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Accreditation Report
for the Postgraduate Study Programme of:

Computational Mechanics

Department: Chemical Engineering

Institution: National Technical University of Athens

Date: 30/03/2026

Με τη συγχρηματοδότηση της Ευρωπαϊκής Ένωσης
ΕΣΠΑ 2021-2027
Πρόγραμμα
Ανθρώπινο Δυναμικό και Κοινωνική Συνοχή
enqa.

Report of the Panel appointed by the HAHE to undertake the review of the Postgraduate Study Programme of **Computational Mechanics** of the **National Technical 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 Computational Mechanics of the **National Technical University of Athens** comprised the following five (5) members, drawn from the HAHE Register, in accordance with Law 4653/2020:

1. PONTIKIS VASSILIS (Chair)
   (Title, Name, Surname)
   Institut Rayonnement-Matière de Saclay (Iramis), Commissariat à l'énergie atomique et aux énergies alternatives (CEA)
   (Institution of origin)

2. ARGYROPOULOS DIMITRIOS
   (Title, Name, Surname)
   North Carolina State University (NCSU)
   (Institution of origin)

3. BOTSIS IOANNIS
   (Title, Name, Surname)
   École Polytechnique Fédérale de Lausanne (EPFL)
   (Institution of origin)

4. KOUTSOGIANNI ZOI-LINA
   (Title, Name, Surname)
   Aristotle University of Thessaloniki
   (Institution of origin)

5. KOUTSOS VASILEIOS
   (Title, Name, Surname)
   University of Edinburgh
   (Institution of origin)

II. Review Procedure and Documentation

Brief reference to the Panel preparation for the postgraduate study programme review, as well as to the documentation provided and considered by the Panel. Dates of the review, review, meetings held, and any additional information regarding the procedure, as appropriate.

• The members of the External Evaluation and Accreditation Panel (EEAP), who were assigned the responsibility of assessing the postgraduate study programme (PSP) in Computational Mechanics at the Department of Chemical Engineering of the National Technical University of Athens (NTUA), were selected by the Hellenic Authority for Higher Education (HAHE) from the Register of Independent Experts, in accordance with Laws 4009/2011 and 4653/2020.
• The accreditation review encompassed two subject-related PSPs from the Chemical Engineering department at NTUA, specifically PSP1 ‘’Computational Mechanics’’ and PSP2 ‘’Materials Science and Technology’’.
• The EEAP carried out an extensive evaluation of all documents submitted and reached a consensus among the perspectives of the panel members during discussions on key matters related to the accreditation review, demonstrating a commitment to a shared overall assessment.

The External Evaluation Procedure
- Dates & Times of the Evaluation: The evaluation was carried out remotely on Monday, March 9 2026, from 15:00 to 18:00 and on Tuesday, March 10 2026 from 15:00 to 20:30.
- Description of the review and meetings held: On the first day (Monday, March 9 2026) a remote encounter was organized with the Directors of the two PSPs, the Head of the Department, MODIP members and staff, and Steering Committee/OMEA members. Specifically, the following individuals participated and addressed the EEAP at various points:
- Mr. Athanasios ZISIS, Professor, Vice Rector of Academic Affairs and Lifelong education, President of MODIP at NTUA
- Ms. Glykeria Kakali, Dean and Professor of the School of Chemical Engineering (CHEMENG) at NTUA
- Mr. Andreas BOUDOUVIS, Professor of CHEMENG - NTUA and Director of PSP1
- Mr. Costas CHARITIDIS, Professor of CHEMENG - NTUA and Director of PSP2
- Ms. Evangelia PAVLATOU, Professor of CHEMENG – NTUA, member of MODIP and Coordinator of OMEA
- Mr. Kyriakos GIANNAKOGLOU- Professor of School of Mechanical Engineering, member of Steering Committee of PSP1
- Mr. Vissarion PAPADOPOULOS -Professor of School of Civil Engineering, member of Steering Committee of PSP1

- Mr. Angelos MARKOPOULOS, Professor of School of Mechanical Engineering at NTUA, member of Steering Committee of PSP2
- Mr. Efstratios BADOGIANNIS, Professor of School of Civil Engineering at NTUA, member of Steering Committee of PSP2

Following the brief self-introduction of the participants and the panel chair's explicit request for succinct introductory slide presentations to ensure ample time for questions and discussions, the meeting began with presentations from the directors of the two PSPs. However, despite this request, excessively lengthy presentations could have hindered the panel members' ability to ask questions, had the time schedule been strictly adhered to. In mutual agreement with Profs. Boudouvis, Charitidis, and the panel members, it was decided to cancel the online tour scheduled for 17:00, as web links to the facility presentations were available to the panel members. This decision allowed us to conclude the discussion initiated by the panel members and the responses given by the representatives of the PSPs. Acknowledging that this situation is quite common, as all panel members have faced similar experiences in previous accreditations they have participated in, we have opted to appropriately inform HAHE so that a practical solution can be implemented in the future, aimed at facilitating the successful execution of the duties of other panels involved in upcoming accreditation reviews.

The upcoming planned event (17:30-18:00) was a private encounter of EEAP members aimed at sharing their thoughts on the first day and effectively organizing for the second day of the online reviews respectively Tuesday, March 2026 (PSP1) and Wednesday, March 2026 (PSP2).

On the second day (PSP1: Tuesday, March 2026), there was a meeting of the EEAP with the teaching staff of PSP1 from 15:00 to 15:45, followed by a session with students from 16:00 to 16:45, and concluding with a meeting with graduates from 17:30 to 18:15, which was preceded by a brief break from 17:00 to 17:30. In the meeting with the teaching staff the following individuals have participated:

- Ms. Varvara ASOUTI - PhD, School of Mechanical Engineering
- Mr. Theodoros THEODOROU - Prof. Emeritus, School of Chemical Engineering
- Mr. Ioannis KALOGERIS - Assist. Prof., School of Mechanical Engineering
- Mr. Antonis KARANTONIS - Prof., School of Chemical Engineering
- Mr. Dionysios KOLAITIS - Assist. Prof., School of Mechanical Engineering
- Mr. Vasileios RIZIOTIS - Prof., School of Mechanical Engineering
- Mr. Savvas TRIANTAFYLLOU - Assoc. Prof., School of Civil Engineering
- Mr. Athanasios CHASALEVRIS - Ass. Prof. School of Mechanical Engineering

