



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
HELLENIC REPUBLIC



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for Higher Education

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Accreditation Report

for the New Postgraduate Study Programme of:

MSc Industrial and Environmental Applications in Micropaleontology/IdEA-M

Department: Geology and Geoenvironment

Institution: National and Kapodistrian University of Athens

Date: 20/10/2024



Με τη συγχρηματοδότηση
της Ευρωπαϊκής Ένωσης



Πρόγραμμα
Ανθρώπινο Δυναμικό και
Κοινωνική Συνοχή



Report of the Panel appointed by the HAHE to undertake the review of the New Postgraduate Study Programme of MSc Industrial and Environmental Applications in Micropaleontology/IdEA-M 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 new postgraduate study programme of MSc Industrial and Environmental Applications in Micropaleontology/IdEA-M of the National and Kapodistrian University of Athens comprised the following four (4) members, drawn from the HAHE Register, in accordance with Laws 4009/2011 & 4653/2020:

- 1. Professor Emeritus KATOPODES NIKOLAOS (Chair)**
University of Michigan
Ann Arbor, Michigan, USA

- 2. Professor Emeritus CONSTANTINOU STAVROS**
Ohio State University
Mansfield, Ohio, USA

- 3. Dr. ELIADES NICOLAS GEORGE**
Frederick University
Nicosia, Cyprus

- 4. Mr. GIOTOPOULOS GEORGIOS**
University of Patras
Patras, Greece

II. Review Procedure and Documentation

In preparation for the review and assessment of the PSP Industrial and Environmental Applications in Micropaleontology of the National Kapodistrian University of Athens (NKUA), the External Evaluation & Accreditation Panel (EEAP) reviewed a multitude of materials provided by the Hellenic Authority of Higher Education (HAHE). These included background information, guidance on the review and accreditation process, and detailed data on the program under evaluation, such as the program accreditation proposal and associated appendices.

The program review was conducted via teleconference, organized and coordinated by HAHE and the National Kapodistrian University of Athens. The schedule and agenda of the review were as follows:

Monday, 14/10/2024:

Preliminary private teleconference meeting of the EEAP. Discussion of the program under review. Assignment of writing parts of the accreditation report to the members of the EEAP.

Tuesday, 15/10/2024:

1. Welcome teleconference meeting and a brief overview of the PSP with the Vice-Rector for Academic Affairs, International and External Relations, Prof. Sophia Papaioannou; the Head of the Department of Geology and Geoenvironment, Prof. Asimina Antonarakou; and the Director of the PSP, Prof. Maria Triantaphyllou.
2. Meeting with teaching staff members of the PSP including Prof. Katerina Kouli, Prof. Hara Drinia, Prof. George Kontakiotis, Prof. Ioannis Panagiotopoulos, Prof. Margarita Dimiza; and Laboratory Teaching Staff members Ms. Elisavet Skampa and Ms. Olga Koukousioura.
3. On-line tour: classrooms, lecture halls, libraries, laboratories, and other facilities related to the PSP. Discussion of the facilities presented in the video produced for this purpose with Administrative staff members: Mr. Dimitrios Psarris, Secretary of the Department; Dr. Evgenia Fatourou, Post-Doc. Researcher; Teaching staff members Prof. Theodora Tsourou, Prof. Maria Hatzaki; and Laboratory Teaching Staff members Ms. Elizabeth Stathopoulou and Ms. Evangelia Besiou.
4. Meeting with employers and social partners including Dr. Spyridon Bellas, Principal

Researcher at the Institute of GeoEnergy, Foundation for Technology & Research –Hellas; Dr. Aristomenis Karageorgis, Director of the Institute of Oceanography, Hellenic Centre for Marine Research; Dr. Athanassios Ganas, Research Director, National Observatory of Athens - President Geological Society of Greece; Dr. Spilios Sotiropoulos, Exploration Geologist, HELPE UPSTREAM S.A., HELLENiQ ENERGY Holdings S.A.

5. Private debriefing meeting (EEAP members only).

6. Closure meeting with Vice-Rector for Academic Affairs, International and External Relations Professor Sophia Papaioannou, the Head of the Department of Geology and Geoenvironment, Prof. Asimina Antonarakou, and the Director of the PSP, Prof Maria Triantaphyllou. The meeting also included OMEA faculty members: Prof. Charalampos Kranis and Prof. Stylianos Lozios; and MODIP staff member Mr. Konstantinos Bourletidis.

Wednesday, 16/10/2024 to Saturday 19/10/2024:

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

Throughout the review and evaluation process, the EEAP was in close communication with the Department and the PSP administration, which were very accommodating in providing additional information requested by the EEAP. The EEAP found that the Department and the PSP administration, as well as the faculty, staff, and stakeholders interviewed, were eager and helpful in our discussions, providing valuable additional information.

III. Postgraduate Study Programme Profile

The postgraduate study program (PSP) Industrial and Environmental Applications in Micropaleontology is organized and offered by the Department of Geology and Geoenvironment of the National Kapodistrian University of Athens. The PSP was established in 2021 (NKUA Senate Decision of 27-10-2021) and approved by the Government in 2022 (Official Gazette B' 770/21-02-2022) for operation in the academic year 2025-2026. The PSP operates under the regulations of the NKUA for postgraduate and doctoral studies established by the University Senate meeting on 30/12/19 and published in the Official Gazette in issue B' 1726/6-5-2020.

