasonable approach for communication and information dissemination. It follows a dual-channel approach, combining modern electronic media like websites, social networking, and e-course systems with traditional methods such as printed notices. The program's website serves as a central hub, offering extensive information on academic programs, faculty profiles, regulations, and department activities. This is complemented by the main Department of Physics website, which provides additional resources like academic calendars, seminar schedules, and research projects. Emphasizing transparency and accessibility, the document underscores the importance of regular updates, clarity in information presentation, and feedback mechanisms to ensure effective communication with students, faculty, and the broader academic community.

II. Analysis

The department emphasises clear, objective presentation of information, coupled with regular updates and feedback mechanisms, indicates a commitment to transparency and responsiveness. This approach supports academic and administrative processes but also enhances the overall experience of the academic community, fostering a well-informed and connected environment. Most of the information is provided in Greek but given the small size of the program and the fact that all students are native Greek speakers, this does not seem to be an impediment.

III. Conclusions

The document effectively illustrates the program's commitment to a hybrid communication strategy, blending digital and traditional approaches.

Panel Judgement

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

Panel Recommendations

The program might want to consider increasing its online footprint, by providing more material in English and by using more online e-class type resources. Again, given the small size of the program, this is a judgement call by the instructor or each class. Another important topic for the program to consider is the addition of more details regarding the department's policies on bullying, harassment in any shape and form, and discrimination. Students and graduates seemed to be mostly unaware of such policies and relevant resources.

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
There is a well-established procedure in place for the monitoring and periodic review of the programme. There is a clear distribution of responsibilities and roles of all parties involved in this process. The monitoring process involves all the appropriate stakeholders, namely the Internal Evaluation Team (OMEA), the Departmental academic and administrative staff, the current students, as well as relevant external parties such as alumni. This process is taking place annually, covers all aspects of such an evaluation exercise (programme content, workload, student assessment, etc.) and its findings are reported to the University's Quality Assurance Unit (MODIP) for final approval. The involvement of the students by means of filling questionnaires is documented but, in general, the response is rather low. However, as the number of students in the programme is very small (5-7), it is expected that feedback is also received through a face-to-face interaction between the academic staff and the students. Feedback from other stakeholders (such as the labour market) needs to improve.

II. Analysis

Overall, an effective mechanism is in place for internal feedback that is used for annual internal reviews and audits. The level of student participation via the questionnaires should be improved as well as feedback from other stakeholders.

III. Conclusions

Overall, an effective mechanism with minor improvements.

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

Increase the level of participation of students as well as external stakeholders as a feedback mechanism in the monitoring and periodic internal evaluation process.

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

The panel found that the curriculum was designed and established in accordance with the relevant policies of the organisation in cooperation with the internal quality assurance system "MODIP". The program also strives to demonstrate the continuous improvement of educational methods, as well as the high quality and effectiveness of services, in line with international practices and HAHE principles and guidelines. Faculty and staff are aware of the importance of external review and the benefits it brings to the continuous improvement of the programme.

II. Analysis

The department has established an Internal Review Committee (OMEA) made up of DEP/Student members and MODIP staff. Its function is to collect, analyse and annually present all data related to the university program. As part of these policies, the Institutional Quality Assurance Unit (MODIP) oversees the internal and external evaluation of the University's academic departments and their programs. The panel is pleased with the reported periodic review of compliance with the department's commitment to quality assurance policies and standards, as required by the HAHE Code of Practice.

Throughout the evaluation process, the panel found that the faculty was fully aware of the importance of external assessment. At the same time, all the academic unit's stakeholders appear to be interested in participating in future programme assessment activities. In this respect, the department must develop and strengthen a detailed action plan and a concrete roadmap to implement the recommendations made in this report.

As this is the first evaluation of the programme, principle 10 cannot be properly and fully evaluated. Considering the documentation provided and submitted by the department and

the understandings obtained from the current accreditation, the panel expects that the department will be able to continue successfully conducting new external audits in the future.

III. Conclusions

Many aspects of the department's activities and functions confirm very good practices. The department's commitment to the spirit and processes of quality assurance is evident in all principles and aspects. Passionate faculty and staff self-assess the program and its courses and demonstrate outstanding teamwork. Both groups work very hard to support the program and the students, both academically and personally. The panel rates the principle as "fully compliant", based on the above considerations.

Panel Judgement

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

Panel Recommendations

- The Department is encouraged to continue its internal quality assurance procedures for annual internal assessment and evaluation of academic programs to achieve objectives through monitoring and evaluation for continuous improvement.
- Develop effective ways to increase student engagement in completing questionnaires to ensure consistent statistical results.

PART C: CONCLUSIONS

I. Features of Good Practice

- Support for mobility of teaching staff
- Active involvement of students in research activities
- Aligning of the program's theme and aims with the faculty's research profile
- The PSP is a student-centred learning course and provides highly satisfactory infrastructures and services for learning
- It promotes mutual respect in the student-teacher relationship.

II. Areas of Weakness

- Connections with stakeholders could be improved (perhaps via an advisory committee board).
- The department could offer more opportunities for internships and practical training for the student body.
- The program might want to consider increasing its online footprint, by providing more material in English.
- Another important topic for the program to consider is the addition of more details regarding the department's policies on bullying, harassment in any shape and form, and discrimination. Students and graduates seemed to be mostly unaware of such policies and relevant resources.

III. Recommendations for Follow-up Actions

- The PSP could create stronger links with the stakeholders during the studies. Stakeholders are satisfied with the graduates and could offer practical training.
- The Department should periodically and systematically rationalise existing KPIs and form new ones as required to ensure they are well-defined and strategically prioritised.
- A well-documented procedure should be defined in reviewing/updating a course.
- Connections with stakeholders (perhaps via an advisory committee board)
- More opportunities for internships and practical training for the student body
- While students do participate widely in paper publications, they could participate more in conferences, cultivating their presentation skills.
- Some stakeholders are interested in engaging the students in the practical training during their studies. This opportunity could be further organised and structured with the collaboration of the administration of the PSP and the HR of the interested stakeholders.

- Further increase the number of faculty taking advantage of sabbatical leaves
- As discussed in the conclusions, given the small size of the program, qualitative assessments are more important than quantitative ones and decisions should be mostly based on the instructors' experiences and feedback.
- The program might want to consider increasing its online footprint, by providing more material in English and by using more online e-class type resources.
- The program to consider is the addition of more details regarding the department's policies on bullying, harassment in any shape and form, and discrimination. Students and graduates seemed to be mostly unaware of such policies and relevant resources.
- Increase the level of participation of students as well as external stakeholders as a feedback mechanism in the monitoring and periodic internal evaluation process.
- The Department is encouraged to continue its internal quality assurance procedures for annual internal assessment and evaluation of academic programs to achieve objectives through monitoring and evaluation for continuous improvement.
- Develop effective ways to increase student engagement in completing questionnaires to ensure consistent statistical results.

IV.   Summary & Overall Assessment

The Principles where full compliance has been achieved are**: 1, 2, 3, 4, 5, 6, 7, and 10.**

The Principles where substantial compliance has been achieved are: **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

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