The discussion has examined opportunities for professional development, mobility, the competence and adequacy of the teaching staff to guarantee learning outcomes, workload, and the evaluation of the teaching staff by students. The members of the teaching staff have collectively expressed their satisfaction regarding development opportunities and mobility, while the EEAP has identified evidence in the documents provided to the reviewers indicating

that these individuals are competent and capable of delivering high-quality education to the PSP students. Furthermore, the teaching staff is engaged in active and widely recognized research activities that involve students, as evidenced by publications in international scientific journals. A commonly held view among the teaching staff is that the diversity in the initial education of students presents challenges when addressing the goal of equalizing prerequisites that ensure the safe progression of the curriculum. This represents a structural weakness of the PSP, which the teaching staff confronts both collectively and individually; however, it also serves as an advantage regarding the professional integration of graduates, which clarifies why no measures are taken to reduce the diversity in student recruitment. In addition to the existing weaknesses, it is important to note the currently low number of candidates for the PSP, which may ultimately impact its future viability. The teaching staff, along with the director of the PSP, are making efforts to expand the recruitment base through promotional activities aimed at attracting a greater number of candidates. Lastly, the ethnic backgrounds of students do not create issues, as lectures are conducted in English whenever foreign students are present.

The meeting with students of PSP1 aimed at seeking the students' satisfaction with their study experience and the facilities offered by the department, as well as issues concerning student life and welfare. In this meeting, the following individuals participated:

- Ms. Mayley GUITARD (2nd semester, No speaking Greek)
- Ms. Angelika-Karolina ZDUNEK (4th semester)
- Mr. Dimitrios ANESTIS (2nd semester)
- Mr. Nikolaos DALLAS (2nd semester)
- Mr. Leontios KOTROPOULOS (4th semester)
- Ms. Madalina Diana CRAETE (4th semester)
- Mr. Christos LASDAS (4th semester)
- Mr. Georgios MITSIS (2nd semester)
- Mr. Konstantinos BETSIS (2nd semester)
- Mr. Edgar ESCOBAR (No speaking Greek)

The students of this PSP have conveyed a general satisfaction regarding their educational experience, quality of life, and the accessibility of teaching staff for assistance. The EEAP has noted that the connections among students are limited, as collective life activities seem minimal or non-existent. Enhancing relationships among students would bolster educational activities while fostering connections that could benefit their professional lives and ultimately provide advantages to the PSP through a yet-to-be-established alumni society.

The meeting with PSP1 graduates aimed at discussing their experience of their postgraduate studies and their career path. The following individuals were involved:

• Mr. Anastasios PAPADOPOULOS, MSc Computational Mechanics October 2023, PhD candidate, University of Missouri, Columbia, MO, USA

• Mr. Evangelos ANTONIOU, MSc Computational Mechanics October 2017, Tech Sales

Consultant, Dassault Systèmes, Munich, Germany

• Mr. Georgios KISSAS, Dr. MSc Computational Mechanics June 2017, Senior Research Data Scientist, Swiss Data Science Center Zurich, Switzerland

• Ms. Marina KOUTSI, MSc Computational Mechanics February 2023, PhD candidate, Mechanical Engineering, University of Cyprus

• Ms. Kelly LAPOKONSTANTAKI, MSc Computational Mechanics February 2017, Process expert, Boehringer Ingelheim, Greece

• Mr. Nikolaos CHEIMARIOS, Dr. MSc Computational Mechanics February 2008, Associate Manager, Accenture, Greece

• Mr. Christos ZACHAROPOULOS, MSc Computational Mechanics October 2024, Process Engineer, ENOIA, Greece

• Mr. Konstantinos GOUTIS, MSc Computational Mechanics October 2025, Civil Engineer

• Mr. Georgios KALLIAS, MSc Computational Mechanics 2026, Chemical Engineer

• Mr. Alexandros KOULIDIS, MSc Computational Mechanics 2001, Head, Environmental Licensing Directorate, Hellenic Ministry Environment and Energy

Graduates attending this meeting have collectively expressed their satisfaction with the PSP and emphasized their belief that this education has been a crucial success factor in obtaining both current and previous professional roles. Several participants shared examples of how they currently utilize the computational tools they became familiar with during their postgraduate studies. Some of them continue to maintain contact with the PSP faculty and have expressed a desire to actively engage in an alumni association focused on strengthening connections among graduates and enhancing the visibility and reputation of the PSP.

A meeting of the EEAP with employers and social partners of the PSP was programmed from 18:30 to 19.15 with aim to discuss the relations of the PSP with external private or public stakeholders. Participated in this meeting the following individuals:

• Mr. Eftychios KLEINAKIS, Brigadier General (HAF) Director, G1 Directorate (Aircraft & Equipment), Hellenic Air Force General Staff

• Mr. Ioannis KONTOPOULOS, Dr. Electrical Engineer, Director of Research, Academy of Athens

• Mr. Nikos MILIS, Civil Engineer, President of the Central Board, Technical Chamber of Greece (TEE)

• Mr. Michalis STAMATAKIS, Prof. Department of Chemistry, University of Oxford, UK

• Mr. Ioannis CHALKIDIS, Dr. Mechanical Engineer, Director of Software Engineering, BETA CAE Systems, Greece

• Ms. Despoina CHATZIKYRIAKOU, Dr. Mechanical Engineer, Country Manager – Voltico, Belgium, Formerly: Manager, EV New Business Development – Toyota Motor Europe, Belgium

• Ms. Antonia ARISTEIDOPOULOU, Chemical Engineer, Manager, Refining Digital Transformation, HELLENiQ ENERGY, Greece

In their collective assessment, the participants have conveyed their contentment regarding the expertise, efficiency in operations, and employability of graduates who have entered

their respective institutions, along with their favorable evaluation of the PSP. They have stated that they maintain active relationships with the teaching staff and expressed a strong willingness to join an advisory board, if invited, with the aim of contributing to curriculum revisions, establishing collaborative research and development projects with the teaching staff, and enhancing exchanges by providing practical sessions for the PSP students.