The objective of the PSP is to specialize scientists and researchers in industrial and environmental applications of Micropaleontology thus enabling the transition from fossil fuels to green energy sources. The PSP focuses on future professional needs and prepares graduate students for an evolving work environment in a global society.

The objectives of the PSP are to develop basic and applied research by employing novel and interdisciplinary methods and to disseminate scientific expertise to social groups, research agencies, and industries. To that end, the PSP was developed based on suggestions from experts in academia, government, and industry. Both the program and objectives of the new PSP are unique. There are no similar programs offered currently in the entire European Union, and the anticipated demand is very high.

Teaching in the PSP is provided by 10 members of the faculty of the Department of Geology and Geoenvironment. In addition, several instructors from the Department of Geology and Geoenvironment and other departments of NKUA, other universities, government agencies, research institutes, the private sector, and staff members of the Department of Geology and Geoenvironment will contribute to the educational process of the PSP.

The program has set the maximum number of admitted students per academic year to 20, which aims to maintain an excellent student-to-instructor ratio. Classes will be given in person and lectures will be delivered exclusively in English.

The EEAP did not interview any current students or recent graduates, as this is a new program. However, participants of the meeting with the stakeholders were familiar with the teaching faculty of the PSP, and provided valuable information regarding the Department's treatment of students. The students have a diverse background, which offers the potential for great opportunities for multidisciplinary work. This also presents some challenges in the course offerings and student learning. All of the stakeholders were enthusiastic about the learning opportunities that will be made available by the new PSP. They were very positive regarding the study program, the research strength of the faculty, and the overall reputation of the Department.

The PSP requires a minimum of three (3) academic semesters study. To graduate, a student must have successfully completed 90 European Credit Transfer System (ECTS) credits (60 ECTS for coursework and 30 ECTS for the preparation and successful completion of a postgraduate thesis). Attendance in lectures is mandatory, and final examinations are administered on line. There are no elective courses offered by the PSP, which limits the flexibility of the study program. However, the EEAP found that the courses offered cover most topics of interest in the area of specialization of the PSP.

The PSP prepares graduates trained in the application of Micropaleontology to industrial and environmental issues which are important independently, but can also be coupled in the energy transition from fossil fuels to green and sustainable sources. There are strong links of the subject matter of Industrial and Environmental Applications in Micropaleontology to the needs of society. Therefore, the new PSP may help its graduates pursue careers in the public sector, as well as government and industry. In addition, a significant fraction of graduates is expected to continue with doctoral studies.

The Department of Geology and Geoenvironment offers three (3) other graduate programs and participates in four (4) additional inter-departmental graduate programs. The department also maintains a very active program in doctoral and postdoctoral studies. The teaching assignments of the faculty seem reasonable, thus the new PSP is not expected to increase the stress in faculty lives or affect the quality of their work.

PART B: COMPLIANCE WITH THE PRINCIPLES

Principle 1: Strategy, Quality Assurance Policy and Quality Goal Setting for the New Postgraduate Study Programmes

INSTITUTIONS SHOULD INCLUDE IN THEIR STRATEGIC MANAGEMENT THE DEVELOPMENT, ORGANISATION, AND IMPLEMENTATION OF NEW POSTGRADUATE STUDY PROGRAMMES (PSP) IN SPECIFIC SCIENTIFIC FIELDS AFTER INVESTIGATING THEIR FEASIBILITY AND SUSTAINABILITY.

INSTITUTIONS SHOULD APPLY A QUALITY ASSURANCE POLICY FOR THE NEW POSTGRADUATE STUDY PROGRAMMES AS PART OF THEIR STRATEGIC MANAGEMENT.

THIS POLICY SHOULD EXPAND AND BE AIMED (WITH THE COLLABORATION OF EXTERNAL STAKEHOLDERS) AT THE PSP OF THE INSTITUTION AND THE ACADEMIC UNIT. THIS POLICY SHOULD BE PUBLISHED AND IMPLEMENTED BY ALL INTERESTED PARTIES.

By decision/s of the Institutional Senate, the Institutions should adapt their strategy to allow for the provision of postgraduate study programmes, in addition to attending to the profile, vision, mission and strategic objectives of the Institution. In this strategy, the Institutions should anticipate the potential benefits, difficulties or risks from the implementation of new postgraduate study programmes and plan all the necessary actions to achieve their goals. The Institution's strategic choices should be documented through specific feasibility and sustainability studies, especially for new postgraduate study programmes.

In the case of PSP delivered by distance methods, the Institution prepares and applies an e-learning strategy. The Institution's e-learning strategy is integrated into its overall strategy and identifies educational goals while keeping up to the rapid technological changes and to the developments in pedagogical models. The Institution should include in its strategy the justification and feasibility as to why e-learning has been selected as the appropriate learning strategy for the particular programmes of study where it is applied.

