



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
HELLENIC REPUBLIC



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Accreditation Report
for the New Undergraduate Study Programme in
operation (Integrated Master) of:

Mechanical Engineering

Institution: Hellenic Mediterranean University

Date: 4 February 2023



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



Report of the Panel appointed by the HAHE to undertake the review of the New Undergraduate Study Programme in operation (Integrated Master) of **Mechanical Engineering** of the **Hellenic Mediterranean University** for the purposes of granting accreditation

TABLE OF CONTENTS

Part A: Background and Context of the Review	4
I. The External Evaluation & Accreditation Panel.....	4
II. Review Procedure and Documentation	5
III. New Undergraduate Study Programme in operation Profile.....	8
Part B: Compliance with the Principles	10
Principle 1: Strategic Planning, Feasibility and Sustainability of the Academic Unit.....	10
Principle 2: Quality Assurance Policy of the Institution and the Academic Unit.....	16
Principle 3: Design, Approval and Monitoring of the Quality of the New Undergraduate Programmes.....	19
Principle 4: Student-centred Approach in Learning, Teaching and Assessment of Students.....	22
Principle 5: Student Admission, Progression, Recognition of Academic Qualifications and Award of Degrees and Certificates of Competence of the New Study Programmes.....	25
Principle 6: Ensuring the Competence and High Quality of the Teaching Staff of the New Undergraduate Study Programmes	28
Principle 7: Learning Resources and Student Support of the New Undergraduate Programmes...	31
Principle 8: Collection, Analysis and Use of Information for the Organisation and Operation of New Undergraduate Programmes	34
Principle 9: Public Information Concerning the New Undergraduate Programmes	36
Principle 10: Periodic Internal Review of the New Study Programmes.....	38
Principle 11: Regular External Evaluation and Accreditation of the New Undergraduate Programmes.....	40
Principle 12: Monitoring the Transition from Previous Undergraduate Study Programmes to the New Ones.....	42
Part C: Conclusions	44
I. Features of Good Practice	44
II. Areas of Weakness	44
III. Recommendations for Follow-up Actions	44
IV. Summary & Overall Assessment	46

PART A: BACKGROUND AND CONTEXT OF THE REVIEW

I. The External Evaluation & Accreditation Panel

The Panel responsible for the Accreditation Review of the new undergraduate study programme in operation (Integrated Master) of **Mechanical Engineering** of the **Hellenic Mediterranean University** comprised the following four (4) members, drawn from the HAHE Register, in accordance with Laws 4009/2011 & 4653/2020:

- 1. Prof. Konstantinos Salonitis (Chair)**
Cranfield University, United Kingdom

- 2. Dr Fivos Andritsos**
European Commission, Joint Research Centre, Ispra, Italy

- 3. Prof. Emeritus George K. Haritos**
The University of Akron, United States of America

- 4. Ms Spyridoula Leventaki**
Student of Production Engineering and Management, Technical University of Crete, Chania, Greece

II. Review Procedure and Documentation

The External Evaluation & Accreditation review of the Integrated Master Programme of **Mechanical Engineering** of the **Hellenic Mediterranean University** was undertaken on January 30 through February 04, 2023. The members of the External Evaluation and Accreditation Panel (which will be referred to as “Panel” in the remaining of the present report) were **Prof. Konstantinos Salonitis** (chair), **Dr. Fivos Andritsos**, **Prof. Emeritus George K. Haritos**, and **Ms. Spyridoula Leventaki**.

The Panel received several documents from both the University and the Hellenic Authority for Higher Education (HAHE) in advance. Thirty two (32) documents were reviewed by the Panel prior to the first meeting, including the accreditation proposal and supporting documents.

The Panel exchanged several emails before assembling for the first meeting to discuss possible allocation of roles and decide areas for each member to focus during the meetings with the department’s stakeholders.

The Panel met for the first time on Monday, 30 January 2023 at the Ibis Styles Heraklion Central hotel for a pre-visit discussion. The Panel briefly introduced themselves, discussed the documents included in the department’s accreditation proposal, and agreed on the allocation of tasks.

The onsite visit was conducted as per the HAHE proposed agenda schedule on January 30 and 31, 2023. During the first day, three members of the panel attended the meeting physically, whereas Ms Leventaki joined through ZOOM. For the second day, all members of the panel attended the meetings physically.

Day 1:

The Panel met initially with the Vice Rector of Academic and Student Affairs (who is also the head of the University’s Quality Assurance Unit - MODIP), Prof. F Mavromatakis and the head of the Department of Mechanical Engineering, Prof. G. Kavoulakis. In the meeting, an overview of the programme was presented by Prof. G. Kavoulakis, including the history, academic profile, current status, strengths, and possible areas of concern.

The subsequent session was with the department’s Quality Assurance team (OMEA) and MODIP representatives. Present were the representatives from MODIP team: Prof. F. Mavromatakis, Prof. E. Drakakis, Mr. A. Anastaskis and Mrs. K. Davini and the OMEA team: Prof. E. Kavvousanos, Assoc. Prof. P. Polygerinos, Assoc. Prof. E. Tzounis, and Assist. Prof. N. Papadakis. In the meeting the degree of compliance of the programme to the Quality Standards for Accreditation was discussed. Prof. Mavromatakis presented the department’s view and preparation for the accreditation, focusing on the study program, faculty and staff, student body, and research activities.

The following session was with a sample of the department’s students, in various phases of their studies. Eight (8) students attended the meeting. The objective of the meeting was to

discuss the students' study experiences at both the university and the department. The students were pleased with the quality of the studies and forthcoming with their experiences. They were very positive on their relationship with the academic staff. They highlighted areas of concern such as the student workload.

The final session of the day was with employers and social partners. Four (4) external stakeholders from the private and public sector attended the meeting, with two (2) joining via ZOOM and two (2) physically joining the team in the meeting room. Mr V. Georgoudakis (Chief Technical Officer, Mechatron Sun Energy and alumnus of the department), Mr. P. Lagios (Chief Technical Officer, Gizelis Robotics SA and alumnus of the department), Mr J. Melas (Technical Director, Plastika Kritis), and Mrs. C. Daskalaki (Deputy Head of General Directorate, Region of Crete) discussed openly with the Panel. The external stakeholders highlighted the need for the department to maintain the positive aspects and benefits that the previous academic status of the department entailed, such as the practical aspect of the work.

The first day of the interviews was completed with a short debriefing meeting with only the Panel present, discussing the initial impressions, the key findings and the plan for the second day of the visit.

Day 2:

During the second day of the visit, the Panel had two sessions in the morning and two in the afternoon. The first session in the morning was with teaching staff. The Panel met in total with nine (9) faculty members, namely: Prof. D. Christakis, Prof. D. Katsaprakakis, Prof. N. Sakkas, Prof. N. Vidakis, Assoc. Prof. M. Petousis, Assist. Prof. C. Condaxakis, Assist. Prof. J. Fasoulas, Assist. Prof. A. Moutsopoulou and Assist. Prof. K. Tzirakis. The Panel had the opportunity to discuss with the teaching staff professional development opportunities, mobility, workload, student evaluations; competence and adequacy of the teaching staff to ensure learning outcomes; link between teaching and research; teaching staff's involvement in applied research, projects and research activities directly related to the programme; possible areas of weakness. Unanimously, the faculty members highlighted the need for resolving the professional rights issue that all graduates of the department are facing. The common perception is that once the graduates have secured professional rights, the department will be able to attract students with higher entry exam marks.