Followed a debriefing (19:30 to 20:00), during which EEAP members elaborated a consensus on the main findings of the review and prepared the oral report. Subsequently, the closure meeting of the accreditation review took place, attended by the director of the PSP, the head of department, members of the steering committee, MODIP, and OMEA from 20:00 to 20:30. The agenda for the meeting included points and findings that required further clarification, as well as an informal presentation of the key findings from the EEAP. The following individuals participated in this session:

• Mr. Athanasios ZISIS, Professor, Vice Rector of Academic Affairs and Lifelong education, President of MODIP at NTUA

• Ms. Glykeria KAKALI, Dean and Professor of the School of Chemical Engineering (CHEMENG) at NTUA

• Mr. Andreas BOUDOUVIS, Professor of CHEMENG - NTUA and Director of PSP1

• Ms. Evangelia PAVLATOU, Professor of CHEMENG - NTUA, member of MODIP and Coordinator of OMEA

• Mr. Kyriakos GIANNAKOGLOU, Professor, member of Steering Committee of PSP1, School of Mechanical Engineering

• Mr. Vissarion PAPADOPOULOS, Professor, member of Steering Committee of PSP1, School of Civil Engineering

• Mr. Georgios TSIATAS, Assoc. Professor, member of Steering Committee of PSP1, School of Applied Mathematical and Physical Sciences

• Mr. Michalis KAVOUSANAKIS, Assist. Professor, member of Steering Committee of PSP1, School of Chemical Engineering

• Mr. Emmanouil AGGELOU, Assist. Professor, member of Steering Committee of PSP1, School of Naval Architecture and Marine Engineering

For saving time, the chair of EEAP has conveyed, on behalf of its members, the following: general impression, significant findings, and recommendations:

The committee has very positively appreciated the quality of education offered by the PSP and has evaluated the results through interviews with graduates and social partners/stakeholders. Undoubtedly, the PSP equips the professional realm with individuals who are well-suited to meet its demands by effectively tailoring the curriculum. It is essential to support the PSP in its pursuit of excellence by:

• implementing flexible yet formal periodic curriculum review processes

• increasing attendance

• enhancing communication both internally and with graduates (alumni society) as well as

social partners/stakeholders (advisory board).

III. Postgraduate Study Programme Profile

Brief overview of the postgraduate study programme with reference to the following: history, academic remit, duration of studies, qualification awarded, employment opportunities, orientation challenges or any other key background information. Short description of the home Department and Institution, with reference to student population, campus or any other related facts.

Note: The reader is advised that the information provided below aligns with the document M2.1, included in the PSP proposal for accreditation and has been compiled from the discussions/interviews conducted during the accreditation process.

The School of Chemical Engineering at the National University of Athens, in partnership with the Schools of Applied Mathematics and Physical Sciences, Mechanical Engineering, Civil Engineering, and Naval Architecture and Marine Engineering of the National University of Athens, has resolved to establish and manage the Interdepartmental Postgraduate Studies Program (PSP) in the area of "Computational Mechanics". The program started from the academic year 1998, and has evolved internationally since the academic year 2023-2024. Administrative responsibilities are taken by the School of Chemical Engineering at the National Technical University of Athens.

The minimum duration designated for studies spans three (3) semesters, which may be extended to a maximum of four (4) semesters.

The annual intake of postgraduate students into the PSP is restricted to approximately 25-30, while a cumulative total of 36 students is nowadays present throughout the entire duration of the PSP.

Given the NTUA esteemed status in the global landscape as a renowned public university that fosters science and technology, its PSP "Computational Mechanics" encourages interdisciplinary studies and confers a Postgraduate (PG) Diploma. This diploma is equivalent to a Master of Science degree and serves as a second postgraduate qualification for graduates of continuous 5-year programs, such as engineering. Nevertheless, acquiring the PG diploma does not necessitate holding the undergraduate NTUA Diploma.

Given that interdisciplinarity is a key focus of the PSP in "Computational Mechanics", students who excel are readily able to secure roles in academia, research institutions, and industries. Discussions with alumni, employers, and community partners have substantiated this claim as these have been identified acting in the sectors of (1) industry and services (automotive, construction, chemical, energy, manufacturing, software, consulting), (2) public

(government, ministries, municipalities) and research (PhD, Postdocs in Greece and abroad).

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

• Existence of a Quality Assurance (QA) Policy: The PSP has a documented QA Policy. This policy is part of a multi-layered structure that includes the National Technical University of Athens (NTUA) Institutional QA Policy, a specific policy for the PSP's parent academic unit (School of Chemical Engineering) and the PSP's own operational regulations.

• Content of the QA Policy: The PSP's QA policy document explicitly outlines the program's objectives, which include:

- Enhancing international competitiveness and extroversion.
- Providing high-level, interdisciplinary studies focused on research and addressing multi-faceted problems.
- Developing the research capabilities of graduates to produce new knowledge and innovation.
- Ensuring the quality of education through continuous monitoring, utilizing scientific staff and infrastructure, collaborating with other schools, and engaging with external experts.

• Commitment to Improvement: The policy, related documents and our interactions with administrators and faculty demonstrate a commitment to continuous improvement through several mechanisms:

- Internal and External Evaluation: The School of Chemical Engineering underwent an external evaluation in 2013 and its first external accreditation review in 2021 and this is the first external evaluation of the re-established PSP. Notably, the 2021 departmental accreditation report underlines the program's positive response to prior recommendations.
- Internal Review: The MODIP (Quality Assurance Unit) conducts internal evaluations, producing findings and recommending corrective/preventive actions The PSP is expected to act on these.
- Stakeholder Feedback: Student evaluations are systematically collected and used to improve courses. While the 2021 accreditation report notes the lack of systematic input from external stakeholders (alumni, employers), it also acknowledges the enthusiasm of these groups to be involved. This enthusiasm was also apparent during the present accreditation process.

• Quality Goal Setting and KPIs: The PSP has a formal, documented process for setting annual quality goals using specific Key Performance Indicators (KPIs). The relevant documentation provided includes a comprehensive table of strategic goals, quality objectives, measurements (KPIs), baseline values, target values, actions, responsibilities, and timelines. These include examples pertaining to: Upgrading academic activities e.g. Enhancing internationalization and extroversion & increasing the percentage of students participating in evaluations from 12% to 50% by the end of 2024.

• Communication of Policy and Goals: The QA policy and quality targets are publicly available, and they contain a relevant document that displays "Quality Targets". The 2021 departmental accreditation report notes that the program's website is comprehensive and regularly updated, though it recommends a more active communication strategy (e.g., newsletters) to better engage stakeholders.

• Alignment with National Qualifications Framework: The program is explicitly

designed as a Level 7 qualification according to the National & European Qualifications Network, awarding 90 ECTS (60 for course & 30 for thesis work). The learning outcomes described for the PSP and its individual courses are aimed at this level, focusing on specialized knowledge, critical understanding, research skills, and problem-solving in complex and unpredictable contexts.

