



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
HELLENIC REPUBLIC



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## **Accreditation Report for the Postgraduate Study Programme of:**

**Chemistry Education, Information and Communication  
Technology and Education for Sustainable Development**

**Department: Chemistry  
Institution: National and Kapodistrian University of  
Athens**

**Date: 24 November 2023**



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



Report of the Panel appointed by the HAHE to undertake the review of the Postgraduate Study Programme of **Chemistry Education, Information and Communication Technology and Education for Sustainable Development (ex. Education in Chemistry - Novel Teaching Technologies)** 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 of Chemistry Education, Information and Communication Technology and Education for Sustainable Development (ex. Education in Chemistry - Novel Teaching Technologies) 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. PAVLOSTATHIS SPYROS (Chair)**

School of Civil and Environmental Engineering, Georgia Institute of Technology

**2. SOULTANAS PANAGIOTIS**

University of Nottingham

**3. XANTHEAS SOTIRIS**

Pacific Northwest National Laboratory U.S. Department of Energy

**4. TEKOS FOTIOS**

University of Thessaly

## **II. Review Procedure and Documentation**

In preparation for the review and assessment of the PSP, the External Evaluation & Accreditation Panel (EEA Panel) reviewed multitude of material provided by the Hellenic Authority of Higher Education (HAHE), which included background information and guidance on the review and accreditation process, detailed material and data related to the programme under evaluation, such as the programme accreditation proposal and associated appendices. The programme review was conducted via teleconference, organized and coordinated by HAHE and the National and Kapodistrian University of Athens (NKUA). The schedule and agenda of the review were as stated below.

### **Monday, 09/10/2023:**

- a. Preliminary private meeting of the EEA Panel. Discussion of the programme under review; assignment of writing parts of the accreditation report draft to the members of the EEAP.
- b. Welcome meeting and short overview of the two postgraduate study programmes (PSP) with the Head of the Department of Biology Prof. A. Parmakelis, the Head of the Department of Chemistry Prof. E. Lianidou, the Director of the PSP Didactics of Biology (PSP1) Prof. I. Trougakos, the Director of the PSP Chemistry Education, Information and Communication Technology and Education for Sustainable Development (PSP2) Prof. K. Methenitis, the Secretary of the Quality Assurance Unit (MODIP) of the NKUA Mr. K. Bourletidis, MODIP member Mr. Th. Chajitheodorou, member of the PSP1 Steering Committee Prof. S. Genitsaris, members of the PSP2 Steering Committee Profs. Th. Mavromoustakos and M. Sigalas, and PSP2 OMEA member Prof. P. Paraskevopoulou: presentations and discussion of PSP1 and PSP2 history, academic profile, current status and future developments, strengths and areas of concern, degree compliance to the quality standards for accreditation, internal procedures, course examinations, review of students' progress, course/instructor evaluations, etc.
- c. Meeting with PSP1 faculty Profs. I. Trougakos and S. Genitsaris and PSP2 faculty Profs. E. Pavlatou, K. Methenitis, Dr. K. Salta, teaching laboratory staff, and Ms. G. Satratzemi, Secretary of the Department of Chemistry: Discussion of facilities and learning resources.
- d. Private debriefing meeting (EEAP members only).

### **Tuesday, 10/10/2023:**

Draft report writing.

### **Wednesday,**

### **11/10/2023:**

- a. Meeting and discussion with PSP2 Chemistry Education, Information and Communication Technology and Education for Sustainable Development faculty Profs. C. Tzougraki, M. Scoullou, E. Pavlatou, K. Methenitis, K. Tsoi, A. Tsioukli; postdoctoral fellow Dr. V. Seifert; and teaching laboratory staff Drs. K. Salta and K. Paschalidou.
- b. Meeting and discussion with six (6) current PSP2 students.
- c. Meeting and discussion with nine (9) PSP2 recent graduates.
- d. Meeting and discussion with employers and PSP2 social partners: I. Stavrakis, private school

Ellinogermaniki Agogi; E. Riza-Skifa, tutorial school Spoudi; C. Mouratidis, director of Anavrita Model School; G. Kyriazi, member of Steering Committee of Athens Science Festival; E. Patsilina, Educator at Society for the Promotion of Education and Learning; A. Alamei, NPO Mediterranean Information Office for the Environment, Culture and Sustainable Development (MIO-ECSDE); A. Andriopoulou, Hellenic Centre for Marine Research.