The next session was focused on the Panel visiting several facilities in the premises of the university. The Panel had the chance to visit classrooms and lecture halls, several research labs that the students are undertaking their lab exercises and thesis projects, as well as computer rooms. The Panel also visited the university's library and the sports hall. Finally, the panel was able to visit the accommodation halls. The accommodation halls have been recently built and are of high quality, however the available rooms are not enough to cover the needs of the student population.

The final two sessions in the afternoon were with OMEA and MODIP to address any lingering questions and, finally, with the Department Head and the Vice Rector along with the OMEA and MODIP members where additional questions were addressed, and a quick summary of the preliminary conclusions from the visit were presented.

Overall, the visit was very well organized and presented. All faculty were well informed on the aim of the accreditation and eager to provide detailed and specific answers to questions. Both students and employers were also happy to share their experiences and respond to direct questions. The Panel would like to acknowledge the great collaboration with all the University's and department's members of staff and specifically Mrs. Kalliopi Divini who provided everything requested by the Panel almost instantaneously.

III. New Undergraduate Study Programme in operation Profile

The Mechanical Engineering Department of the Hellenic Mediterranean University was established as the succession of the respective department of the Technological Education Institution (ATEI) of Crete. ATEIs were reorganized into universities back in 2019. The Mechanical Engineering department thus was established in September 2019, with its predecessor operating for approximately fifty years. The key milestones in its history include:

- 1983: evolution into a TEI Department with a three-year study programme;
- 2002: integration into Higher Education with a new 4-year study curriculum (evolution to ATEI status);
- 2008: evaluation by an external evaluation committee;
- 2012: introduction of Master's Degree programmes;
- 2019: evolution to an engineering department of the newly established Hellenic Mediterranean University offering five-year study programs, and the introduction of a Ph.D. program.

The Mechanical Engineering undergraduate study programme is a five-year integrated Master's programme whose development was based in the four-year respective programme offered by ATEI of Crete. The students of the 5-year program are required to complete a total of 58 courses (40 compulsory core courses delivered during the first 6 semesters and 18 electives) along with the completion of the Diploma Thesis. The program has an equivalency of 300 ECTS (270 from the completion of the courses and 30 from the diploma thesis). Currently, there is no practical training required, although it is an optional element offered to the students and supported by the faculty. Students are required to follow a specific specialization during the last two years of study and can customize the program and their elective courses in one of the three available specialization areas. The three specialization areas are: "manufacturing", "energy" and "robotics/mechatronics".

The department has prepared a detailed Curriculum Guide to ensure that students understand the program. In addition, course syllabi for all courses taught are available in the web page of the Department (although only in Greek language). Students are given the opportunity to evaluate the courses they attend, and their input is considered in adjusting course content and delivery aspects.

The first students entered the Department in September 2019 and the first graduates are expected to graduate in 2024. Currently, the department has 328 registered students in the new study programme, as well as 1283 students from the previous (old) study programme (ATEI Mechanical Engineering).

There are currently 17 faculty members that support the educational and research activities of the program. There are three additional faculty posts advertised. To accomplish the educational requirements of the program, the Department employs an additional adjunct part-time lecturer, who cover specific courses and provide the required lectures as well as one full

time tutor. A visiting professor from overseas is also appointed. The labs are supported by four technicians, and the students are supported by three administrative staff.

The department's faculty has a reasonable number of publications and research activities, both in projects and funds. The department's faculty takes great pride in having five members listed in the Stanford University global list that represents the top 2% of Scientists in various disciplines.

Graduates of the program currently are not allowed to become members of the Hellenic Technical Chamber (TEE), and as such they lack engineering professional rights.

PART B: COMPLIANCE WITH THE PRINCIPLES

Principle 1: Strategic Planning, Feasibility and Sustainability of the Academic Unit.

Institutions must have developed an appropriate strategy for the establishment and operation of new academic units and the provision of new undergraduate study programmes. This strategy should be documented by specific feasibility and sustainability studies.

By decision of the institutional Senate, the Institutions should address in their strategy issues related to their academic structure in academic units and study programmes, which support the profile, the vision, the mission, and the strategic goal setting of the Institution, within a specific time frame. The strategy of the Institution should articulate the potential benefits, weaknesses, opportunities or risks from the operation of new academic units and study programmes, and plan all the necessary actions towards the achievement of their goals.

The strategy of their academic structure should be documented by specific feasibility and sustainability studies, especially for new academic units and new study programmes.

More specifically, the feasibility study of the new undergraduate study programmes should be accompanied by a four-year business plan to meet specific needs in infrastructure, services, human resources, procedures, financial resources, and management systems.

During the evaluation of the Institutions and their individual academic units in terms of meeting the criteria for the organisation of undergraduate study programmes, particular attention must be placed upon:

a. The academic profile and the mission of the academic unit

The profile and mission of the department should be specified. The scientific field of the department should be included in the internationally established scientific fields of Higher Education, as they are designated by the international categorisation of scientific fields in education, by UNESCO (ISCED 2013).

b. The strategy of the Institution for its academic development

The academic development strategy for the operation of the department and the new study programme should be set out. This strategy should result from the investigation of the factors that influence the studies and the research in the scientific field, the investigation of the institutional, economic, developmental, and social parameters that apply in the external environment of the Institution, as well as the possibilities and capabilities that exist within the internal environment (as reflected in a SWOT Analysis: strengths, weaknesses, opportunities, and threats). This specific analysis should demonstrate the reason for selecting the scientific field of the new department.

c. The documentation of the feasibility of the operation of the department and the study programme

The feasibility of the operation of the new department should be justified based on:

- *the needs of the national and regional economy (economic sectors, employment, supply-demand, expected academic and professional qualifications)*
- *comparison with other national and international study programmes of the same scientific field*
- *the state-of-the-art developments*

- *the existing academic map; the differentiation of the proposed department from the already existing ones needs to be analysed, in addition to the implications of the current image of the academic map in the specific scientific field.*

d. The documentation of the sustainability of the new department

Mention must be made to the infrastructure, human resources, funding perspective, services, and all other available resources in terms of:

- *educational and research facilities (buildings, rooms, laboratories, equipment, etc.)*
- *staff (existing and new, by category, specialty, rank and laboratory). A distinct five-year plan is required, documenting the commitment of the School and of the Institution for filling in the necessary faculty positions to cover at least the entire pre-defined core curriculum*
- *funding (funding possibility from public or non-public sources)*
- *services (central, departmental / student support, digital, administrative, etc.)*

e. The structure of studies

The structure of the studies should be briefly presented, namely:

- **The organisation of studies:** *The courses and the categories to which they belong; the distribution of the courses into semesters; the alignment of the courses with the European Credit Transfer System (ECTS).*
- **Learning process:** *Documentation must be provided as to how the student-centered approach is ensured (modes of teaching and evaluation of students beyond the traditional methods).*
- **Learning outcomes:** *Knowledge, skills and competences acquired by graduates, as well as the professional rights awarded must be mentioned.*

f. The number of admitted students

- *The proposed number of admitted students over a five-year period should be specified.*
- *Any similar departments in other HEIs with the possibility of student transfers from / to the proposed department should be mentioned.*

g. Postgraduate studies and research

- *It is necessary to indicate research priorities in the scientific field, the opportunities for interdisciplinary research, the challenges towards new knowledge, possible research collaborations, etc.*
- *In addition, the postgraduate and doctoral programmes offered by the academic unit, the research projects performed, and the research performance of the faculty members should be mentioned.*

Relevant documentation

- *Introductory Report by the Quality Assurance Unit (QAU) addressing the above points with the necessary documentation*
- *Updated Strategic Plan of the Institution that will include its proposed academic reconstruction, in view of the planned operation of new department(s) (incl. updated SWOT analysis at institutional level)*
- *Feasibility and sustainability studies for the establishment and operation of the new academic unit and the new study programme*
- *Four-year business plan*

Study Programme Compliance

I. Findings

All the documents provided by the Department are of very high quality, well-structured and are very well supported by all necessary documentation.