II. Analysis

The documentation provided and the committee's communication with administrators and faculty is indicative of a PSP with a well-established and formally documented QA framework. The policy is not just a static statement but is actively implemented through a detailed annual goal-setting process with measurable KPIs, clear responsibilities, and timelines. This structured approach to quality management demonstrates a strong commitment to monitoring performance and driving targeted improvements. The goals are specific, relevant to the program's strategic aims (e.g., internationalization, improving graduation rates), and timely, with a clear end-of-year deadline.

The existence of both internal (MODIP) and external (HAHE) evaluation mechanisms provides a robust system for accountability and continuous improvement. The PSP's documented history of responding to past recommendations, as noted in the 2021 accreditation report, shows that these feedback loops are somewhat effective. The policy's commitment to utilizing scientific staff, collaborating with other schools, and inviting prominent academics for lectures further reinforces its focus on quality.

However, a gap exists between the internal, process-oriented focus of the QA system and a fully outward-looking approach. While the policy mentions responding to the needs of the economy and society, and the 2021 departmental accreditation report strongly recommends formalizing stakeholder input (e.g., via an External Advisory Board), there is inadequate evidence to support that such a mechanism has been fully implemented. The quality goals are predominantly internally focused (graduation rates, website content, student evaluation participation) rather than externally validated by structured employer or alumni feedback. This indicates that while the system is robust for internal quality control, it is not yet fully mature in systematically integrating external stakeholder perspectives into its strategic planning and goal setting. Furthermore, MODIP itself lists weak points such as limited student participation in evaluations and limited tracking of graduate careers, which challenge the PSP's own goals.

III. Conclusions

The PSP "Computational Mechanics" has a comprehensive, formal, and actively managed Quality Assurance system. The QA policy is well-articulated and implemented through a detailed and measurable annual goal-setting process. The program demonstrates a clear commitment to continuous improvement through internal and external evaluations and is aligned with the requirements for a Level

7 qualification. The main area for development, as identified both in the 2021 departmental accreditation report and implicitly in the program's own internal evaluation findings, is to strengthen the systematic integration of external stakeholders (alumni, employers) into the QA process to ensure the program's goals remain fully aligned with the evolving needs of the labor market and society. Despite this, the current system is effective and well-managed.

Panel Judgement

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

Panel Recommendations

To further solidify and enhance adherence to this Principle, the Panel recommends the following additional actions, building upon the findings and previous recommendations:

• Formalize External Stakeholder Input: Establish a formal, structured mechanism for input from external stakeholders (e.g., an External Advisory Board). This body should meet regularly and its feedback should be explicitly integrated into the annual quality goal-setting process, influencing the selection and prioritization of KPIs to ensure they are relevant to the labor market.

• Expand KPIs to Include External Validation: In addition to internal metrics, develop KPIs that measure external impact and perception. This could include, for example, a KPI for the percentage of graduates employed within six months, employer satisfaction ratings (to be gathered via the new advisory board), or the number of industry-partnered thesis projects. This would directly address the weak point of limited graduate career tracking identified by MODIP.

• Enhance Communication of QA Results: While the policy and goals are published, create a more accessible public summary of the annual quality review. This summary could highlight key achievements against the year's goals, showcase improvements made based on student feedback, and outline priorities for the coming year. This would serve as a powerful communication tool to demonstrate and disseminate the PSP’s commitment to excellence and actualize the tangible benefits of the QA system to students, staff, and prospective stakeholders.

PRINCIPLE 2: DESIGN AND APPROVAL OF POSTGRADUATE STUDY PROGRAMMES

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

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

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

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

In addition, the design of PSP must consider:

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

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

Documentation

- *Senate decision for the establishment of the PSP*
- *PSP curriculum structure: courses, course categories, ECTS awarded, expected learning outcomes according to the EQF, internship, mobility opportunities*
- *Labour market data regarding the employment of graduates, international experience in a relevant scientific field*
- *PSP Student Guide*
- *Course and thesis outlines*

- *Teaching staff (name list including of areas of specialisation, its relation to the courses taught, employment relationship, and teaching assignment in hours as well as other teaching commitments in hours)*

Study Programme Compliance

I. Findings

• The PSP in ''Computational Mechanics'' of the National Technical University in Athens was established in its present form in 2024, although post-graduate activities have been present since 1998. The provided material and discussion during the review revealed a PSP curriculum structure covering courses, course categories, ECTS credits, and expected learning outcomes aligned with the EQF level 7. Completion of the PSP programme requires 90 ECTS. The Student Guide and course outlines are well-structured. Also, there is a good link between research and teaching, as documented by publications as a result of students' participation in research activities during their studies and final MS thesis project.

• The provided documentation indicates that the relevant regulatory framework stating the procedures for the institution's approval of the programme is in place.

• The institution's strategy is well-defined. The provided documentation shows sufficient evidence of a continuous self-review process for the programme's key elements, such as the PSP Student Guide, course and thesis outlines, expected learning outcomes, and mobility opportunities via Erasmus and internships.

II. Analysis

• The EEAP noticed that QA practices are implemented periodically. Documents regarding the programme's long-term vision, efforts to further enhance international visibility, policies to strengthen industrial links and outward-looking strategies seem to be in place. The international experience in the relevant fields of teaching and research is well represented via the active research of the participating faculty members.

• Actions toward the continuous development of the PSP are mentioned. However, discussions indicate that the programme's Faculty is not directly involved in reviews and updates of relevant components of the programme.

• The number of enrolled students is relatively low. From discussions with the faculty and students, coursework and thesis project, there is a good link between research and teaching.

• The students are active in research, but their participation in the course/programme evaluation is low, and there is no evidence of students' involvement in periodic programme review.

• There is no external advisory committee, and as a result, there is no input on topics regarding programme revisions as dictated by changes in the relevant scientific domain, social partners and employers in the public and private sectors.

III. Conclusions

• The PSP clearly defines its academic profile and programme orientation, emphasising its research-focused nature, scientific objectives, specific subject domains, and areas of expertise of a level comparable with international standards.
• An advisory board with stakeholders from the labour market, academics, graduates of the programme and social partners to consult on curriculum review and adaptation does not exist.
• The curriculum is good and encompasses topics in the domain of Computational Mechanics. There are efforts to add AI related courses in the curriculum.

Panel Judgement

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

Panel Recommendations

• Define a clear strategy for the promotion of the programme's unique characteristics, future development and growth in the national and international landscape.
• Establish an official external advisory board with sufficient members from industry, academics, social partners and graduates of the programme and involve them in the programme's revisions.
• Promote the active participation of the faculty in the programme's needs, reviews and modifications.
• Involve the students in the programme's reviews and revision.