In the context of e-learning, innovation strategies, the possibility of programme revision, the linking between learning and research (requiring knowledge of the latest innovations in order to select the most appropriate means to achieve the learning outcomes) should be taken into account.

The quality assurance policy of the academic unit for postgraduate study programmes should be in line with the Institution's strategy 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 postgraduate 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 continuous 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 and the availability 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 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 internal review and audit of the quality assurance system for the PSP through the cooperation of the Internal Evaluation Group (IEG) with the Institution's Quality Assurance Unit (QAU)*

Documentation

- *The Institutional strategy for postgraduate studies, which includes a special strategy for e-learning, as long as it is applied to the Institution's PSP*
- *Feasibility and sustainability studies for the new PSP*
- *Quality Policy of the academic unit for the development and improvement of PSP*
- *Quality Targeting of the academic unit for the PSP*

Study Programme Compliance

I. Findings

The design of the new master's program on "Industrial and Environmental Applications in Micropaleontology" (IdEA-M) at the Department of Geology and Geoenvironment (DGG) is aligned with the Graduate Education Institutional Strategy (GEIS), namely the Strategy Tool 07 of the National and Kapodistrian Strategic Development Plan 2019-2028 of the University of Athens (Government Gazette 1726B/6-5-2020). Under the frame of GEIS, implementing English-speaking Postgraduate Study Programs (PSP) and attracting foreign postgraduate students are parts of the suggested indicators of strategic tools development.

The DGG has developed a PSP of IdEA-M that fulfils the learning outcomes and qualifications of the postgraduate students consistent with Level 7 of the European and National Qualifications Framework for Higher Education. In addition, the NKUA has developed and implemented its Quality Assurance Policy as part of its broader strategy (<https://modip-en.uoa.gr/qau/mission/>). The DGG in collaboration with the Quality Assurance Unit (QAU) and the Department's Internal Evaluation Group (IEG), has harmonized the quality policy of the PSP IdEA-M with that of the University, accompanied by the quality assurance targets

for the continuous development and improvement of the PSP, as well as that of the academic unit and other educational programs. The Quality Assurance Policy of the PSP is publicly accessible from the PSP's website (<https://idea-m.com>) and includes adequate reference to the PSP delivery, including commitments to satisfy requirements and strive for continuous improvement. The processes and procedures used for the monitoring and continuous improvement of the quality of the PSP are as follows:

- (a) The implementation of PSP's Policy for Quality Assurance;
- (b) The allocation and management of PSP's 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, including qualitative and quantitative analysis (including a course evaluation survey completed by the students), and improvement of the PSP;
- (f) The disclosure and publication of all information related to the PSP made publicly accessible;
- (g) The external evaluation and accreditation of PSP, following the procedures by HAHE.

The quality and effectiveness of teaching at the PSP is closely monitored through the course/instructor evaluation by the students and the collection/ analysis of data by the IEG and QAU on an annual basis.

II. Analysis

The structure and organization of the PSP of IdEA-M are well thought out and in line with the overall goal of the program, providing a PSP with a specific and in-depth orientation in the area of micropaleontology. The advanced material covered, along with the study of industrial and environmental applications in main microfossil groups result in learning outcomes and qualifications for the postgraduate students consistent with Level 7 of the European and National Qualifications Framework for Higher Education. This observation is fully supported by the appropriateness of the qualifications and the availability of the teaching/ academic staff for the PSP, which exhibit high-quality research work, together with experience in teaching specific topics on micropaleontology, paleoenvironment, and stratigraphy.

Notably, the structure and the curriculum of IdEA-M fully support the level of demand for the graduates' qualifications in the labour market. The PSP of IdEA-M focuses on the biostratigraphic and environmental applications of micropalaeontology, to address issues related to the energy field of hydrocarbon exploration and exploitation and "green" applications in the context of decarbonization. However, the PSP should better elaborate the way in which the curriculum of IdEA-M encompasses the "green" applications in the context of decarbonization. The advantage of the PSP of IdEA-M is that it develops

interdisciplinary research and combined study on Industrial Micropalaeontology / Bioreservation and Environmental Micropalaeontology, with the aim of training in subjects of energy interest, parallel to the environment and climate.

The DGG could provide the PSP of IdEA-M with quality administrative services, a library (with academic materials), a student welfare office, as well as specialised infrastructure (laboratories and equipment). Tuition fees can support the above services, if financial resources are planned efficiently. The Quality Assurance Policy is adequately communicated to all parties involved, since the PSP has set specific measurable, achievable, relevant and timely goals regarding the postgraduate program. Despite the fact that the number and topics of targets are effective, the following targets could also be set for monitoring: grade point average of postgraduate theses; research output such as number of publications, citations and impact; indicators of mobility (e.g., Erasmus+); percentage of postgraduate students who continue for doctoral studies, etc. Based on the data provided to the EEA Panel, the targets are also paired with suitable key performance indicators (KPIs).

III. Conclusions

The EEAP considers that, in general, the PSP of IdEA-M has a reasonable structure and will succeed in providing its graduates with high quality and specialised knowledge relevant to industrial and environmental applications in micropaleontology.