All presentations were of high quality and the Panel is of the opinion that both the academic and the support staff perform adequately in their functions and are highly motivated. This applies across all points from (a) to (f) above.

This fact was reflected also in the meetings with the students and the external stakeholders, who underlined the preparation, openness, and availability of the Department's academic and support staff.

The Department, due to its transition history, initially from TEI to ATEI and, recently, to the AEI status, is particularly sensitive in what regards the compliance of its offered undergraduate program to the international standards and to the effective equivalence to the rest of the Mechanical Engineering study offerings in Greece (i.e., NTUA, Patras etc.).

The Department's new integrated master's programme is in line with the internationally established scientific fields of Higher Education (such as UNESCO ISCED 2013) and is comparable to the longer standing mechanical engineering departments (NTUA, Patras etc.).

The Department's strategic plan addresses the proposed academic reconstruction in view of the new study programme while an appropriate SWOT analysis deals with the potential benefits, limitations, opportunities, and risks.

A feasibility and sustainability study, based on projections of trends of the market and the technological developments addresses quite well the related goals and objectives.

A 4-year plan addresses in a comprehensive way issues regarding the operation of the Department, including critical items like the projected number students and staff, funding, and infrastructure.

II. Analysis

The Panel was positively impressed by the relevant documents furnished by the department and the presentations given during the meetings. It cannot but praise the considerable effort put forth, especially considering that this is on top of their normal duties.

All Principle 1 points (a to f) are adequately addressed in the documentation provided as per the HAHE requirements. The Panel confirms the full compliance of the Department in points a, c, d, e, f and g.

The Department is substantially compliant in point b on the *Strategy of the Institution for its academic development*. Indeed, the Department's transition history and specificities, as well as its strive to ensure equivalence and equal professional rights for its alumni with other well-established Mechanical Engineering academic units, have hindered the establishment and the subsequent public projection of a Department 'identity'. In fact, such an identity is missing from the otherwise excellent Department's strategic and planning documents. This is evident in point (a) and, in particular, point (b), where the Department is limited to generic goals and

fails to build on potential opportunities offered by its history, location and regional character of the Mediterranean University. Nevertheless, as it was revealed during the discussions with the academic staff and the visits to the laboratories, the Department has strong links with the territory and the local economy; it would have thus been quite straightforward to derive a strong and convincing identity that could potentially attract better students, more funding and more research and development opportunities.

HAHE should consider the inclusion of some guidelines that would encourage the academic units to document and project their identities, unique characteristics, or specificities.

III. Conclusions

As per the above findings and analysis, the Panel is of the opinion that the Department is fully compliant with Principle 1, with a strong recommendation towards the establishment and the projection of a ME-HMU 'identity' based on its 'technological' history, its location, and its 'Mediterranean' character.

Panel Judgement

Principle 1: Strategic planning, feasibility and sustainability of the academic unit	
a. The academic profile and the mission of the academic unit	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	
b. The strategy of the Institution for its academic development	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	
c. The documentation of the feasibility of the operation of the department and the study programme	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	
d. The documentation of the sustainability of the new department	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	
e. The structure of studies	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	
f. The number of admitted students	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	
g. Postgraduate studies	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Principle 1: Strategic planning, feasibility and sustainability of the academic unit (overall)	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

R1.1 – The Department should leverage its ‘technological’ legacy, its academic transition experience, its strong links to the territory and the local community and economy in order to establish its own identity, in line with the Mediterranean character of the University.

R1.2 – Such an identity should constitute, along with the generic academic and educational goals, the cornerstone for its planning and its strategic development. Aims and objectives should be adapted accordingly, building on its unique strengths, and exploiting the opportunities offered.

R1.3 – The department should reconsider the rather excessive number of available courses offered to students with an eye to reduce the number.

Principle 2: Quality Assurance Policy of the Institution and the Academic Unit.

The Institution should have in place an accredited Internal Quality Assurance System, and should formulate and apply a Quality Assurance Policy, which is part of its strategy, specialises in the operation of the new academic units and the new study programmes, and is accompanied by annual quality assurance goals for the continuous development and improvement of the academic units and the study programmes.

The quality assurance policy of the Institution must be formulated in the form of a published statement, which is implemented by all stakeholders. It focuses on the achievement of special annual quality goals related to the quality assurance of the new study programme offered by the academic unit. In order to implement this policy, the Institution, among others, commits itself to put into practice quality procedures that will demonstrate: the adequacy and quality of the academic unit's resources; the suitability of the structure and organisation of the curriculum; the appropriateness of the qualifications of the teaching staff; the quality of support services of the academic unit and its staffing with appropriate administrative personnel. The Institution also commits itself to conduct an annual internal evaluation of the new undergraduate programme (UGP), realised by the Internal Evaluation Group (IEG) in collaboration with the Quality Assurance Unit (QAU) of the Institution.

The quality assurance policy of the academic unit includes its commitment to implement quality procedures that will demonstrate: a) the adequacy of the structure and organisation of the curriculum, b) the pursuit of learning outcomes and qualifications in accordance with the European and National Qualifications Framework for Higher Education, c) the promotion of the quality and effectiveness of the teaching work, d) the adequacy of the qualifications of the teaching staff, e) the promotion of the quality and quantity of the research work of the members of the academic unit, f) the ways of linking teaching with research, g) the level of demand for graduates' qualifications in the labour market, h) the quality of support services, such as administration, libraries and student care, i) the implementation of an annual review and audit of the quality assurance system of the UGP through the cooperation of the Internal Evaluation Group (IEG) with the Quality Assurance Unit (QAU) of the Institution.

Relevant documentation

- *Revised Quality Assurance Policy of the Institution*
- *Quality Assurance Policy of the academic unit*
- *Quality target setting of the Institution and the academic unit (utilising the S.M.A.R.T. methodology)*

Study Programme Compliance

I. Findings

The Department has in place an adequate QA policy and procedures. However, the fact that the Department is, in its current form, very new, with no graduates of the integrated masters' program, does not allow the Panel to evaluate the effectiveness of the study program evaluation and revision.

The Department promotes the evaluation of each course as well as that of the academic staff giving the course. The student participation to these procedures is relatively low.

The documents on QA policy and QA goals are complete and of high quality. Provided samples of evaluation questionnaires seem adequate. There is a special procedure / service for dealing with eventual complaints.

The student body seems quite satisfied with the availability and openness of the academic staff, as also highlighted during the interviews with the students. Their prime concern has to do with the excessive workload due to the rather large number of courses required for graduation.

Unfortunately, as is the case in almost all Greek academic units, there is no organised alumni tracking system. There are ad-hoc connections and feedback from prominent/successful alumni, but these cannot substitute a methodical alumni career tracking.

II. Analysis

The Department fulfils all HAHE QA requirements regarding the evaluation of the courses, labs, and faculty. All due procedures and mechanisms are in place and function quite well, are very well documented and are communicated to all interested parties. Goal sets regarding the Department's new undergraduate programme are relevant, measurable and cover well the teaching methods and the student satisfaction.