- e. Private debriefing meeting (EEA Panel members only): discussion of the outcomes and findings of the virtual visit; preparation of oral report.
- f. Closure meeting with the Head of the Department of Chemistry, PSP2 Director and faculty, MODIP and OMEA staff and members: informal, oral presentation of the EEAP key findings and clarifications.

**Thursday 12/10/2023 to Saturday 21/10/2023:**

Draft report writing. EEAP virtual meetings. Review and finalization of draft report.

Throughout the review and evaluation process, the EEA Panel was in close communication with the PSP2 administration and University MODIP, which were very accommodating in providing additional information requested by the EEAP. The EEA Panel found that the PSP2 administration and MODIP representatives, as well as the faculty, staff, current students, recent graduates interviewed were eager and helpful in our discussions, providing valuable additional information.

### III. Postgraduate Study Programme Profile

The postgraduate study programme (PSP) Didactics of Chemistry, Information and Communication Technology and Education for Sustainable Development is interdepartmental and interinstitutional organized and offered by the Departments of Chemistry, Pedagogy & Secondary Education, History & Philosophy of Science of the National and Kapodistrian University of Athens, the Department of Chemistry of the Aristotle University of Thessaloniki, and the School of Chemical Engineering of the National Technical University of Athens. The programme was established in 1998 (Government Gazette 1063/12-10-1998), was reformed in 2018 and operates with new approval (Government Gazette 3035/27-07-2018 and 4945/22-08-23). The scientific methodology followed, the social orientation, the provision of Pedagogical and Teaching Proficiency, along with tuition- free study make the program unique in Greece.

The objectives of the PSP are the modernization of Chemistry education of all levels, post-graduate and further education of secondary education teaching staff in the didactics of Chemistry, which transfers the scientific knowledge of Chemistry to the society, as well as upgrading the role of Chemistry in relation to the handling of contemporary social problems such as climate change, as well as to modern daily life with the ultimate goal of its contribution to economic and social development. The PSP has three options/specializations:

- Didactics of Chemistry
- New Educational Technologies
- Education for Sustainable Development

Teaching in the PSP is realized by faculty from the above-mentioned departments, as well as external collaborators from various research Institutions, Universities, laboratories, and education advisors. In addition, special technical staff and administrative staff assist the PSP. The programme has set at 30 the maximum number of admitted students per academic year, equally distributed among the three specializations. In the academic year 2022-2023, the number of newly admitted students was 17, the total number of registered students was 48, while the number of graduates was 17. The total number of PSP graduates since its initial establishment in 1998 is 435. Most of the postgraduate students the EEA Panel interviewed stated that the PSP Didactics of Chemistry, Information and Communication Technology and Education for Sustainable Development of the National and Kapodistrian University of Athens was among their first choice based on the curriculum, methodologies used, tuition-free study, and reputation.

The PSP is a minimum of three (3) academic semesters study resulting in a Diploma of Postgraduate Studies. The maximum time allowed to complete the studies is set at six (6) academic semesters. To graduate, the student must have successfully completed a total of 90 European Credit Transfer System (ECTS) credits, distributed as follows: 60 ECTS for coursework, 5 ECTS for practical training/teaching practice, and 25 ECTS for the preparation and successful completion of a postgraduate thesis. Teaching Practice involves attending lectures in primary or secondary education schools, as well as planning and implementation of lessons, followed by analysis, discussion, and evaluation. The EEA Panel found that the number of courses offered

cover advanced as well as new topics and technologies in Didactics of Chemistry, Information and Communication Technology and Education for Sustainable Development.

The PSP prepares graduates for careers in both the private and public sector of the economy, mostly in secondary education as the graduates also obtain a certificate of Pedagogical and Teaching Proficiency. In addition, a number of graduates continue with doctoral studies or staff research and science education organizations as well as formal education organized by environmental agencies, research institutes, etc. There are strong links to the society, which is key priority of the PSP and its supporting departments.

The Department of Chemistry participates in other interdepartmental and interinstitutional postgraduate programmes and supports doctoral studies.