Panel Judgement

Principle 1: Strategy, Quality Assurance Policy and Quality Goal Setting for the New Postgraduate Study Programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- The learning outcome of “green” applications in the context of decarbonization should be described in detail and the curriculum to be more precise on how this scientific topic will be addressed. Furthermore, the term “carbonization” should be replaced by “decarbonization” in the context of green applications (c.f. Official Gazette p. 7929, B’770/21.2.2022).

Principle 2: Design and Approval of New 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 NEW POSTGRADUATE STUDY PROGRAMMES. THE OBJECTIVES, THE SPECIFIC SCIENTIFIC SUBJECT AND THE STREAMS OR SPECIALISATIONS, THE EXPECTED LEARNING OUTCOMES AND THE EMPLOYMENT PROSPECTS ARE SET OUT IN THE PROGRAMME DESIGN. DURING THE IMPLEMENTATION OF THE NEW 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, the specialisations, the expected learning outcomes, the structure, the courses, the teaching and assessment modes, the teaching staff and the necessary resources 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. In particular, for each expected 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 for the 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 NQF, 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: teaching assignments per subject area and per course*

Study Programme Compliance

I. Findings

The PSP IdEA-M is an innovative program designed to meet important needs related to biostratigraphic and environmental applications of micropalaeontology on state-of-the-art issues related to the energy field of hydrocarbon exploration and exploitation, as well as specialization in “green” applications in the context of decarbonization. This is a unique PSP in the academic field, a fact that gives vital space for attracting candidates from abroad, since the program does not face substantial competition in the European area, while at the same time is particularly oriented towards non-European countries where the research interest in hydrocarbon extraction remain high. The structure, content, and organization of the curriculum are reasonable, however, the wording in the course (lectures) descriptions needs revising. The courses and teaching methods are oriented towards deepening the knowledge and acquiring the corresponding skills to apply this knowledge (e.g. courses with specific skills on micropalaeontology, participation in research projects, thesis with a research component, etc.). Furthermore, the PSP is characterized by a strong link between teaching and research, thanks to the specialization of laboratories and equipment that have been previously established by the DGG. In general, the PSP IdEA-M covers specific topics in micropaleontology, which could be applied in industrial and environmental fields. Thus, the EEAP finds that overall the PSP IdEA-M is successful in providing its graduates with useful and specialized knowledge relevant to its subject matter. A particular characteristic of the PSP IdEA-M is the balance between theory and practical exercises (laboratory training and laboratory work). The structure, content, and organization of the courses and teaching methods are oriented towards deepening relevant knowledge and acquiring the corresponding skills to apply this knowledge.

II. Analysis

The design of the IdEA-M program was based on appropriate standards, as well as the relevant legislation and regulations of the NKUA and DGG, a fact that resulted in the approval of the PSP IdEA-M by the Department and the host Institution. The first impression from the curriculum is the high specialization on taxonomy aspects of micropaleontology, which is necessary in order to provide in-depth and high-quality knowledge on this study area. Thus, the curriculum is balanced and adequately covers the subjects of this PSP. It enables those

students who wish to deepen their research to carry out a postgraduate thesis during the last semester. In general, the structure of the PSP is satisfactory. The curriculum design needs to improve on the following:

(a) The expected learning outcomes for each course must be determined based on the European and National Qualifications Framework (EQF, NQF), and the Dublin Descriptors for Level 7. As it stands now, the wording of the learning outcomes for each course is at a level lower (“undergraduate Level 6”), rather than Level 7. The Qualifications Framework of the European Higher Education Area states that the verbs “learn, understand, know” are typically used to characterize the learning results of the courses for the undergraduate programs. It should be noted that, according to the Qualifications Framework of the European Higher Education Area, graduates of Level 7 of the 2nd Cycle of Studies, to which the PSP corresponds, should “gain highly specialised knowledge, some of which is cutting-edge knowledge in a field of work or study and which forms the basis for original thinking” and “gain specialized problem-solving skills required in research and/or innovation in order to develop new knowledge and processes”. Nevertheless, discussions with the teaching staff revealed that the courses here provide the desired specialization in the respective subjects.

(b) The procedure of curriculum revision should be according to the PSP regulation to involve in this procedure stakeholders, external experts, students, and graduates from the subject PSP. The consultation with the social and scientific groups that have the relevant market experience will shed light on the current needs and practical skills, essential for the market in real time. For this, there is the suggestion for establishing a formal External Advisory Board, with the aim to provide feedback on improvements that can be made, and on emerging needs that can be addressed by the PSP IdEA-M.

(c) Based on the Quality Assurance Policy of the PSP, the students need to be actively involved in the evaluation of the quality and efficiency of the courses’ teaching. The committee of PSP IdEA-M should develop the flexibility for directly intervening in solving educational problems, deepening education and training skills through the courses, while at the same time bringing changes to the admission criteria of students in the PSP (i.e. prerequisite skills and/or courses background from previously earned degrees).

(d) The PSP IdEA-M does not offer any elective courses. At the moment this does not represent a negative issue for the structure of PSP, but remains a topic that should be discussed in the future life-cycle of this PSP.