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

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

Student-centred learning and teaching plays an important role in enhancing students' motivation, their self-evaluation, and their active participation in the learning process. The above entail continuous consideration of the programme's delivery and the assessment of the related outcomes.

The student-centred learning and teaching process

- *respects and attends to the diversity of students and their needs by adopting flexible learning paths*
- *considers and uses different modes of delivery, where appropriate*
- *flexibly uses a variety of pedagogical methods*
- *regularly evaluates and adjusts the modes of delivery and pedagogical methods aiming at improvement*
- *regularly evaluates the quality and effectiveness of teaching, as documented especially through student surveys*
- *strengthens the student's sense of autonomy, while ensuring adequate guidance and support from the teaching staff*
- *promotes mutual respect in the student-teacher relationship*
- *applies appropriate procedures for dealing with the students' complaints*
- *provides counselling and guidance for the preparation of the thesis*

In addition

- *The academic staff are familiar with the existing examination system and methods and are supported in developing their own skills in this field.*
- *The assessment criteria and methods are published in advance. The assessment allows students to demonstrate the extent to which the intended learning outcomes have been achieved. Students are given feedback, which, if necessary is linked to advice on the learning process.*
- *Student assessment is conducted by more than one examiner, where possible.*
- *Assessment is consistent, fairly applied to all students and conducted in accordance with the stated procedures.*
- *A formal procedure for student appeals is in place.*
- *The function of the academic advisor runs smoothly.*

Documentation

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

Study Programme Compliance

I. Findings

• The PSP “Computational Mechanics” is a three-semester programme offering two distinct disciplines: i) solids and ii) fluids. It primarily addresses graduate students in engineering departments, as well as graduates in a related field of study. Graduates of foreign universities, recognized and equivalent to NTUA, are also eligible for admission.
• The Fluids’ curriculum includes four (4) mandatory courses, five (5) elective courses, and the postgraduate thesis. The Solids’ curriculum includes six (6) mandatory courses, one (1) elective compulsory course, two (2) elective courses, and the postgraduate thesis. According to the curriculum guide and interviews with teaching staff, students and graduates, the predominant method of course assessment is written, oral exams and/or assignments. The PSP is offered mainly in Greek but is adapted to English when necessary.
• The PSP has introduced the role of Academic Advisor to enhance student-centred education and improve educational and administrative services. PSP staff provides students with the opportunity to fill in a questionnaire, where students can rate the courses, lecturers, lecture content etc. There is also a regulation governing the handling of student complaints and appeals.

II. Analysis

The curriculum of both disciplines of this PSP includes a range of courses that are oriented to the subject of each discipline, and there is a detailed description of each course. However, students and graduates expressed to EEA Panel their interest in the inclusion of additional basic or introductory courses related to programming languages.

Students were aware of their opportunity to evaluate the PSP courses. However, the number of students who participated in this evaluation was relatively low. Additionally, in some cases, teaching staff ask students at the end of the course about their level of satisfaction and whether the course met their expectations. According to the teaching staff, there is currently no formal or structured mechanism in place for monitoring the career paths of graduates; communication with alumni is mainly maintained through interpersonal relationships between faculty members and former students.

The PSP adopts a student-centered approach that creates a culture of mutual respect. It effectively supports incoming students, creating a warm and engaging learning environment. The "open door" policy is noteworthy. Overall, students and graduates interviewed by the EEA Panel stated their satisfaction with the high-quality education they receive and expressed a high degree of satisfaction with their academic pursuits. The EEA Panel has noted a dynamic and mutually beneficial relationship between students and faculty members.

III. Conclusions

The programme is in accordance with the expectations of Principle 3 regarding student admission, progression, recognition of postgraduate studies, and certification and meets the relevant HAHE standards.

Panel Judgement

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

Panel Recommendations

- Include additional lectures or laboratory courses on programming languages.
- Establish a mechanism for collecting data regarding the career paths of graduates.

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 PSP in Computational Mechanics is designed to provide advanced knowledge in numerical methods and simulations of the response of solids and fluids by balancing theory and applications. In addition to the mandatory courses, students can choose from a range of elective courses relevant to numerical methods and engineering, all built around a rigorous scientific approach and the development of analytical and problem-solving skills. In addition, the students complete a mandatory MS Thesis. The student guide is concise, complete and very well structured.

• The programme sets the ground rules for admission, course work, student progression, thesis requirements, as well as recognition and certification, scientific integrity, independence and researcher responsibility. In addition, it defines the responsibilities of collaborators and academic supervisors, so that research is conducted transparently and ethically.

• Students are expected to follow ethical guidelines throughout their studies. Academic integrity means no plagiarism or cheating in exams. When it comes to research, they need to adhere to ethical principles to ensure their findings are valid and trustworthy.

• According to the PSP study rules, the minimum duration is three academic semesters. The required supporting documents for applying to the programme is provided by the programme. The PSP accepts applications from degree and diploma holders from science and engineering related fields.
• Assessment of performance in courses is conducted through written or oral examinations, assignments, presentations, or a combination of these methods and final defence of the Thesis MS project.

II. Analysis

There is sufficient documentation that accurately describes the required procedures for admission and study in the PSP, the rights and obligations of the students, the assessment requirements, and the completion of their thesis work. In addition, the programme offers opportunities for mobility via Erasmus or internships.

III. Conclusions

The PSP in Computational Mechanics is a good academic program that equips students with specialized knowledge and skills. The admission process is clear and well defined. To complete the program successfully, the student is required to complete a mix of coursework and research. Students take on significant academic and ethical responsibilities, while the program opens up good opportunities for career growth or continuing studies at the PhD level, as evidenced by the students during the discussions with them.

Panel Judgement

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

Panel Recommendations

• The PSP should complete the web page in English.
• The PSP should carry out evaluation from its graduates to help position itself and underline its contribution.

PRINCIPLE 5: TEACHING STAFF OF POSTGRADUATE STUDY PROGRAMMES

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

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

More specifically, the academic unit should set up and follow clear, transparent and fair processes for the recruitment of properly qualified staff for the PSP and offer them conditions of employment that recognise the importance of teaching and research; offer opportunities and promote the professional development of the teaching staff; encourage scholarly activity to strengthen the link between education and research; encourage innovation in teaching methods and the use of new technologies; promote the increase of the volume and quality of the research output within the academic unit; follow quality assurance processes for all staff (with respect to attendance requirements, performance, self-assessment, training, etc.); develop policies to attract highly qualified academic staff.