The actual effectiveness of all these procedures and measures, especially those regarding the program revision, cannot be verified due to the very short period of the Department's operation under its new integrated master status. The same is true for the learning outcomes. There are no integrated master graduates to track and evaluate. All the examples of professional excellency presented referred to graduates from the old TEI or ATEI regime.

III. Conclusions

As per the above findings and analysis, the Panel is of the opinion that the Department, is fully compliant with Principle 2. All the HAHE required measures, metrics and procedures are in place.

It is recommended that the Department, along with HMU and the rest of the higher education institutions, act towards the tracking and monitoring of their alumni. This operation must be assisted by HAHE, given that alumni professional performance is by far the most important quality indicator on the overall performance of any academic unit. The prime reason of existence of all academic units is the academic formation of the incoming students towards educated, responsible and motivated professionals.

Panel Judgement

Principle 2: Quality assurance policy of the Institution and the academic unit	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

R2.1 – It is recommended that the Department, assisted by the University, establish a mechanism of more systematic tracking of the professional performance of its alumni.

Principle 3: Design, Approval and Monitoring of the Quality of the New Undergraduate Programmes.

Institutions should design the new undergraduate programmes following a defined written process, which will involve the participants, information sources and the approval committees for the programme. The objectives, the expected learning outcomes, the intended professional qualifications and the ways to achieve them are set out in the programme design. The above details, as well as information on the programme's structure, are published in the Student Guide.

The Institutions develop their new undergraduate study programmes, following a well-defined procedure. The academic profile, the identity and orientation of the programme, the objectives, the subject areas, the structure and organisation, the expected learning outcomes and the intended professional qualifications according to the European and National Qualifications Framework for Higher Education are described at this stage. An important new element in the structure of the programmes is the introduction of courses for the acquisition of digital skills. The above components should be taken into consideration and constitute the subject of the programme design, which, among other things, should include: elements of the Institution's strategy, labour market data and employment prospects of graduates, smooth progression of students throughout the stages of the programme, the anticipated student workload according to the European Credit Transfer and Accumulation System (ECTS), the option of providing work experience to the students, the linking of teaching and research, the international experience in study programmes of similar disciplines, the relevant regulatory framework, and the official procedure for the approval of the programme 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 Quality Assurance Unit (QAU).

Relevant documentation

- *Senate decision for the establishment of the UGP*
- *Curriculum structure: courses, course categories (including courses for the acquisition of digital skills), ECTS awarded, expected learning outcomes according to the EQF, internship, mobility opportunities.*
- *Labour market data regarding the employment of graduates, international experience in a related scientific field.*
- *Student Guide*
- *Course outlines*
- *Teaching staff (list of areas of specialisation, its relation to the courses taught, employment relationship)*
- *QAU minutes for the internal evaluation of the new study programme and its compliance with the Standards*

Study Programme Compliance

I. Findings

The new 5-year programme and its curriculum is properly designed and is based on appropriate commonly accepted standards regarding the education of mechanical engineers in Greece and abroad. The factors considered include current local and universal societal trends (i.e., green energy) as well as the technological advances and the forecasts for the market demands concerning the mechanical engineering profession. All these standards and factors are well documented and are supported by a feasibility study based primarily on the current staff and equipment potential.

The study program is well articulated around a core of mechanical engineering competences, complemented by several facultative topics, organised along three specialisation directions: (1) manufacturing, (2) energy and (3) robotics / mechatronics.

As per Principle 2 above, the Department has in place an adequate QA policy and procedures that allow for the approval, evaluation and, eventually, revision of the program. The department has strong relations with some relevant external stakeholders who, theoretically, could contribute to such evaluations or revisions.

The student guide is concise, complete, and very well written.

II. Analysis

The Department fulfils all HAHE requirements regarding the design, approval, and monitoring of the quality of the new undergraduate program. All due procedures and mechanisms are in place and are well documented, although their actual effectiveness cannot be verified due to the very short period of operation under the new integrated master status.

Several research/educational laboratories within the department are examples of excellence both in terms of the hands-on formation of the students and in terms of links with the local economy and society.

The student to staff ratio is quite high (51.0). Faculty have the required qualifications for fulfilling their role. Most importantly, as per the Panel's impression from the visits and meetings, the staff appears to be motivated and, above all, devoted in their primary goal of educating good and responsible engineers.

On the contrary, the number of laboratory support staff is low, with only four (4) technicians employed. The Department claims that this gap is filled from the academic staff as well as the students doing laboratory projects, theses, or practical exercises.

III. Conclusions

As per the above findings and analysis, the Panel is of the opinion that the Department, is fully compliant with Principle 3. All HAHE requirements are met while the Department's academic

program is at par, if not better, than most of the longer-established mechanical engineering departments.

Panel Judgement

Principle 3: Design, approval and monitoring of the quality of the new undergraduate programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

The External Evaluation & Accreditation Panel agrees that this Programme leads to a Level 7 Qualification according to the National & European Qualifications Network (Integrated Master)	YES	NO*
	X	

Panel Recommendations

R3.1 – Reinforce the technical aspects of the curriculum, further promoting the practical exercises.

Principle 4: Student-centred Approach in Learning, Teaching and Assessment of Students.

The academic unit should ensure that the new undergraduate programmes are delivered in a way that encourages students to take an active role in creating the learning process. The assessment methods should reflect this approach.

In the implementation of student-centered learning and teaching, the academic unit:

- ✓ *respects and attends to the diversity of students and their needs, enabling 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 application of pedagogical methods aiming at improvement*
- ✓ *regularly evaluates the quality and effectiveness of teaching, as documented especially through student surveys*
- ✓ *reinforces 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 students' complaints*

Relevant documentation

- *Questionnaires for assessment by the students*
- *Regulation for dealing with students' complaints and appeals*
- *Regulation for the function of the academic advisor*
- *Reference to the planned teaching modes and assessment methods*

Study Programme Compliance

I. Findings

The Panel found an abundance of evidence that both the teaching staff and the Chair of the Department at the HMU are fully committed to creating an environment wherein student-centred learning, teaching, and assessment can flourish. The Panel was impressed by the enthusiasm and commitment displayed by the Chair and the teaching staff to empower student learning. In each course, the teaching staff combined available method(s) for delivering the course materials, such as lectures, laboratory sessions, printed notes, electronic means, etc., so that each student can select those that work best for her/him to optimize learning.

When asked about the quality of instruction and the commitment of the teaching staff to their learning, the interviewed students' responses were invariably very positive. Also, the Panel found that there exists excellent rapport between the students and the teaching staff which underlines the mutual respect that characterizes their relationship. Students also offered that it was easy to approach the teaching staff when they had questions before or after class and that they could also email or call them to arrange meetings for assistance on any issues they wanted to raise. On the rare occasions that they needed to speak with the Department Chair, they found they had easy access to him and that he was attentive and helpful.

Overall, the Panel found that the Department promotes and maintains a positive organizational climate that results in excellent rapport between the students, the teaching staff, and the administrative staff which underlines the mutual respect that is evident throughout.

II. Analysis

The Panel determined that the students are well aware of grade components and assessment methods for each class as those are published in advance and are included in the syllabus, and that these are applied fairly to all students.

All students are encouraged to develop individual skills. In certain classes, the teaching staff assign projects to small groups of students. This encourages them to work together and helps them develop several soft skills which will help them succeed in their professional careers: teamwork, communication, leadership, public speaking, are just a few examples of such skills.