(e) The Study Guide provides the basic information that students should have at the start of their studies. However, in all course descriptions, the same general paragraph describes the assessment process for students and the general competencies to be acquired through each course. A presentation of the specific characteristics of each course would be expected instead (e.g. oral or written exam – multiple choice test, questions requiring extended responses etc., scientific presentation on specific topics or elaboration of projects, type of

practical exercise, etc.), to specify the exact type of assessment process for students, together with the general competencies to be acquired through each course. Also, the Study Guide should provide all necessary information about the studies and activities in PSP IdEA-M (e.g. research seminars, mobility, fieldwork, participation of graduate students in international conferences, getting in touch with other research groups, and exploring emerging opportunities inside and outside academia) as these are described in the “Proposal for Academic Certification of the New Postgraduate Study Program”.

III. Conclusions

The EEA Panel considers that, in general, the PSP has a reasonable structure and succeeds in providing its graduates with useful knowledge and experience relevant to the industrial and environmental application of micropaleontology. The Panel believes that the PSP can be improved by adopting the suggestions presented below so that its implementation becomes even more effective.

Panel Judgement

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

Panel Recommendations

To enhance adherence to Principle 2, the EEAP recommends the following:

- Rephrase/reword the course syllabi to emphasize that courses are offered at a postgraduate level.
- Establish a formal External Advisory Board, which will be composed of stakeholders, alumni, and students of the PSP. The Board will provide feedback on improvements that can be made to new topics that arise and can be addressed by the PSP.
- Enrich the Study Guide with information that is expected in a PSP Guide based on the information that has been provided to the EEA Panel in the “Proposal for Academic Certification of the New Postgraduate Study Program”.

Principle 3: Regulations for 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).

The Institution should develop and publish the internal regulations prescribed by law which, among other things, should regulate all issues of postgraduate studies from the beginning to the end of the studies.

Indicatively:

- *The students' 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*

In case that the PSP is offered through distance learning methods, the Institution should have in place a regulation for e-learning, including in particular the following issues:

- *Services of the Institution to support e-learning*
- *Methodology for the development and implementation of courses*
- *Ways of providing teaching and variety of teaching and assessment modes*
- *General standard of course structure*
- *Student support system*
- *Support of faculty/teachers with mandatory e-learning training for new staff members*
- *Technological infrastructures made available by the Institution*
- *Student identity confirmation system (student identity check, assignment and exam writing process, security and certification issues).*
- ❖ *The Institution should establish rules for the provision of appropriate access and for the assurance of the participation of students affected by disability, illness, and other special circumstances.*
- ❖ *Ethical issues, such as those concerning data protection, intellectual property rights and rules for protection against fraud are governed by the e-learning regulation.*

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

Documentation

- *Internal regulation for the operation of the postgraduate study programme*
- *Special regulation for the implementation of e-learning if the PSP is delivered through distance methods*
- *Research Ethics Regulation*

- *Regulation of studies, internship, mobility, and student assignments*
- *Degree certificate template and Diploma Supplement template*

Study Programme Compliance

I. Findings

The proposed Postgraduate Study Program (PSP) in "Industrial and Environmental Applications in Micropaleontology (IdEA-M)" aims to enrol 20 candidates, a number deemed sufficient to ensure the program's long-term viability. Eligible applicants include graduates from Greek or foreign universities with Bachelor's degrees (level 6). The new PSP seeks to attract graduates from various fields, including seven specified disciplines, as well as other related areas. Foreign applicants must verify that their university is recognized by the Hellenic National Academic Recognition and Information Center (DOATAP).

The criteria for selecting and admitting postgraduate students, along with the required supporting documents (12), are clearly and comprehensively outlined. Admission to the program is based on a well-defined selection process. Applicants are evaluated based on their undergraduate academic performance, scores, and recommendation letters, followed by interviews conducted by a three-member committee appointed by the Coordinating Committee of the new PSP. These procedures are thoroughly outlined in the supporting documents, including information on students' rights and obligations and methods for monitoring student progress toward completion of their degree.

The Student's Handbook and Syllabus provide comprehensive and detailed information about all aspects of the new PSP. These include expectations regarding the conduct of research, especially the preparation of the thesis, expectations regarding courses and class attendance, internships, mobility, student assignments, and evaluations, and the formula for calculating the grade of the Postgraduate Studies Diploma. Most teaching follows traditional methods and requires personal attendance with significant laboratory work.

The duration of the PSP is one and a half years (three semesters, totalling 90 ECTS). The coursework covers the first two semesters (30 ECTS each), and the third semester counts for 30 ECTS credits awarded for writing the MSc thesis. The students must attend lectures and workshops, conduct lab work, and get evaluated at the end of each semester. The PSP diploma qualifies graduates for employment primarily in the industry, private, or public sectors (e.g., research institutes and private companies). Graduates can also pursue Ph.D. studies and pursue an academic career.

II. Analysis

The proposed PSP in "Industrial and Environmental Applications in Micropaleontology (IdEA-M)" aims to cover a vital need for graduates with training in innovative hydrocarbon exploration and exploitation methods and specialization in the context of the current transition to "green" energy applications. This area of research creates a space in higher education with Europe-wide appeal. Furthermore, the new PSP will attract students from the Middle East, North Africa, and China.