Documentation

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

Study Programme Compliance

I. Findings

• Recruitment Processes and Criteria: The PSP operates within a clearly defined, transparent, and merit-based framework for recruiting teaching staff. The overarching legal framework (Law 4957/2022) and the program's internal regulations govern this process, that includes:

• Formal Procedures: Recruitment for permanent faculty (DEP) follows the legally mandated process involving department assemblies and national-level announcements, ensuring fairness and objectivity.

Explicit Criteria: The PSP has established supplementary merit-based criteria for selecting its teaching staff, which are documented. These include:

- For DEP members: Scientific competence and relevance of the subject area, relevant experience, research and teaching ability (as evidenced by student

evaluations), international presence, and published work in international journals and conferences.

- For EDIP (Laboratory Teaching Staff): A doctoral degree in a relevant field, published work, and at least two years of post-doctoral teaching experience in a Greek institution of Higher Education.
- For Contracted Instructors: A doctoral degree in a relevant field, the degree of relevance of their subject, the quality and number of publications, research and teaching experience, and international presence.

• Composition and Adequacy of Teaching Staff: The PSP boasts a large and highly qualified teaching staff, drawing from five participating NTUA departments.
List of Staff: A detailed nominal list is provided; It comprises 24 DEP members (Professors and Associate/Assistant Professors), 4 Emeritus Professors, 5 EDIP members, and 14 researchers, for a total of 47 dedicated staff.
High Research Performance: The staff's research performance is exceptionally high as stipulated by a comprehensive analysis based on Scopus data. This reveals:

- A total of 3,224 publications, within 2,348 in scientific journals.
- A total of 70,344 citations.
- High h-indices, with 18 out of 24 DEP members having an h-index above 15, and five members having indices of 38, 40, 41, 48, and 62.
- Seven members are ranked in the top 2% of scientists worldwide by Stanford University.
- One member holds a chair at the Academy of Athens, and another received the Award for Excellence in University Teaching.

• Linking Teaching with Research: The program aims to explicitly link teaching and research. The 2021 departmental accreditation report notes that student exposure to the latest research occurs primarily through the Diploma Thesis, which is supervised by faculty. The high research output of the staff ensures that taught content is guided & informed by cutting-edge developments in the field. The PSP's objectives also include developing graduates' research capabilities to produce new knowledge and innovation.

• Staff Workload and Development

- Workload: The 2021 departmental accreditation report notes that teaching loads appear to exceed the expected minimum by almost 80%, with a substantial standard deviation. This suggests a high and potentially uneven workload, which could impact time for research. However, the specific PSP teaching assignments show a wide range of teaching hours, suggesting some flexibility. The program’s regulations also stipulate that DEP members can be additionally compensated for PSP work, provided they meet their minimum statutory obligations. Despite this stipulation, this is not the case since the PSP has no income from student fees or other means to support this function.
- Professional Development: The PSP supports staff development through several means:

- Participation in research projects.
- Educational leaves.
- Organization of seminars on modern educational methods.
- Engagement with the Teaching and Learning Support Centre for training.

• Mobility: Staff mobility is encouraged. The 2021 departmental accreditation report notes that 8% of the teaching staff is mobile every year through the Erasmus+ program. The PSP's progress report also highlights the intention to further enhance European and international mobility for teaching and staff training through the EULiST European University initiative.

• Staff Evaluation: Teaching staff members are regularly evaluated by students through surveys administered by the MODIP (Quality Assurance Unit). The evaluation process is documented in the PSP's study guide and internal review documents. However, the 2021 accreditation report and the MODIP internal review identify a significant weakness: low student participation rates render the evaluations less meaningful. Furthermore, the 2021 report notes that results are communicated to staff sporadically and lack benchmarking against departmental or university averages.

II. Analysis

The PSP "Computational Mechanics" demonstrates strong compliance in many core areas of Principle 5. It possesses a highly qualified and research-active teaching staff, whose caliber is evidenced by impressive publication and citation metrics and international recognition. The recruitment processes are transparent and guided by a clear, documented set of merit-based criteria. The program actively fosters the link between teaching and research, primarily through the research-oriented Diploma Thesis and by ensuring that faculty are at the forefront of their fields.

Furthermore, there are clear policies and opportunities for professional development and staff mobility, with tangible results in terms of Erasmus+ participation. The institutional framework for student evaluation of teaching is in place.

The primary area of weakness lies not in the absence of a system, but in its effectiveness and implementation. The consistently identified issue of low student participation in teaching evaluations undermines the value of this crucial feedback mechanism. Without robust data, it is difficult for the PSP to accurately assess teaching effectiveness, identify areas for improvement, or make evidence-based decisions on teaching assignments. The sporadic communication of results further diminishes the potential impact of the evaluation process on individual teaching performance and curriculum development. While the PSP has set goals to increase student participation in evaluations, this remains a persistent challenge. If the concern about high and potentially inequitable teaching loads remains

unaddressed, it could also affect staff capacity for research, a cornerstone of the program's quality.

III. Conclusions

Based on the documentation and the committee's findings, the PSP "Computational Mechanics" is substantially compliant with Principle 5. It demonstrates excellence in the quality, qualifications, and research output of its teaching staff. Its recruitment processes are transparent and merit-based, and it provides opportunities for professional development and mobility. The main area for improvement is the implementation and effectiveness of the student evaluation process, which is a critical component of quality assurance for teaching. Addressing the issue of low student participation and ensuring systematic feedback to staff are essential next steps. Additionally, monitoring and managing teaching loads to ensure they are equitable and allow for sustained high-level research would further strengthen the program.

Panel Judgement

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

Panel Recommendations

To further improve adherence to this Principle, the Panel recommends the following actions:

• Implement a Multi-Pronged Strategy to Increase Student Evaluation Participation: Move beyond simply encouraging students. Actions could include:

o Improve Timing and Convenience: Ensure evaluations are completed in class time (e.g., the last 15 minutes of a lecture) using mobile devices, rather than relying on students to do it on their own time.

o Close the Feedback Loop: Publicly demonstrate the value of evaluations. At the start of each course, the instructor could briefly summarize feedback from the previous year and explain any changes made as a result. This shows students that their input has a tangible impact.

• Systematize and Benchmark Evaluation Results: The evaluation results should be systematically processed, benchmarked against school and departmental averages, and formally communicated to each instructor. This feedback should also be reviewed by a faculty peer committee, not just the School Dean, to foster a culture of collective responsibility for teaching quality.