The students are provided the opportunity to evaluate for each of their classes both the quality and usefulness of the course contents and the effectiveness of the instruction by the teaching staff via electronically conducted course evaluation surveys near the end of each semester. On average, the statistics presented indicate that the students regularly rate the department teaching staff as highly effective – 4's or higher on a scale of 5. However, the percentage of students completing these surveys is low – estimated at 20% of the enrolled students.

All entering students are assigned an academic advisor and are made aware of an existing formal process for student appeals and complaints, along with a considerable amount of general useful information about the university, buildings, and facilities. All interviewed students complimented the completeness and usefulness of information on the Department's web page. The students indicated that appeals/complaints are almost invariably considered and/or resolved within the Department – typically by the appropriate faculty member or, in certain cases, by the Head of the Department.

There is no formally organized tutoring program. A few faculty members offer tutoring sessions which students attend voluntarily, mostly to address certain entering students' inadequate background in mathematics. In general, students seek assistance from the faculty teaching each course.

III. Conclusions

In conclusion, the Panel has determined that the new undergraduate program in the Department is student-centred, and cultivates and promotes mutual respect between the students, the faculty, and the administrative staff. Students believe that they have sufficient freedom to plan their academic path and express their appreciation for the support they receive from the faculty, the Chair of the Department, and from the administrative staff. Certain small continuous improvement adjustments can be easily applied and are to be expected in new academic programs.

The Panel finds that this new undergraduate program is in full compliance with Principle 4.

Panel Judgement

Principle 4: Student-centred approach in learning, teaching and assessment of students	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

R4.1 – Encourage teaching staff to pursue additional opportunities for establishing long-term partnerships with industry, especially those likely to employ future graduating students and seek practical training opportunities for current students.

R4.2 – Whenever feasible, create opportunities for students to gain additional hands-on experience and soft skills by including class projects to be carried out by small groups of students. Assign to such projects an appropriate portion of the course’s final grade to incentivize participation.

R4.3 – Identify underprepared entering students and assist them with formally organized, optional remedial courses, tutoring, and the like, so that they become competitive in their classes.

Principle 5: Student Admission, Progression, Recognition of Academic Qualifications and Award of Degrees and Certificates of Competence of the New Study Programmes

Academic units should develop and apply published regulations addressing all aspects and phases of studies of the programme (admission, progression, recognition and degree award).

All the issues from the beginning to the end of studies should be governed by the internal regulations of the academic units. Indicatively:

- ✓ *the registration procedure of the admitted students and the necessary documents - according to the law - and the support of the newly admitted students*
- ✓ *student rights and obligations, and monitoring of student progression*
- ✓ *internship issues, granting of scholarships*
- ✓ *the procedures and terms for writing the thesis (diploma or degree)*
- ✓ *the procedure of award and recognition of degrees, the duration of studies, the conditions for progression and assurance of the progress of students in their studies*

as well as

- ✓ *the terms and conditions for enhancing student mobility*

Appropriate recognition procedures rely on relevant academic practice for recognition of credits among various European academic departments and Institutions in line with the principles of the Lisbon Convention on the Recognition of Qualifications concerning Higher Education in the European Region. Graduation represents the culmination of the students' study period. Students need to receive documentation explaining the qualification gained, including achieved learning outcomes, and the context, level, content and status of the studies that were pursued and successfully completed (Diploma Supplement).

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

Relevant documentation

- *Internal regulation for the operation of the new study programme*
- *Regulation of studies, internship, mobility and student assignments*
- *Printed Diploma Supplement*

Certificate from the President of the academic unit that the diploma supplement is awarded to all graduates without exception together with the degree or the certificate of completion of studies

Study Programme Compliance

I. Findings

The Panel found that the Department has developed and published regulations which address all aspects of students' admission, progression, recognition, and degree/certification award. The students are provided with useful information pertaining to their studies, academic life, the University, Department, available facilities - including the sports facilities and available

housing - and about the surrounding community. They are also advised to stay updated through the website and the program study guide. The program study guide includes detailed information about the goals and structure of the program. Each entering student is assigned an academic advisor who is a member of the Department teaching staff.

Each student's progress is continuously monitored through written and/or oral examinations, grading of laboratory reports, quizzes, and of other assigned projects. The program follows the ECTS credit system which is applied across the course curriculum and supports the students' recognition and certification, as well as it facilitates their possible mobility.

Student mobility is encouraged via the ERASMUS program although, to date, the number of participating students in this Program is small. One of the main reasons for this low level of participation appears to be the COVID-19 pandemic. The Program has hosted ERASMUS students in the past and has designated several courses that can be delivered in English. MOUs with several EU universities are in place.

Aside from the ERASMUS program, there are other similar programs in place that the Department participates in and through which student mobility can be exercised. Examples include the ATHENA European University, the Science Café, as well other Universities both in Greece and Abroad.

Graduating students will be issued both Diplomas and Certificates in both Greek and English.

With regards to the set of quality requirements for implementation of the thesis and the thesis handbook: the most senior students in the Program entered their 4th year this Fall; therefore, the Department continues preparing these requirements.

II. Analysis

The Department has put in place a clear process for students to register and graduate through the study program.

Students can select courses based on their student year (up to the authorized number of ECTS units) but first they need to register for any courses from previous years which they have not completed successfully. On occasion, this requirement creates some scheduling problems, but the Panel agrees that it is appropriate as it ensures that students have acquired the knowledge necessary for successfully completing higher level courses on each subject.

As outlined in the student guide, the students' overall progress toward degree completion is to be formally monitored by their academic advisor.

There are published requirements as to the expected frequency of meetings of students with their academic advisors. The duties of the academic advisor include the creation and update of each student's personal information record and written comments as to his/her progress each semester. Academic advisors are asked to meet with each advisee twice each semester – the first early in the semester and the second after the semester examinations are completed.

III. Conclusions

The Panel concludes that the Department has developed, published, and is fully committed to managing, administering, and applying all regulations that pertain to all aspects of students' admission, progression, recognition, and degree/certification award. The Department Chair, the teaching staff, and the administrative staff have worked tirelessly and effectively during a very demanding transition period and are commended for bringing this new undergraduate program forward in an exceptional and timely manner.

The Panel also found that HMU's central administration has provided an excellent level of support to this new program whenever required. This support is applauded and necessary, especially during this highly demanding transition period.

The Panel finds the Department in full compliance with Principle 5.

Panel Judgement

Principle 5: Student admission, progression, recognition of academic qualifications, and award of degrees and certificates of competence of the new study programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

R5.1 – Clarify the graduates' professional engineering rights as soon as feasible. This is deemed imperative for boosting the morale of present students and attracting future ones.

R5.2 – Engage additional local public and private organizations which may be interested in offering opportunities for practical training to the students.

R5.3 – Encourage and facilitate student mobility via existing Programs such as ERASMUS, ATHENA, and others.

Principle 6: Ensuring the Competence and High Quality of the Teaching Staff of the New Undergraduate Study Programmes

Institutions should assure themselves of the competence, the level of knowledge and skills of the teaching staff of the academic units, 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, the appropriate staff-student ratio, the suitable categories of staff, the appropriate subject areas and specialisations, 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 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 members (with respect to attendance requirements, performance, self-assessment, training, etc.); develop policies to attract highly qualified academic staff.