## 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 Institution has developed and implemented its Quality Assurance Policy as part of its broader strategy ([https://en.uoa.gr/about\\_us/mission\\_policies\\_and\\_publications/quality\\_assurance\\_policy/](https://en.uoa.gr/about_us/mission_policies_and_publications/quality_assurance_policy/)). The Department of Chemistry, in collaboration with the Quality Assurance Unit (MODIP) of the University and Department Internal Evaluation Group

(OMEA), has harmonized the quality policy of the PSP Didactics of Chemistry, Information and Communication Technology and Education for Sustainable Development with that of the University, accompanied by annual quality assurance targets for the continuous development and improvement of the PSP, as well as that of the academic unit and other educational programmes. The Quality Assurance Policy of the PSP, which is publicly accessible from the PSP website ([https://dixinet-eaa.chem.uoa.gr/dpms/dilos\\_i\\_politikis\\_poiotitas/](https://dixinet-eaa.chem.uoa.gr/dpms/dilos_i_politikis_poiotitas/)), includes adequate reference to the delivery of the new PSP, including commitments to satisfy requirements and strive for continuous improvement. In addition to OMEA, a departmental Coordinating/Steering Committee further aids in the overall quality assurance of the PSP and the Department.

The processes and procedures used for the monitoring and continuous improvement of the quality of the PSP are as follows: a) The strict implementation of the PSP Policy for Quality Assurance; b) The optimal disposition and management of the PSP resources; c) The establishment of Quality Assurance objectives of the PSP on an annual basis; d) The periodic internal evaluation and monitoring of the PSP on an annual basis; e) The collection of Quality Data, quantitation, analysis and improvement of the PSP; f) The disclosure and publication of all information related to the PSP made publicly accessible; g) The periodic external evaluation and certification following established procedures by HAHE.

## **II. Analysis**

The Quality Assurance Policy is sufficiently communicated to all parties involved. The PSP has set specific, measurable, achievable, relevant and timely goals regarding the new postgraduate programme. According to Quality Targets, the PSP is at a satisfactory point in terms of achieving set targets. Based on the data provided to the EEA Panel, the targets are also paired with suitable key performance indicators (KPIs). Goals are monitored, updated, and communicated, according to the Quality Assurance Policy implemented by the Institution and the PSP. The quality assurance system is reviewed on an annual basis by the OMEA, and results communicated to the University MODIP, which issues an annual report.

The structure and organization of the PSP is well thought out and in line with the overall goal of the programme. The advanced material covered along with the study of new technologies in the area of Didactics of Chemistry, Information and Communication Technology and Education for Sustainable Development result in learning outcomes and qualifications of the postgraduate students consistent with Level 7 of the European and National Qualifications Framework for Higher Education. It is noteworthy that a number of postgraduate students of the programme have continued doctoral studies.

## **III. Conclusions**

The Department has established a Quality Assurance Policy that is appropriate for the PSP. It includes a commitment for its implementation and continuous improvement. The metrics that have been established by the PSP and the institution are adequate in tracking and documenting the quality of the programme. The findings are supported by the documents provided to the EEA Panel by the PSP and Institution, the interviews with the teaching, support staff and

alumni of the programme. Overall it is a well-organized PSP focusing on the quality of the offered knowledge and skills.

### Panel Judgement

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

### Panel Recommendations

To enhance adherence to Principle 1, the EEA Panel recommends the following:

- Major improvements made as a result of course/instructor evaluations should be documented, communicated to all involved, and published on the PSP website.
- Interactions with alumni upon their graduation should be exploited as a potential means of informing the decision-making process regarding future directions of the programme.
- Establishment of a formal External Advisory Board should be considered, which will guide the continuous review, revision, and further development of the curriculum.

## **PRINCIPLE 2: DESIGN AND APPROVAL OF POSTGRADUATE STUDY PROGRAMMES**

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

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

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

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

*In addition, the design of PSP must consider:*

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

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

### **Documentation**

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

## **Study Programme Compliance**

### **I. Findings**

There was unanimous consensus among the members of the EEA Panel that the study programme comprising of the courses offered in the PSP is detailed, informative and appropriate. The courses offered in the program are very well described and the expectations of the students are clearly delineated. The student effort required to complete the various courses is realistic and adequate to acquire knowledge in the specific domain. This is very important since the PSP aims to instil additional knowledge about didactics to students with Chemistry backgrounds but also introduce chemical principles to students with pedagogical backgrounds. There is a 7-member program committee with 4 internal (Chemistry) and 3 external members. There is a requirement to complete 52 hours at a secondary education school with at least 2 hours of actual teaching practice and the rest attending. The nature of the PSP is such that offers a direct linking between teaching and research demonstrated by the participation of the students in Secondary Education schools. The external stakeholders offer valuable experience in the labour market since they constitute some of the top secondary schools in the region. It was not immediately clear whether there was a process in place for the periodic revision of the curriculum and how often the material covered (e.g., books) are upgraded; however, the committee feels that these are currently adequate.