• Formally Articulate and Monitor Faculty Workloads: Develop a clearer framework for articulating annual faculty loads (percentage of effort in teaching, research, and service). This could be used in annual faculty reviews to ensure that teaching responsibilities are balanced

and allow adequate time for the high-quality research that defines the PSP. This would also help ensure equitable distribution of workload across the faculty.

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 LEARING AND STUDENT SUPPORT, AND – ON THE OTHER HAND- FACILITATE DIRECT ACCESS TO THEM BY ESTABLISHING INTERNAL RULES TO THIS END (E.G. LECTURE ROOMS, LABORATORIES, LIBRARIES, NETWORKS, CAREER AND SOCIAL POLICY SERVICES ETC.).

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

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

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

Documentation

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

Study Programme Compliance

I. Findings

The PSP offers a complete support ecosystem that covers learning, research and the daily activities of postgraduate students. Access to the various services is well defined, transparent and documented in the Study Guide and the relevant web pages. However, the relevant documents are provided only in Greek.

Students can access information regarding their study status, course registrations, grades for each course, as well as requests for certificates through the Electronic Secretariat of the NTUA, accessible by students using their credentials. Additionally, the PSP provides the following electronic services to students:

personal electronic account, personal email account, access to the education support system, access to the electronic library, access to the electronic secretariat, course registration and other applications and certificates.

Academic Advisors are allocated to postgraduate students for support with issues related to academic life, their progress towards completing their studies, their career prospects, doctoral studies, etc. Accessibility services support the use of electronic means for accessing textbooks and educational materials, as well as physical accessibility to buildings and infrastructure.

II. Analysis

The number of teaching staff of the PSP is in total 37. In addition to this, the number of permanent administrative staff of the School of Chemical Engineering is 1, whose responsibilities are well defined and clear, and the number of technical staff is 1. The PSP is additionally supported by the members of the Secretariat of the coordinating department (School of Chemical Engineering of NTUA). External partners are also invited to give lectures/seminars.

In terms of learning resources, the PSP is supported by both the coordinating and the participating departments by several facilities, including Room 32 for teaching (accessible to people with disabilities), access to the PC-Lab Computing center, library and information center, access to rooms and laboratories of the NTUA.

It came to the attention of the EEA Panel that some international students may experience difficulties in locating the classrooms and becoming familiar with the procedures related to the postgraduate programme, as information is provided only in Greek or are not provided at all (e.g. information and directions about the location of departments, lecture halls).

Services for students include, but are not limited to, electronic secretarial services, library and information center, academic ID for reduced tickets, electronic mail services, VPN access, and completing online questionnaires.

The PSP has no tuition fees, except for non-EU citizens where there is a 500 € fee per semester. The sources of income for the PSP are limited to the departmental funding, which is used for the needs of PSP, consumables, promotion and advertising expenses, procurement, renewal, and maintenance of equipment and software, and travel expenses. However, the available funding is limited and mainly intended to support essential operational activities, requiring careful allocation of resources to ensure the effective implementation and sustainability of the PSP.

III. Conclusions

The programme is in accordance with the expectations of Principle 6 relative learning resources and student support and meets the relevant HAHE standards.

Panel Judgement

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

Panel Recommendations

To further enhance adherence to Principle 6 the EEA Panel recommends:

• The PSP should take actions in order for all students, both foreign and Greek, to have access to the same information and directions to the locations of lecture rooms and laboratories.

PRINCIPLE 7: INFORMATION MANAGEMENT

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

Institutions are expected to establish and operate an information system for the management and monitoring of data concerning students, teaching staff, course structure and organisation, teaching and provision of services to students.

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

The information collected depends, to some extent, on the type and mission of the Institution. The following are of interest:

- *key performance indicators*
- *student population profile*
- *student progression, success, and drop-out rates*
- *student satisfaction with their programmes*
- *availability of learning resources and student support*

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

Documentation

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

Study Programme Compliance

I. Findings

• The PSP has developed a satisfactory information management system for its current students. There is availability of learning resources and student support. Student progression, success, and dropout rates are monitored. The evaluation of all courses and faculty is conducted at the end of each semester. It is noteworthy that the faculty collaborate with graduate students on research and educational activities.

• Information and data on the performance of the faculty members of the programme are recorded and monitored. The Internal Evaluation Unit and MODIP are mainly responsible for the management of the Quality Assurance associated systems. Key performance indicators (KPIs), such as student retention/progression, completion rates, etc., are satisfied. The graduates' career

path trajectory is not satisfactorily monitored.

II. Analysis

Course/instructor student evaluations are conducted regularly using questionnaires, but the percentage of students who complete them is unsatisfactory. The career paths of graduates are not monitored regularly. Initiatives towards improvement should be considered.

III. Conclusions

The Panel finds that, overall, the programme substantially complies with Principle 7. The PSP collects and analyses data related to Quality Assurance and performs analyses of the collected course evaluation data at the instructor level.

Panel Judgement

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

Panel Recommendations

• The student course/instructor evaluations need further attention. Students must become aware of the importance of the evaluation process so that they can appreciate its significance for improving the programme delivery, thus motivating increased survey participation.

• The career paths of graduates are not monitored systematically. A dedicated alumni portal may be developed to promote post-graduation interactions and facilitate important networking among graduates and further collaborations with the Department and the program. Formation of a formal External Advisory Board is expected to help in this direction.

PRINCIPLE 8: PUBLIC INFORMATION CONCERNING THE POSTGRADUATE STUDY PROGRAMMES

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

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

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

Documentation

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

Study Programme Compliance

I. Findings

The public information for the program is readily accessible via both the university's website https://ntua.gr/el/school/postgraduate-studies and the Department's website https://www.chemeng.ntua.gr/the_postgraduate_courses. At both websites, there is a dedicated segment with a hyperlink redirecting the user to the PSP's independent website. Both a Greek and an English version of the PSP's website are available and user-friendly.

II. Analysis

PSP's website provides valuable information, including details regarding the establishment of the PSP, its objectives, eligibility criteria of the potential applicants, curriculum description. In addition, a thesis repository is publicly available. However, most of the available information is provided only in the Greek version of the website. Examples of material provided only in Greek: the quality assurance policy, quality objectives, regulation of studies, study guide, and international collaborations. Announcements are posted only in the Greek version of the website, although the language used for the announcements is English.

Document M8.2 titled "Dedicated segment on the Department's website for the dissemination of the PSP" provides links to both the Greek and English versions of the PSP website. In addition to this, the link to the Department's website that redirects the user to the PSP's website should also be included in this document. An established procedure for maintenance, renewal and update of the PSP's website is described in document M8.1.