Relevant documentation

- *Procedures and criteria for teaching staff recruitment*
- *Regulations or employment contracts, and obligations of the teaching staff*
- *Policy for staff recruitment, support and development*
- *Performance of the teaching staff in scientific-research and teaching work, also based on internationally recognised systems of scientific evaluation (e.g., Google Scholar, Scopus, etc.)*

Study Programme Compliance

I. Findings

The department of Mechanical Engineering employs currently 17 academics: 7 full professors, 3 associate professors, 6 assistant professors and 1 lecturer. Additionally, these academics and the programme is supported by 1 teaching staff (ΕΔΙΠ), 4 technicians (ΕΤΕΠ) and 3 administrators. Finally, 1 visiting professor from Örebro, Sweden regularly visits the department. The faculty is responsible for two undergraduate study programmes (the new one under accreditation as well as the legacy one from when the department was part of the ATEI), two post graduate programmes and a research programme (PhD). As highlighted in the accreditation proposal report (report B1, chapter 6), the teaching workload for the faculty ranges from 6 to 9.5 hours per week (average 6.7 hrs/week). The average student to teacher ratio is 51 (Report B9, Quality metric D4.48), however this includes both undergraduate programmes. The visit and the interview with both the faculty and the students, indicated that all teaching staff are committed and passionate about their role. Furthermore, the quality of teaching is very good, as highlighted by the students during the interviews.

The procedures and criteria for teaching staff recruitment are clearly defined by the relevant Greek government regulations and legislation. It was highlighted during the interviews, that the department chooses to advertise “open” calls for new members of staff, allowing for recruitment of competent new academics in interesting state of the art areas. Currently, there are 3 more academic posts open for recruitment, which will further enhance the quality of the teaching staff.

Research wise, the department faculty is participating in several research council funded projects, both from national and European funding bodies. These projects have allowed for the recruitment of 4 post-doctoral research fellows. Five faculty members are listed in the Stanford University global list that represents the top 2% of Scientists in various disciplines. The department only recently (2019) was allowed to recruit PhD students (associated with the evolution of the ATEI to a university) and has already enrolled 17 PhD students.

The opportunities for continuing education and professional development are supported by the University’s senior management. There are available funds for attending conferences and ERASMUS programs is supported and promoted. As highlighted in the accreditation proposal report (report B1), academics are supported to take sabbaticals, teaching and research paid leaves as foreseen by the Greek legislation.

II. Analysis

The good quality of the academic staff has been reflected in the impressively positive response of the students but also in the positive assessment by the employers of the graduates.

The department is supported by the University’s senior management by allocating more academic posts to the department. The number of academics in the faculty is considered sustainable, even though average student to teacher ratio is high. This figure is expected to drop in the following years, as more of the legacy ATEI study programme will conclude their studies.

The Panel questioned the availability of training courses on pedagogy/andragogy and new learning methods for both well-experienced and even more importantly for new academics. Although there is support for inducting new academics in platforms such as the *e-study*, there is not a formal training on developing lecturing and supervision skills that are tailored to the needs of the learners (the students).

Gender equality in the teaching staff is also a concern, with only one faculty member being female.

III. Conclusions

The Panel has found that the program is fully compliant with this principle.

Panel Judgement

Principle 6: Ensuring the competence and high quality of the teaching staff of the new undergraduate study programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

R6.1 – The department should aim to further reduce the student to teacher ratio. Alternatively, the Department should develop a more accurate and reflective metric, taking into consideration the number of students who are not active or engaged with the study programme.

R6.2 – The department should set a clear and unambiguous strategy to promote gender equality and attract more female teaching staff members. This will allow developing a safer and healthier work environment and society.

R6.3 – Enhancement of faculty member practices on pedagogy and andragogy methods for higher education through seminars and workshops.

Principle 7: Learning Resources and Student Support of the New Undergraduate Programmes

Institutions should have adequate funding to meet the needs for the operation of the academic unit and the new study programme as well as the means to cover all their teaching and learning needs. 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, boarding, career and social policy services, etc.).

Institutions and their academic units must have sufficient resources, on a planned and long-term basis, to support learning and academic activity in general, in order to offer students the best possible level of studies. The above means include facilities such as, the necessary general and specific libraries and possibilities for access to electronic databases, study rooms, educational and scientific equipment, information 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. Students should be informed about 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.

Relevant documentation

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

Study Programme Compliance

I. Findings

The Panel has determined that all facilities allocated to the Department are very well maintained and equipped and have the required capacity for the execution of the Department's academic mission. There is an adequate number of fully equipped classrooms and auditoriums, laboratories, and e-Learning facilities, faculty, and administrative offices, all housed in eight major buildings of good proximity to each other. There are two buildings with three large auditoriums (total capacity 710 seats), one building housing several classrooms and an e-classroom, ranging in capacity from 40 to 96 seats, one office building which houses faculty and administrative offices, and four other buildings housing the Department's laboratories and additional offices. The Panel visited all of these buildings and were well impressed by both the size of the laboratories and the modern and well-maintained testing and experimental equipment housed within. There is also substantial IT support throughout,

thus meeting the needs of both students and faculty. Moreover, most of these areas are accessible by students with disabilities.

There is a broad variety of support services and facilities managed and operated by the University, all available to the students and listed on the Department's web site. Among them a library with significant holdings, a large indoor sports hall, a cultural centre, the student dining facility, a medical clinic, career counselling, a student welfare office, and a modern student housing complex (however only able to house 250 students), to name a few.

All entering students are assigned an academic advisor and are made aware of an existing formal process for student appeals and complaints, along with a considerable amount of general useful information about the university, buildings, facilities, and the local area. All entering students are assigned an academic advisor during their first semester on campus. Students are also informed about all available services during their first semester.

II. Analysis

Overall, as stated above, there is an adequate number of well-equipped and maintained facilities, rationally allocated by the University to the Department, so it can carry out its academic mission.

There appears to be a sufficient number of administrative staff to support the current number of students. Also, the students interviewed were satisfied by the administrative support they receive.

The students appear to be well informed regarding all of the available University services listed above. It should be added that all of the facilities and offices that students use/visit are within easy walking reach.

There is a continuing need for additional laboratory technical support staff, and for adequate resources for the needed maintenance and periodic modernization/update of laboratory equipment, laptop computers, and the like.

III. Conclusions

In conclusion, the Panel has found that the Department has been provided with sufficient and well-equipped facilities – classrooms, laboratories, office space - to ensure a high-quality teaching and learning environment for the new undergraduate program.

The Panel finds that the new HMU ME program is in full compliance with this Principle.

Panel Judgement

Principle 7: Learning resources and student support of the new undergraduate programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

R7.1 – Plan for and secure a stream of resources for all required maintenance and timely update of facilities and laboratories, as well as adding laboratory technicians, as this is essential for the continued adequate support of student learning and for the continuation and expansion of research activities.

Principle 8: Collection, Analysis and Use of Information for the Organisation and Operation of New Undergraduate Programmes

The Institutions and their academic units bear full responsibility for collecting, analysing and using information, aimed at the efficient management of undergraduate programmes of study and related activities, in an integrated, effective and easily accessible way.

Effective procedures for collecting and analysing information on the operation of Institutions, academic units and study programmes feed data into the internal quality assurance system. The following data is of interest: key performance indicators for the student body profile, student progression, success and drop-out rates, student satisfaction with the programme, availability of learning resources and student support. The completion of the fields of National Information System for Quality Assurance in Higher Education (NISQA) should be correct and complete with the exception of the fields that concern graduates in which a null value is registered.

Relevant documentation

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

Study Programme Compliance

I. Findings

The accreditation proposal and the onsite visit proved that the department has an established and reliable online information technology platform (named: *Φοιτητολόγιο*) to collect and process data associated with the students' academic progress.

Course feedback is collected anonymously online at the end of each semester through a questionnaire that assesses the course itself, the associated teaching staff, their teaching methodology and materials used, the effort they put and the level of course difficulty (the department submitted a questionnaire template – document B16). These are conducted and analysed by the OMEA, and the teaching staff can access the results for their course after the posting of the grades.