### **II. Analysis**

The above findings were supported by the documentation provided by the Institution and the interviews with the teaching staff, current and alumni students as well as the external stakeholders. Their enthusiasm about the PSP attested to its effectiveness and compliance with accepted standards. Students have a clear understanding of the thematic units covered, their responsibilities and level of effort required, an excellent interaction with the labour market and a clear picture of the goals and skills offered in the PSP.

### **III. Conclusions**

The program complies with accepted standards and practices at other Institutions in this specific area of study. The expectations of the students are clearly articulated making the Student Guide appropriate. The thematic areas offered by the programme are adequate to prepare the students for the real world via their interaction and practice in some of the top secondary education schools in the region.

## Panel Judgement

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

## Panel Recommendations

To enhance adherence to Principle 2, the EEA Panel recommends the following:

- Consider a nominal fee structure for the first year with the top performers receiving a waiver of the fees for the second year.
- Consider the possibility to increase the actual practice teaching hours to secondary schools from 2 to up to 6 (total hours required for the students to interact with secondary education students and teachers still remains at 52).
- Establish a procedure to provide feedback from the high school students to the teaching evaluation of the PSP students.
- Consider inviting high school students to the University's Chemistry laboratories through summer internships.

### **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**

As part of the effort to strengthen the student-centred educational process, interactive educational material in the program courses is well-established in the PSP Chemistry Education, Information and Communication Technology and Education for Sustainable Development. This need exists due to the diversity of the

students of the program. More specifically, the program enrolls students that can be categorized in two groups. On one side are professional teachers who have limited time and young students who have just completed their undergraduate studies. The main differences of these two groups lie in the existence of limited free time of the professional teachers and in the difficulty of these students to meet the increased demands of the postgraduate program due to the long passing time since their last contact with undergraduate education.

Furthermore, the program uses the Academic Advisor Regulation. This regulation determines the implementation details of the Institution of the Academic Advisor for Postgraduate Studies in the context of strengthening the student-centred educational process, aiming at the success of graduate students in their studies and professional careers and to assist the students based on their personal needs. The Academic Advisor highlights in a student-centred way the student's sense of autonomy while assuring collaboration of each student with the teaching staff in order to overcome any obstacle. Opportunities are also given to students who are less extroverted and find it difficult to speak out on their own with distance exercises and presentations.

The program aims to enrich the students' skills by adjusting the modes of delivery and pedagogical methods. Students have access to a reading room and a library with rich material related to the subject of the post-graduate program and its courses. Nevertheless, in postgraduate courses more weight is given to the search and study of international literature and not the exclusive use of notes and books. The teaching staff (36 members) consists of scientists of recognized prestige, who have specialized knowledge or relevant experience in the subject of the post-graduate program allowing them to adapt teaching methods and developing their own skills in this field.

The assessment process applies equally and is in-time communicated to all students. The process is adhered to the established regulations and protocols. Students are well-informed through announcements on the website and using the online class platform and through adequate communication with the Academic Advisor assuring collaboration and appreciation between each individual student and teaching staff.

## **II. Analysis**

The PSP Chemistry Education, Information and Communication Technology and Education for Sustainable Development meets the criteria for professional development of the students in both the private and public sectors. The teaching staff and their methods are evaluated by the students with personal questionnaires contributing to their fair evaluation. The Academic Advisor regulation represents a unique student-centred approach of the postgraduate program that can successfully lead to the implementation of teaching goals.

## **III. Conclusions**

The PSP Chemistry Education, Information and Communication Technology and Education for Sustainable Development complies with transparency and effectiveness through its predefined rules and regulation. Further improvement based on students' questionnaires can be implemented by categorizing the students based on their academic background.



### Panel Judgement

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

### Panel Recommendations

To enhance adherence to Principle 3, the Panel recommends the following:

- More than two hours of teaching practice could be integrated into the study program on a voluntary basis.
- Students could do practical work/teaching practice not only in Chemistry lessons but also in other chemistry-related lessons (e.g., agricultural science).