The EEAP's meeting with employers and social partners highlighted the need for the proposed PSP. All four employers emphasized the demand for qualified graduates that the PSP aims to produce. They were supportive of the program and the Department of Geology and Geoenvironment faculty members who will implement it. Additionally, the Geological Society of Greece fully supported the new program. All employers with long-standing working relationships with the Department of Geology and Geoenvironment faculty members expressed their appreciation for this ongoing collaboration.

The language of instruction is English, catering primarily to international candidates. Enrollment in the proposed PSP requires fees, which are €5,000 for non-EU citizens and €3,000 for EU citizens. The Erasmus+ program offers students a wide range of mobility opportunities because they can complete part of their studies in one participating European country.

The EEAP deems the duration of the PSP, which spans three academic semesters (1.5 academic years), satisfactory for degree completion.

III. Conclusions

Although the PSP "Industrial and Environmental Applications in Micropaleontology (IdEA-M)" has not yet begun accepting students, the Department of Geology and Geoenvironment has supported a well-organized and thoughtfully designed program. The various courses and laboratories significantly enhance student training, and both the quality of these resources and the duration of the program are considered satisfactory.

Panel Judgement

Principle 3: Regulations for Student Admission, Progression, Recognition of Postgraduate Studies, and certification	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

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

- Make additional efforts and provide resources to enhance participation in Erasmus+, particularly in light of the ongoing efforts to internationalize higher education and attract students from abroad.
- Given the strong support from employers, industry, and social partners, the program would greatly benefit from implementing a student internship initiative. Such an internship program would provide mutual benefits and encourage students with fewer means to enroll.
- Establish a consultative body comprising industry representatives, international academics, and other stakeholders that would offer valuable advice for future program directions and reassessment.

Principle 4: Teaching Staff of New 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 and scientific competence of the teaching staff at the PSP, the appropriate staff-student ratio, the proper staff categories, the appropriate subject areas, the fair and objective recruitment process, the high research performance, the training, 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, policy for attracting highly qualified staff, and PSP Obligation Regulation*
- *List of the intended for recruitment teaching staff including subject areas, employment relationship, Institution of origin, Department of origin and relevant individual achievements*

Study Programme Compliance

I. Findings

The recruiting processes and criteria are clear and transparent, ensuring that the Postgraduate Study Program (PSP) is supported by an adequate number of teaching staff members. A formal student evaluation of instruction will be conducted annually. Detailed documentation exists for each staff member's performance, focusing on the quality and quantity of their scientific research and teaching contributions.

The strategic goals highlight that faculty members have opportunities for professional development through research and teaching. Research data covers a wide range of activities, including the number of articles in international journals, conference papers, research projects, doctoral dissertation supervision, membership in doctoral committees, and involvement in master's theses.

Participation in Erasmus+ offers additional professional development

opportunities. Several faculty members are engaged in educational agreements with foreign universities and teach in other departments of NKUA and various institutions.

The research output among the teaching staff varies. A comprehensive listing of staff includes their academic ranks, web pages, area of expertise, educational background, teaching hours, and other teaching activities measured in hours.

Additionally, a concise report on the teaching staff's achievements in research and teaching provides H-index scores from Google Scholar and Scopus as indicators of scientific impact.

Collaborations with external partners are crucial for addressing complex, multidisciplinary research projects. These partnerships benefit students by offering diverse learning opportunities in the classroom, laboratory, and field.

II. Analysis

The recruiting and employment processes for teaching staff are clear and well-defined, ensuring the attraction of capable, productive scholars and effective educators. The program places a strong emphasis on both research and teaching, including involvement with European initiatives like Erasmus+. In summary, the criteria and procedures for staff recruitment are transparent, and the Postgraduate Study Program (PSP) is supported by a sufficient number of teaching staff members. A formal student evaluation of instruction will be conducted annually.

III. Conclusions

The program is fully compliant with the Principle.

Panel Judgement

Principle 4: Teaching Staff of New Postgraduate Study Programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

The EEAP has no recommendations on Principle 4.

Principle 5: Learning Resources and Student Support

INSTITUTIONS SHOULD HAVE ADEQUATE FUNDING TO COVER THE TEACHING AND LEARNING NEEDS OF THE POSTGRADUATE STUDY PROGRAMMES. 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, 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 and foreign students, students with disabilities), in addition to the shift towards student-centered 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 Department of Geology and Geoenvironment manages administrative and secretarial duties. Detailed information about the administrative support staff for the postgraduate program, including their names, work phone numbers, and email addresses, can be found on the department's website.

Postgraduate courses are delivered by faculty members of the National and Kapodistrian University of Athens, as well as researchers and invited lecturers

holding PhDs. Additional teaching personnel include special research staff, special teaching staff, technical laboratory staff, and PhD holders involved in relevant research projects.