III. Conclusions

There is information about the PSP publicly available. Adjustments are recommended to further enhance compliance with Principle 8 especially the information in English language.

Panel Judgement

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

Panel Recommendations

• The PSP should have the exact same information posted on both Greek and English websites.
• The quality assurance policy, quality objectives, regulation of the academic advisor, regulation of complaint management, coordinating committee, study guide, regulation of research ethics and all relevant to the PSP documents should be available on the website of the PSP (both Greek and English versions)
• M8.2 should be revised and include the relevant information.

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

• Internal evaluations by MODIP have been carried out, and the latest, from 22/1/2024, is available in the documentation.

• The evaluations were based on various data, including the course syllabus, the quality indicators, the student questionnaires, and the PSP's objectives. Regular student course/instructor evaluations of all courses are undertaken every semester, and some statistical data were submitted to the Panel.

II. Analysis

The identified strengths included the interdisciplinary nature of the PSP, the link between theory and practice, the high level of the teaching staff, the high level of research, the internationalisation, the appeal and popularity of the PSP, the

accommodation of the attendance of working students, the high employability of the candidates, and the student-cenetred teaching.

The weaknesses included a decreasing number of teaching staff, bureaucracy, limited infrastructure funding, limited coverage of students' background knowledge, limited use of ERASMUS+, and the absence of monitoring of graduates' careers.

Regular evaluations of the PSP are part of a continuous improvement from the students' and staff's perspectives. We argue for the appointment of an independent External Advisory Board to assess and review all aspects of this PSP, including teaching content/curriculum revision, infrastructure, research agenda, assessments, and student support, and to monitor whether the PSP is up to date. The PSP collects data which it uses to improve. The evaluation surveys by the students and graduates serve as an indirect assessment method for the PSP. Students, graduates, and other stakeholders do not appear to have been directly involved in the decision-making processes for curriculum improvements. Although it is clear that recommendations from MODIP and student evaluations are being acted on, this needs to be made available and communicated to the next student cohort. This will improve transparency and facilitate continuous improvement.

III. Conclusions

Overall, the Panel finds that the PSP is fully compliant with Principle 9. There have been regular internal evaluations by the Institution's MODIP, consistent with regular monitoring, review, and revision of the PSP, to maintain a high level of educational provision through a supportive and effective learning environment. The recommendations below are consistent with the internal review and are intended to facilitate continuous improvement.

Panel Judgement

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

Panel Recommendations

• A list of recommendations proposed by MODIP concerning evaluations should be published on the PSP website.
• The PSP must develop satisfaction surveys for its external stakeholders involved with the programme.
• The PSP should find ways to increase the participation of students and graduates in the satisfaction surveys.
• The PSP should consider developing an External Advisory Board consisting of external stakeholders, graduates, and students in collaboration with the existing teaching staff to assist in the improvement of the programme.

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

Since the PSP's accreditation in 2018, no external evaluation has been conducted. However, the submitted documents included the external evaluation of the undergraduate study programme (22 May 2021), which was judged fully compliant overall. Some points of criticism of the undergraduate programme resonate with the present evaluation. E.g. the requested input from critical constituencies and stakeholders (e.g. alumni and industry).

II. Analysis

The panel has engaged in meaningful discussions with industrial stakeholders, who have expressed their willingness to provide practical training opportunities for PSP students as part of the curriculum. They have also indicated that they are looking forward to more proactive outreach from the PSP's executive board. Stakeholders are prepared to offer employment opportunities to PSP graduates.

III. Conclusions

An “Advisory committee” of stakeholders, employers, and other partners should be established to discuss educational programs and potentially facilitate mutually beneficial exchanges.

Panel Judgement

Principle 10: Regular external evaluation of postgraduate study programmes

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

Panel Recommendations

• The PSP should update its quality assurance policy based on the current recommendations from the Panel.
• A strategic plan spanning five years at the time of accreditation could foster innovative approaches to enhance the quality of the PSP.
• Establishing a committee to assess the PSP's long-term goals for the next 5 to 10 years is essential. This strategic planning should be incorporated into the documentation submitted for any future PSP evaluations.
• The formation of an advisory board that includes stakeholders, employers, and other partners is recommended.

PART C: CONCLUSIONS

I. Features of Good Practice

• The PSP has made considerable efforts to adhere to the standards set for the accreditation review. This is evidenced by the documentation that accompanies the accreditation proposal.
• The PSP has engaged in thorough and formal measures that ensure the effective management of quality assurance procedures. In addition to the written documentation provided, this is further supported by the successful management of the accreditation review.
• The faculty members possess advanced scientific expertise and teaching abilities. The former is demonstrated by the volume of scientific publications in reputable journals, while the latter is reflected in the unanimous satisfaction expressed by students regarding the teaching and the outcomes, which include the ease with which graduates transition into professional life.
• The PSP provides students with both theoretical and practical knowledge that improves their employability and aids in their professional integration.

II. Areas of Weakness

• There is a lack of systematic monitoring of the professional trajectories of graduates.

• While students engage actively in research, their involvement in the evaluation of the course/programme is minimal, and there is no indication of their participation in the periodic review of the programme.

• The collaborative efforts/interactions of faculty members in the regular assessment of the PSP programme are notably weak or entirely absent.

• The public promotion of the PSP is inadequate.

• The absence of an external advisory committee results in a lack of input concerning programme revisions that should be informed by developments in the relevant scientific field, as well as feedback from social partners and employers in both the public and private sectors.

III. Recommendations for Follow-up Actions

• Formalize the input from external stakeholders and broaden the key performance indicators to encompass external validation.

• Enhance the communication of quality assurance outcomes.

• Develop a clear strategy to promote the unique features of the program, as well as its future development and growth within both national and international contexts.

• Create an official external advisory board comprising adequate members from industry, academia, social partners, and program alumni, and engage them in the program's revisions.

• Encourage active faculty participation in addressing the program's needs, reviews, and modifications. Incorporate student involvement in the program's reviews and revisions.

• Establish a system for gathering data on the career trajectories of graduates.

• Implement a comprehensive strategy to boost student participation in evaluations.

• Create awards recognizing excellence in scientific research and teaching for faculty members.

• Set annual fees that will fully support the needs of the PSP, along with stipends for students who are unable to afford costs based on their academic performance.

IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are:

1, 3, 4, 6, 9, 10

The Principles where substantial compliance has been achieved are:

2, 5, 7, 8

The Principles where partial compliance has been achieved are:

None

The Principles where failure of compliance was identified are:

None

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

The members of the External Evaluation & Accreditation Panel

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