## **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 students' admission procedure is conducted based on the Regulation of Studies, Internship, Mobility and Work Preparation which are available in the website of the PSP Chemistry Education, Information and Communication Technology and Education for Sustainable Development. The process is uniform and transparent providing equal opportunities to participants based on specific criteria. Based on the overall criteria, the admissions selection committee prepares the students' ratingscale.

Based on the Regulation of Postgraduate and PhD Studies of the University and in accordance with what is defined in the regulations of the Program, the PSP may grant a) excellence scholarships and awards, based on the student's performance in studies and the individual or family financial situation, with full or partial exemption from tuition fees, and b) scholarships for the provision of research, scientific, administrative, technical and other supporting work of the Department's activities.

The procedures and terms for the drafting of assignments and the thesis, the procedure of award and recognition of degrees, the conditions for progression and the monitoring of the progress and obligations of the study, are all satisfactory applied based on the publicly available Regulation of Studies, Internship, Mobility and Work Preparation of the program. There are also distance measures which contribute to the evaluation of the progress, as well as to the self-evaluation of the students. These steps include the presentation of works (individual and group) and the presentation of the lessons using the platform of NKUA e-classrooms. The duration of studies is well controlled, and students can proceed with a reasonable request for suspension of studies for one year. The terms and conditions for enhancing students' mobility are mainly based on

presentations of the post-graduate program and its connection with the educational community through participation in scientific events, visits to schools, presentations to students, and participation in conferences. The general terms of mobility of NKUA students apply to the post-graduate program, highlighting the participation in the European academic consortium AEI CIVIS - A European Civic University.

**II. Analysis**

All procedures related to admission, progression, recognition, certification, the rights, and obligations of the students in the post-graduate program, are all well described and documented. Procedures that reflect transparency, organization, and collaboration, create an effective environment for assuring academic culture.

**III. Conclusions**

The PSP Chemistry Education, Information and Communication Technology and Education for Sustainable Development provides detailed regulations for establishing an adequate environment for a fair and competitive participation.

**Panel Judgement**

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

**Panel Recommendations**

To enhance adherence to Principle 4, the Panel recommends the following:

Further improvement of students' training by increasing the number of seminars offered on writing research articles and theses.

## **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 teachingstaff 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 PSP teaching staff is pooled from the Departments of Chemistry, Pedagogy & Secondary Education, History & Philosophy of Science of the National and Kapodistrian University of Athens, the Department of Chemistry of the Aristotle University of Thessaloniki, and the School of Chemical Engineering of the National Technical University of Athens. There is also a Marie Curie Fellow in the programme.

The applicable provisions of the laws are applied for both the selection and the professional development of the faculty members. In addition to their teaching duties in the PSP, the teaching staff also participate in the other activities of the Departments involved and the PSP.

There is an internal process for the evaluation of the PSP to determine the level of quality of the educational processes, the organization of thematic units, the educational material as well as the administrative infrastructure. The students participate in the course/instructor evaluation process by filling out questionnaires.

The PSP teaching staff are doing their best given the lack of support, i.e., through a fee structure that can provide a better technological support, equipment, and reagents.

**II. Analysis**

The findings were supported by the online meetings with the teaching staff, the current students and alumni as well as the external stakeholders (teachers and administrators at the secondary education schools where the students are required to fulfil an attendance record of 52 hours and practice teach for 2 hours). Overall, the PSP is unique in its category attracting students with a wide range of professional interests and careers. There exists very good communication between the teaching staff and the students.

**III. Conclusions**

The PSP has excellent teaching staff, a good networking with top secondary education schools and very successful graduates. All interviewed stakeholders (teaching staff, students, alumni, secondary education teachers and administrators) provided overwhelming support for the PSP.

**Panel Judgement**

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

**Panel Recommendations**

To enhance adherence to Principle 5, the EEA Panel recommends the following:  
 Since there are three directions in the PSP, consider the possibility to assign students to different domains for practice teaching in the secondary schools.