To ensure smooth operation of the postgraduate study program (PSP), facilities such as classrooms, amphitheaters with audiovisual equipment, and scientific laboratories from the University's collaborating departments are available. Administrative and secretarial support for the PSP is provided by the Secretariat of the Program, located within the Department of Geology and Geoenvironment at the National and Kapodistrian University of Athens.

The operating costs of the PSP are funded through tuition fees, which are €3,000 for postgraduate students from EU member states and €5,000 for those from non-EU countries. Additional sources of income include donations, benefits, bequests, sponsorships from organizations, research program funding, European Union or international organization programs, contributions from the Special Account for Research Funds (ELKE), and other legal sources.

II. Analysis

The program offers tuition fee exemptions for students who meet specific economic or social criteria, as well as those who have demonstrated excellence in their first cycle of studies. While the department's website provides detailed information on accessibility to the University's facilities for individuals with disabilities, this is not mentioned in the internal regulations.

The website also includes comprehensive information about the teaching staff involved in the postgraduate program and the program's infrastructure. Additionally, students can access informational and promotional material about the available services on the official postgraduate program website.

III. Conclusions

The program is fully compliant with the Principle.

Panel Judgement

Principle 5: Learning Resources and Student Support	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

To enhance adherence to Principle 5, the EEAP recommends the following:

- Include other means of communication with the students such as Facebook, Instagram, YouTube, etc.

Principle 6: Initial Internal and External Evaluation and Monitoring of New Postgraduate Study Programmes

INSTITUTIONS AND ACADEMIC UNITS SHOULD HAVE IN PLACE AN INTERNAL QUALITY ASSURANCE SYSTEM, FOR THE AUDIT, INTERNAL AND EXTERNAL EVALUATION OF THE NEW POSTGRADUATE PROGRAMMES, THUS ENSURING COMPLIANCE WITH THE PRINCIPLES OF THE PRESENT STANDARDS. ANY ACTIONS TAKEN IN THE ABOVE CONTEXT SHOULD BE COMMUNICATED TO ALL PARTIES CONCERNED.

The internal evaluation of the new PSP includes the assessment of the accreditation proposal, as well as the documentation in accordance with the Principles of the present Standards and the quality procedures of the Institution's Internal Quality Assurance System (IQAS). The internal evaluation of new postgraduate study programmes also aims at maintaining the level of educational provision and creating a supportive and effective learning environment for students. The Institution, through its Quality Assurance Unit (QAU) and the corresponding academic units, organise and support the external evaluation procedures of the new PSP, according to the specific guidelines and directions provided by HAHE.

The above comprise the assessment of:

- *the objectives, content, and structure of the curriculum, the knowledge offered and the level of science and technology in the given discipline, thus ensuring that the PSP is up to date, according to the relevant documentation listed in the decisions of the pertinent bodies*
- *the entailed students' workload for the progression and completion of postgraduate studies*
- *the satisfaction of the students' expectations and needs in relation to the programme*
- *the learning environment, support services, and their fitness for purpose for the PSP in question*

Postgraduate study programmes are designed and established in accordance with the provisions of the Institution's internal regulations, involving students and other stakeholders.

Documentation

- *The Quality Assurance Unit (QAU) procedure for verifying whether the requirements of the Standards for Quality Accreditation of New PSP are met, as well as the procedure for organising and supporting their external evaluation procedures*
- *Assessment and feedback mechanisms of the PSP strategy and quality targeting, and relevant decision-making processes (students, external stakeholders)*

Study Programme Compliance

I. Findings

The Postgraduate Study Program (PSP) in "Industrial and Environmental Applications in Micropaleontology/IdEA-M" was established by the unanimous decision of the Faculty Assembly of the National and Kapodistrian University of Athens (NKUA) on October 27, 2021. This decision was based on the favorable recommendation of the Committee of Postgraduate Studies at NKUA and the Assembly of the Department of Geology and Geoenvironment proposal. The decision to establish the new PSP was published in the Government Gazette of the Hellenic Republic, issue B' no. 770, page 7928, February 21, 2022. The program will run during the academic year 2025-26.

The new PSP, organized by the Department of Geology and Geoenvironment, aims to employ principles of micropaleontology in energy research related to hydrocarbon exploration and exploitation and the transition to "green" energy in the context of a prevalent trend for a decarbonized future. The language of instruction is English, and the program has a duration of three academic semesters with a maximum time of four semesters. There is no provision for part-time students. Offering instruction in English makes the program attractive to EU citizens and students from other regions, particularly the Middle East, North Africa, and China. Offering a new PSP in English fits well with the overall goal of the internationalization of higher education at NKUA. Since nearly all faculty members hold doctorates from English-speaking countries, delivering the PSP in English is expected to be seamless.

This review marks the first external evaluation of the new Postgraduate Study Program (PSP) titled "Industrial and Environmental Applications in Micropaleontology/IdEA-M," as mandated by HAHE. The External Evaluation and Accreditation Panel (EEAP) conducted this review. The process adheres to the guidelines outlined in the "Quality Standard for the Accreditation of Postgraduate Programs," issued by HAHE in 2022, as well as the Principles and Guidelines for Quality Assurance in the European Higher Education Area.