The course evaluation is completed and summarized by semester. MODIP collects the annual reports from the Department's OMEA and discusses the weaknesses and the improvement of the program with the Department's chair. This information is used both internally and externally to the department (to be discussed in the following Principle 9).

The Department does not collect information regarding the career paths of its graduates (alumni).

II. Analysis

Both the proposal folder and the interviews with students and faculty proved that the processes in place for collecting, analysing, and using the information are well established and implemented. As the interviews with the faculty indicated, the results and comments are seriously considered, however there does not seem to exist a formal process for reporting on changes implemented because of the feedback received.

It was also emphasized that a very small percentage of the student body participate in these course evaluations. This is related to the relatively small percentage of students attending the lectures.

III. Conclusions

The institution has established the appropriate procedures to collect and analyse the available data with the intention to ensure its proper function and growth. The Panel finds the Department in full compliance with this principle. Efforts to increase response rate of the course evaluations are recommended.

Panel Judgement

Principle 8: Collection, analysis and use of information for the organisation and operation of new undergraduate programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

R8.1 – Improve participation rates in course evaluation surveys by conducting them in the classroom during lecture times.

R8.2 – Establish an online platform for collecting alumni updates and keep in touch with past graduates.

R8.3 – Establish a process for reporting how the results of the questionnaires have been addressed and implemented by faculty.

R8.4 – It is recommended that the Department, assisted by the University, establish a mechanism of more systematic tracking of the professional performance of its alumni (also stated in R2.1).

Principle 9: Public Information Concerning the New Undergraduate Programmes

Institutions and academic units should publish information about their teaching and academic activities in a direct and readily accessible way. The relevant information should be up-to-date, clear and objective.

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 new undergraduate programmes they offer, the intended learning outcomes, the degrees awarded, the teaching, learning and assessment procedures used, the pass rates and the learning opportunities available to their students. Information is also provided, to the extent possible, on graduate employment perspectives.

Relevant documentation

- *Dedicated segment on the website of the department for the promotion of the new study programme*
- *Bilingual version of the website of the academic unit with complete, clear and objective information*
- *Provision for website maintenance and updating*

Study Programme Compliance

I. Findings

The Department's website is comprehensive, contains basic information about the department but there is need for a process that will allow its continuous updating. The website provides recent news and events. Much of the information that is needed for both potential and existing students can be found in university's website. However, many pages of the department's website are not translated in English and a number of webpages are not available in both languages.

II. Analysis

The Department's website does contain the staff's CVs, the structure of the department, the new undergraduate study programme, the external evaluation report in both English and Greek languages. The course outlines are fully described in Greek, but not in English.

There is not enough information regarding public transportation neither in the university's nor in the department's website. Accommodation information can be found in university's website, although this is expected as accommodation is managed centrally. The campus map can be found in both websites.

The Policy for Quality Assurance is available online in the department's website. On the website, the External Evaluation Report from the department's previous status as ATEI department is also uploaded.

Also, attached files like the “Policy of Quality”, the “Quality’s Manual”, the “Ethics Code and Good Practice”, the “Quality Targeting” and some files of “HMU’s Policies and Strategies”, cannot be found in the English version, and therefore, are not available to be read.

There are certain sections in website that are out of date and not translated in English but are easily accessible and clear.

The department does not have dedicated social media websites (such as in Facebook or YouTube). The university as a whole do have social media presence, which is continuously updated with information on events, study updates, and announcements.

III. Conclusions

The department’s website is under construction and requires more work as to keep it up to date. Also, the Department needs to collect and analyse information with regards the alumni (as highlighted in previous principles as well). Finally, the department should be more active in disseminating publicly their strengths, research outputs and achievements. This could be achieved by stronger presence in both digital and physical media.

Panel Judgement

Principle 9: Public information concerning the new undergraduate programmes	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

R9.1 – The websites should be fully translated in English and be updated with the missing and/or incomplete information.

R9.2 – The department should have more presence in public media to attract more students (domestic and foreign).

R9.3 – Statistics about alumni’s career progress shall be collected and shown in Mech. Engineering’s website, in order to show the students what expectations, they shall have after graduation.

Principle 10: Periodic Internal Review of the New Study Programmes

Institutions and academic units should have in place an internal quality assurance system, for the audit and annual internal review of their new programmes, so as to achieve the objectives set for them, through monitoring and amendments, with a view to continuous improvement. Any actions taken in the above context, should be communicated to all parties concerned.

Regular monitoring, review and revision of the new 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: the content of the programme in the light of the latest research in the given discipline, thus ensuring that the programme is up to date; the changing needs of society; the students' workload, progression and completion; the effectiveness of the procedures for the assessment of students; the students' expectations, needs and satisfaction in relation to the programme; the learning environment, support services, and their fitness for purpose for the programme. 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.

Relevant documentation

- *Procedure for the re-evaluation, redefinition and updating of the curriculum*
- *Procedure for mitigating weaknesses and upgrading the structure of the UGP and the learning process*
- *Feedback processes on strategy implementation and quality targeting of the new UGP and relevant decision-making processes (students, external stakeholders)*
- *Results of the annual internal evaluation of the study programme by the QAU and the relevant minutes*

Study Programme Compliance

I. Findings

According to the accreditation proposal (report B1), the internal evaluation takes place annually, in association with the MODIP and OMEA, resulting into a detailed report. The process for completing the internal evaluation is well defined, with clear roles identified for all the members of the team. The internal evaluation is based on a set of clearly defined metrics that are monitored annually. After the approval of the evaluation report by the Department's general assembly, and then sent to MODIP.

II. Analysis

The teaching staff was very passionate about their expertise and was willing to improve the department and university's performance in all the metrics set in the reports B9 and B8 respectively. Also, the evaluations of the students via the e-class platform, which take place every semester, are taken seriously by the teaching staff. Generally, the academics are trying to be close to the students, in order to help them and themselves to evolve. The new undergraduate program is, also, under consideration so as to be more student-friendly.

III. Conclusions

The Department meets the HAHE criteria and the teaching staff and the members of OMEA and MODIP do their best to take actions and address the feedback received. Therefore, the Panel finds the Department fully compliant with the principle 10.

Panel Judgement

Principle 10: Periodic internal review of the new study programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

None.

Principle 11: Regular External Evaluation and Accreditation of the New Undergraduate Programmes

The new undergraduate study programmes should regularly undergo evaluation by panels of external experts set by HAHE, aiming at accreditation. The results of the external evaluation and accreditation are used for the continuous improvement of the Institutions, academic units and study programmes. The term of validity of the accreditation is determined by HAHE.

HAHE is responsible for administrating the programme accreditation process which is realised as an external evaluation procedure and implemented by a panel of independent experts. HAHE grants accreditation of programmes, based on the Reports submitted by the panels, with a specific term of validity, following to which revision is required. The accreditation of the quality of the programmes acts as a means of verification of the compliance of the programme with 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.

Relevant documentation

- *Progress report on the results from the utilisation of the recommendations of the external evaluation of the Institution and of the IQAS Accreditation Report.*

Study Programme Compliance

I. Findings

The present external evaluation of the new undergraduate program in Mechanical Engineering is the first one conducted. As such, since no prior external evaluation recommendations exist, no determination can be made as to whether the department has considered them and implemented them.

The Department has established a well thought out, comprehensive process for reviewing the findings and recommendations of future external evaluations. It is outlined in Section B19, under Article 27, Part B.