## **PRINCIPLE 6: LEARNING RESOURCES AND STUDENT SUPPORT**

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

*Institutions and their academic units must have sufficient resources and means, on a planned and long-term basis, to support learning and academic activity in general, so as to offer PSP students the best possible level of studies. The above means include facilities such as the necessary general and more specialised libraries and possibilities for access to electronic databases, study rooms, educational and scientific equipment, IT and communication services, support and counselling services.*

*When allocating the available resources, the needs of all students must be taken into consideration (e.g. whether they are full-time or part-time students, employed students, students with disabilities), in addition to the shift towards student-centred learning and the adoption of flexible modes of learning and teaching. Support activities and facilities may be organised in various ways, depending on the institutional context. However, the internal quality assurance proves -on the one hand- the quantity and quality of the available facilities and services, and -on the other hand- that students are aware of all available services.*

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

### **Documentation**

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

### **Study Programme Compliance**

#### **I. Findings**

The post-graduate program and NKUA make available to the students the necessary facilities to ensure an appropriate teaching and learning environment. Specifically, the following infrastructure buildings are available specifically for the implementation of the post-graduate program:

- Multimedia room and library with the post-graduate study related books. Furthermore, the students have access to the library of the NKUA which is housed in the building of the Department of Mathematics, equipped with workbenches and specialized tools for supporting individuals with disabilities.
- Laboratory of chemistry
- University gymnasium, swimming pool, and open fields.

Furthermore, a number of services are provided to the students of the program which are functional and readily available. Detailed information on these services can be found easily by the students on the websites of the post-graduate program

and the Institution. The services provided are:

- e-class, a fully integrated electronic learning management system which supports the up-to-date training of NKUA students without limitations and restrictions.
- Electronic Secretariat Offices
- Library and information centre
- Service of “Multimedia Content Hosting and Search”
- Academic advisor
- Academic ID
- Access to counselling services in the areas of professional orientation and counter-psychosocial problems, through the specialized units and structures of the Institute
- Student advocate service for examining students’ complaints
- Foreign language teaching school
- Support for Students with Disabilities

The post-graduate program operates without tuition fees. The operating cost of the programme is covered by other sources of NKUA such as competitive national or international development and/or research grants.

## **II. Analysis**

Based on the findings obtained from student, graduate, and faculty interviews, written documentation provided by MODIP, and the PSP website, it is evident that the post-graduate program provides all the necessary support services and facilities for the successful implementation of the program. Libraries, access to electronic databases, study rooms, educational and scientific equipment, IT and communication services, support and counselling services, are all available to the PSP students.

## **III. Conclusions**

Learning resources and student support are successfully implemented in the PSP Chemistry Education, Information and Communication Technology and Education for Sustainable Development. Based on students’ questionnaires, the laboratory equipment needs to be renewed with modern units.

## Panel Judgement

<b>Principle 6: Learning resources and student support</b>	
Fully compliant	<b>X</b>
Substantially compliant	
Partially compliant	
Non-compliant	

## Panel Recommendations

To enhance adherence to Principle 6, the Panel recommends the following:  
Upgrade and renewal of laboratory infrastructure (software, equipment, etc.) is needed.



## **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**

The PSP has established a well-documented procedure for the collection of data concerning the programme's activities. Among those are the status of the students, their advancement through the program and the prospective employment opportunities. The data are collected using several information systems for electronic registration and evaluation which report the collection and subsequent analysis of the data. The course/instructor evaluation is embraced by both the faculty and the students.

Although there was a clear intention to establish an alumni network, this has not been materialized yet. This is important to further strengthen the ties among students, faculty and graduates, and to receive feedback for the programme.

**II. Analysis**

The current students and alumni of the programme have a high respect and enthusiasm about the education and skills they are receiving / have received. The alumni stressed how the PSP helped them with their professional careers. The PSP does not currently have an external advisory board. The importance of the establishment of such a board cannot be overemphasized.

**III. Conclusions**

The continuous improvement of the PSP depends strongly on its ability to adopt new subjects and methods that are relevant to its theme. A closer interaction with the alumni and an external advisory board would create a link to the real world, can bring additional visibility, and attract new resources for its support.

**Panel Judgement**

<b>Principle 7: Information management</b>	
Fully compliant	
Substantially compliant	<b>X</b>
Partially compliant	
Non-compliant	

**Panel Recommendations**

To enhance adherence to Principle 7, the EEA Panel recommends the following:

- Further optimize the data capture methods, and the use of the information to continuously improve the educational process.
- The course/instructor evaluation process could be further improved by conducting a mid-term evaluation and making summary results available to the students.
- Establish a formal alumni network that can provide feedback resulting to the further development and connection of the PSP with the realworld.
- Establish a formal External Advisory Board that can provide guidance on curriculum revision as well as attracting resources for the program.