The Quality Assurance Unit (MODIP) and the Unit of Internal Evaluation (OMEA) of the Department of Geology and Geoenvironment at the National and Kapodistrian University of Athens (NKUA) were fully committed to the external evaluation process. They actively participated throughout, eager to learn from the EEAP evaluators and incorporate their recommendations for program improvements. The Department promptly provided the Panel with the electronic course evaluations for other courses.

The EEAP evaluators had access to many sources, including the OMEA and MODIP members of the Department of Geology and Geoenvironment at the National and Kapodistrian University of Athens (NKUA). They provided a wealth of information to the EEAP about its activities, including the Postgraduate Study Program (PSP), the expected learning outcomes, the teaching and evaluation procedures, and the degree awarded. In addition, employers and industry partners of the Department were available for interview sessions. They unanimously favored the new PSP because of the pressing needs in the industry

in the areas covered by the new program.

II. Analysis

During the current External Evaluation and Accreditation review process, the teaching staff was fully aware of its significance and the importance of follow-up recommendations. Stakeholders of the academic unit were actively engaged, as evidenced by their participation throughout the review. A procedure is in place to distribute the findings of this external evaluation across all levels of the university's evaluation structure, setting the stage for implementing the External Review Panel's recommendations. Participants understood that this evaluation would form the basis for future Postgraduate Program (PSP) assessments.

As this is the first external review of the PSP, there are no prior recommendations for comparison. The faculty actively participated in the review process, showing high responsiveness and openness during discussions. All of the participants were willing to discuss the program's strengths and weaknesses and recognized the value and importance of the review process. Furthermore, they demonstrated a positive attitude toward implementing potential suggestions for program improvements and expressed gratitude for the Panel's substantive review. The Panel believes that the statements from the Director of the PSP, the Department Chair, and the Head of MODIP provide the strongest guarantee for implementing the Panel's suggestions.

III. Conclusions

The PSP is fully compliant with the Principle.

Panel Judgement

Principle 6: Initial Internal and External Evaluation and Monitoring of New Postgraduate Study Programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

The EEAP has no recommendations on Principle 6.

PART C: CONCLUSIONS

I. Features of Good Practice

The National Kapodistrian University of Athens and the Department of Geology and Geoenvironment have implemented compliant and efficient mechanisms for monitoring and ensuring a high-quality education and services relative to the PSP Industrial and Environmental Applications in Micropaleontology. The existing quality assurance and continuous improvement policy and practices followed by the PSP align with the strategic objectives of the Department of Geology and Geoenvironment and the University.

- The new PSP is unique in combining techniques of Micropaleontology to the transition from fossil fuels to green energy. The PSP will also be the only graduate program offering this course of study in the European Union.
- The faculty and staff are enthusiastic and dedicated to their mission. The research quality of the faculty is commendable.
- The potential for employment of the postgraduate study program graduates in public and/or private positions is high.
- Employers and social partners praised the postgraduate study program and believe there is a clear need for such graduates.

II. Areas of Weakness

- There is no formal External Advisory Board.
- The course syllabi do not reflect that courses are offered at a postgraduate level.
- There is no formal, well-defined process for students, alumni, and external stakeholders to participate in the PSP evaluation and improvement.
- Student participation in internship training is limited.

III. Recommendations for Follow-up Actions

- Establish a formal External Advisory Board comprised of social partners, academics from foreign institutions, and other stakeholders to actively assist and guide the continuous review, revision, and further development of the PSP curriculum, and identify additional resources.
- Rephrase/reword the course syllabi and the student handbook to emphasize that courses are offered at a postgraduate level.

- The learning outcome of “green” applications in the context of decarbonization should be described in detail and the curriculum to be more precise on how this scientific topic will be addressed.
- Enrich the Study Guide with information that is expected in a PSP Guide based on the information that has been provided to the EEA Panel in the “Proposal for Academic Certification of the New Postgraduate Study Program”. Furthermore, the Study Guide should be edited to conform with English terminology that is intelligible to non-Greek speaking students.
- Make additional efforts and provide resources to enhance participation in Erasmus+, particularly in light of the ongoing efforts to internationalize higher education and attract students from abroad.
- The learning outcome of “green” applications in the context of decarbonization should be described in detail and the curriculum to be more precise on how this scientific topic will be addressed. Furthermore, the term “carbonization” should be replaced by “decarbonization” in the context of green applications (c.f. Official Gazette p. 7929, B’770/21.2.2022).

IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are: 1, 3, 4, 5, 6

The Principles where substantial compliance has been achieved are: 2

The Principles where partial compliance has been achieved are:

None

The Principles where failure of compliance was identified are:

None

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

The members of the External Evaluation & Accreditation Panel

Name and Surname	Signature
1. Professor Emeritus KATOPODES NIKOLAOS (Chair) University of Michigan <i>Ann Arbor, Michigan, USA</i>	
2. Professor Emeritus CONSTANTINOU STAVROS Ohio State University <i>Mansfield, Ohio, USA</i>	
3. Dr. ELIADES NICOLAS GEORGE Frederick University Nicosia, Cyprus	
4. Mr. GIOTOPOULOS GEORGIOS University of Patras Patras, Greece	