This process starts when the Official External Evaluation Report is received by the Department. The report is then examined and analysed by OMEA. Once this review is completed, OMEA proposes at the Department Faculty Meeting appropriate actions for the resolution of the negative points outlined in the External Evaluation Report with specific timeline and also proposes mechanisms for the continuous improvement of the New Undergraduate Program. The Department Chair and Faculty then decides the way forward including the mechanism and action plan for improving the new program.

It should be noted that within the materials prepared prior to the present external evaluation and sent to the members of the Panel, there was an information memo from HAHE dated 04/05/2022 noting that they (HAHE) found that HMU ME was only “partially responsive” or

“non-responsive” with regard to five of the submitted Sections, namely B2, B4, B9, B25, and B28.

II. Analysis

All preparations made and coordinated by HMU, MODIP, and the Chair, Faculty, OMEA, and Staff of ME Department prior to the arrival of our Panel were meticulous, leaving no doubt that they consider this first external evaluation very important to the further development and success of this new undergraduate program. The impression the Panel formed prior to the visit was strongly reinforced during the discussions, presentations, and walk-through visits and informal presentations at laboratories, classrooms, lecture halls, and library available to the students and faculty and staff of HMU ME.

The Panel was also pleased to note the high level of interest displayed by the participation in most meetings and presentations as well as through comments offered by senior officers of the University – Vice Rector, Chair of MODIP, and others.

All of the above, as well as many formal and informal interactions with faculty, staff, and students demonstrated to our Panel the excellent organizational climate that is in place at the University, as well as the high level of collegiality that is clearly evident between the Chair, faculty, staff, and students in the ME Department and the new program.

III. Conclusions

It is the hope of the Panel that its recommendations will be considered carefully, and those that can be implemented will be incorporated subject to the resources that become available to the HMU ME Department.

Panel Judgement

Principle 11: Regular external evaluation and accreditation of the new undergraduate programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

None.

Principle 12: Monitoring the Transition from Previous Undergraduate Study Programmes to the New Ones

Institutions and academic units apply procedures for the transition from previously existing undergraduate study programmes to new ones, in order to ensure compliance with the requirements of the Standards.

Institutions should implement procedures for the transition from former UGPs to new ones, in order to ensure their compliance with the requirements of the Standards. More specifically, the institution and the academic unit must have a) the necessary learning resources, b) appropriate teaching staff, c) structured curriculum (courses, ECTS, learning outcomes), d) study regulations, award of diploma and diploma supplement, and e) system of data collection and use, with particular reference to the data of the graduates of the pre-existing UGP. In this context, the Institutions and the academic units prepare a plan for the foreseen transition period of the existing UGP until its completion, the costs caused to the Institution by its operation as well as possible measures and proposals for its smooth delivery and termination. This planning includes data on the transition and subsequent progression of students in the respective new UGP of the academic unit, as well as the specific graduation forecast for students enrolled under the previous status.

Relevant documentation

- *The planning of the Institution for the foreseen transition period, the operating costs and the specific measures or proposals for the smooth implementation and completion of the programme*
- *The study regulations, template for the degree and the diploma supplement*
- *Name list of teaching staff, status, subject and the course they teach / examine*
- *Report of Quality Assurance Unit (QAU) on the progress of the transition and the degree of completion of the programme. In the case of UGP of a former Technological Educational Institution (TEI), the report must include a specific reference to how the internship was implemented*

Study Programme Compliance

I. Findings

The Department's OMEA has drafted a report on the transition period of the pre-existing 4-yr undergraduate programme, including provisions until its formal completion on the 2021-22 academic year. Students who have not manage to complete their study program on time are offered the opportunity to either use the old course teaching material through the *e-class* platform or follow live the corresponding new courses.

Provisions are in place for the compulsory practical training foreseen under the old ATEI status through a dedicated *practical exercise service*.

A procedure exists through which students who have completed their old ATEI program can get the new 5-yr integrated master's degree through the completion of a number (20+) of courses. This represents quite an additional workload and, consequently, not many students chose to follow it.

II. Analysis

The Department has already experienced a transition from the TEI to the ATEI status; this has helped a lot towards implementing the new transition as smoothly as possible, taking care of the ATEI-regime student needs and, at the same time, minimising the required excess workload for the faculty and support staff.

Apparently, the problem of continuing financing the compulsory practical exercises of the old ATEI students is being tackled successfully by a special service on a case-by-case base.

The transitional mixed regime is expected to last for several more years, until the last ATEI student graduates. However, according to the Departments statistics, it is expected that the bulk of the ATEI regime enrolled students will have graduated within the next 2 years.

III. Conclusions

As per the above findings and analysis, the Panel is of the opinion that the Department, is fully compliant with Principle 12. The Department, also because of its previous experience, manages well also this transition.

The Panel is of the opinion that the number of the additional courses required from the ATEI students to be enrolled to the new program is somewhat excessive and that is probably due to the fear of not being judged as equivalent to the Greek longer standing mechanical engineering institutions.

Panel Judgement

Principle 12: Monitoring the transition from previous undergraduate study programmes to the new ones	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

None.

PART C: CONCLUSIONS

I. Features of Good Practice

- Transition experience (TEI->ATEI->AEI); good adaptability to changes.
- Established quality assurance process.
- Positive atmosphere in the department.
- Highly motivated faculty.
- High quality research outputs.
- Hands-on education and training.
- Academic advisors appointed for each first-year student.
- Institutional participation in the Athena University/network.
- High quality recently upgraded laboratories.
- Very good appointment process (“open calls”).
- Recently established industrial advisory board.
- Indications of good engagement with the local industry and community, which however should be rolled out to all the members of staff.

II. Areas of Weakness

- Department’s strategy and planning are very well written but too generic; lack of any local, regional or Mediterranean identity / character.
- Department’s strengths, like ties to territory and local economy, good laboratories etc. are not projected/mapped into its strategy and planning.
- Relatively low student entry marks.
- Large number of offered courses.
- Low student lecture attendance.
- Low student feedback surveys participation.
- Low number of laboratory support staff.
- High students/staff ratio.
- Department does not systematically monitor and track alumni professional progression.
- Gender equality: small number of female faculty employed in department.

III. Recommendations for Follow-up Actions

- Strategic planning and future development of the department should be aligned to ‘Mediterranean’ character of the university and, in particular, the insular / Cretan context.
- Build on the strengths and the specificities of the Institution, exploit opportunities, and prepare for the foreseeable threats.
- Establish an alumni office at Department or University level and devise creative ways on how to best track the alumni professional development.
- Introduce a series of seminars to be delivered from external lecturers / industry representatives on the profession of a mechanical engineer and the latest developments.

- Enhancement of faculty member teaching practices on pedagogy and andragogy methods.
- Consider ways of increasing the update of student feedback surveys.
- Contribute towards a council/forum for the Heads of Mechanical Engineering and other related Departments from all over Greece, to tackle issues of commonalities and complementarities.

IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are: **1, 2, 3, 4, 5, 6, 7, 8, 10, 11, and 12.**

The Principles where substantial compliance has been achieved are: **9.**

The Principles where partial compliance has been achieved are: **None.**

The Principles where failure of compliance was identified are: **None.**

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

The External Evaluation & Accreditation Panel agrees that this Programme leads to a Level 7 Qualification according to the National & European Qualifications Network (Integrated Master)	YES	NO
	X	

The members of the External Evaluation & Accreditation Panel

Name and Surname

Signature

- 1. Prof. Konstantinos Salonitis (Chair)**
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