## **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**

Dedicated website available at <https://dixinet-eaa.chem.uoa.gr/dpms/> providing key information on the academic unit and the PSP. The study programme is presented in detail under three separate streams (1: Chemistry Education, 2: New Education & Teaching Technologies and 3: Education for Sustainable Development). Within each of these streams different modules are presented systematically giving appropriate details for the mode of attendance, criteria for assessment, mode of assessment, module content, learning objectives, desirable skills, etc.

Information about the teaching staff is available on the website and brief CVs can be seen by clicking on the names of a specific teaching staff. The CVs are available only in Greek . There were no available CVs for 2 of the listed teaching staff. CVs should be updated regularly and presented in a uniform format. The English version of the website is arranged somewhat different and in a more summarising form.

There was no special promotion segment for this PSP on the Department's website. This PSP was listed alongside other PSPs.

All course outlines of the PSP are complete and available online on the PSP website.

A declaration of policy for Quality Assurance is available on the PSP website.

The information provided on the website appears to be up-to-date, clear and easily accessible, although there was no declaration and/or confirmation of successful Website Accessibility check.

#### **II. Analysis**

Overall, there is substantial compliance relative to Principle 8. Some minor improvements can be introduced, like the inclusion of a statement on website accessibility check, after of course the web site has undergone the relevant accessibility check. It is important to make sure that websites are properly designed

and coded for people with disabilities to be able to use them and navigate easily through them.

### III. Conclusions

The public information on this PSP is detailed and comprehensive. There is some room for further improvement by acting on a couple of minor issues.

#### Panel Judgement

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

#### Panel Recommendations

To enhance adherence to Principle 8, the EEA Panel recommends the following:

- Subject the website to a full accessibility check.
- Update and include CVs for all teaching staff. CVs should be kept updated and presented in a uniform format.

## **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**

Annual internal assessment by MODIP appears to take place promptly (the MODIP assessment report for the academic year 2021-22 was available). The report was made publicly available on the website under the link "results of the Internal PSP Assessment by MODIP".

The MODIP report has identified both strong and weak points of the PSP, and recommendations for action plans have been made. A clear list within the MODIP report of action plans (under the categories of "corrective actions" and "proleptic actions") have been presented with identified staff/committees responsible for the implementation of these recommendations. It appears that a generic specific date of 31/12/2023 (the end of the following year) was set as a deadline for the implementation of all these recommendations.

Data from students' evaluations of the teaching and learning are available alongside relevant statistical analyses.

## **II. Analysis**

The EEA Panel would suggest that recommendations from the MODIP report are implemented at set time points (for example quarterly) throughout the following year rather than the generic date at the end of the following year. This approach will allow the continuous monitoring of improvement, accountability, and allow for further corrective intermediate actions should they be needed to achieve full compliance with the MODIP recommendations by the end of the following year.

Documentary evidence of implementation of action plans from past years 2018-2022 should be made available on the website for transparency.

A frank and detailed analysis of the student evaluation of teaching and learning data was presented. Useful conclusions were drawn from the statistical analyses and three major action plans were identified to improve on scientific literature availability from the University library, to help the students by updating the lecture content particularly in e-classes, to reinforce the academic tutoring role with more extensive advice on academic matters and to update the laboratory equipment with modern state of the art scientific instruments to fulfil the needs of laboratory training.

The EEA Panel discussions with current students and graduates from this PSP as well as stakeholders revealed an enthusiasm and supporting positive comments for this PSP. Perhaps one improvement that was suggested by some students was the flexibility as far as the practical part of this programme is concerned by expanding further the practical training from 2 hours to 3, 4 or more hours on a voluntary basis.

## **III. Conclusions**

Overall, there is substantial compliance for Principle 9. Some minor improvements can be introduced, as suggested below.

## Panel Judgement

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

## Panel Recommendations

To enhance adherence to Principle 9, the EEA Panel recommends the following:

- On-going monitoring and continuous improvement should be voluntary within the remit of PSP quality. The EEA Panel appreciates that the evaluation and assessment framework is relatively new, and the points suggested below are for future practice.
- Stepwise implementation and monitoring of MODIP's recommendations throughout the year (quarterly) may be a better monitoring process to assure continuous improvement.
- Documentary evidence of implementation of major action plans from previous years should be made publicly available via the website.
- Academic feedback to student evaluation of teaching and learning should be provided for every module and major actions should be documented and made available on the PSP website.

## **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**

There are not any external evaluations of this PSP since its commencement in the current format in 2018. This PSP is a continuation and development of an older PSP entitled “Chemistry Education and New Educational Technologies”. The latter PSP was externally evaluated twice, in 2000 and 2003 and found to be innovative and well structured.

#### **II. Analysis**

The EEA Panel appreciates that the framework of compulsory external evaluations is newly implemented. As such, there have not been previous external evaluations in the past 20 years for this PSP. The last external evaluation was dated from 20003. It is good academic practice within the remit of quality and continuous improvement to engage in external evaluations, even if these are not legally required, to identify weak points that might need actions. It appears that the teaching staff of the PSP are aware of the importance of the external evaluation and contribution to improvement.

Given the compulsory nature of the HAHE external evaluations in the future this important point will be addressed more systematically than it has been in the past.

#### **III. Conclusions**

There has not been regular external evaluation of this PSP as it was not a requirement prior to the recent HAHE framework. The conclusions of this HAHE-directed external assessment, and potentially from other independent external assessments in the future, must be considered by the participating academic units and teaching staff and actions must be implemented where appropriate. Actions related to major recommendations should be made available publicly on the PSP website and communicated to all involved.



### Panel Judgement

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

### Panel Recommendations

To enhance adherence to Principle 10, the EEA Panel recommends the following:

- The PSP will benefit from a formal External Advisory Board.
- Beyond the legal framework, the PSP should be externally evaluated at regular time periods. External evaluations should be made available on the relevant website.

## **PART C: CONCLUSIONS**

### **I. Features of Good Practice**

- The Institution has implemented compliant, efficient mechanisms for monitoring and ensuring high quality education and services relative to the PSP. Quality assurance policies are already implemented regarding teaching/course delivery, assessment, and student progression. The existing quality assurance and continuous improvement policy and practices followed by the PSP align with the strategic objectives of the Departments involved and the Institution.
- The faculty and staff are enthusiastic and dedicated to their mission. The students' overall experience is very positive. The enthusiasm of current students, employers, and other stakeholders was evident.
- In-person instruction and hands-on laboratory training of students.
- Employment of the postgraduate studies programme graduates in public and/or private jobs is very high. . Many students are already in education and are looking to improve their educational skills. A number of graduates continue with doctoral studies.
- Employers and social partners praised the postgraduate studies programme and believe there is a clear need for such graduates.
- The participation of women in teaching, research, and administration is valued and recognized.

### **II. Areas of Weakness**

- The website version in English does not include all details found in the Greek version.
- There are limited interactions with alumni after graduation.
- Based on the interviews of the EEA Panel with current and past students, it appears that laboratory tools and resources dedicated to Didactics of Chemistry need updating.
- Student teaching practice of 2 hours is very limited.
- Lack of a formal External Advisory Board.

### **III. Recommendations for Follow-up Actions**

- Establish a formal process for the active participation of students in the curriculum development and study programme revisions.
- Update regularly the website of the programme. Subject the website to a full accessibility check.
- Feedback to student evaluation of teaching and learning should be provided and major actions should be documented and made available on the PSP website.
- Further development of laboratory infrastructure, including additional modern laboratory equipment, is needed.
- Enrich and update learning materials frequently.
- Increase collaborations with research institutions/centres for the preparation of diploma theses.
- Consider increasing practice teaching hours on voluntary basis for those students who want to gain more teaching experience.
- Establish a formal External Advisory Board which will guide the continuous review, revision, and further development of the PSP curriculum, enhance the entire programme, as well as attract resources.

#### IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are:

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

The Principles where substantial compliance has been achieved are:

**7, 8, 9 and 10.**

The Principles where partial compliance has been achieved are:

**None.**

The Principles where failure of compliance was identified are:

**None.**

Overall Judgement	
Fully compliant	<b>X</b>
Substantially compliant	
Partially compliant	
Non-compliant	

## The members of the External Evaluation & Accreditation Panel

**Name and Surname**

**Signature**

**1. PAVLOSTATHIS SPYROS (Chair)**

School of Civil and Environmental Engineering, Georgia Institute of Technology

**2. SOULTANAS PANAGIOTIS**

University of Nottingham

**3. XANTHEAS SOTIRIS**

Pacific Northwest National Laboratory U.S. Department of Energy

**4. TEKOS FOTIOS**

University of Thessaly