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

Rural and Surveying Engineering
Institution: Aristotle University of Thessaloniki
Date: 12 June 2021

Ευρωπαϊκή Ένωση
Ευρωπαϊκό Κοινωνικό Ταμείο

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

ΕΣΠΑ 2014-2020

enqa.

Report of the Panel appointed by the HAHE to undertake the review of the Undergraduate Study Programme (Integrated Master) in **Rural and Surveying Engineering** of the **Aristotle University of Thessaloniki** 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 Undergraduate Study Programme (Integrated Master) in **Rural and Surveying Engineering** of the **Aristotle University of Thessaloniki** comprised the following five (5) members, drawn from the HAHE Register, in accordance with Laws 4009/2011 & 4653/2020:

1. **Prof. Emmanuel Stefanakis (Chair)**
   University of Calgary, Canada

2. **Prof. Peggy Agouris**
   William & Mary, USA

3. **Prof. Costas Armenakis**
   York University, Canada

4. **Prof. Diofantos Hadjimitsis**
   Cyprus University of Technology, Cyprus

5. **Mr. Georgios Tsakoumis**
   Member of the Technical Chamber of Greece, Greece

II. Review Procedure and Documentation

The panel was invited to conduct the study programme review on 25 May 2021. Most of the review material was made available on 4 June 2021. The package included the HAHE guidelines and forms, the quality indicators of the undergraduate programme in review, material submitted by the School of Rural and Surveying Engineering, and the proposal of the programme academic accreditation with all relevant appendices. The panel members attended the HAHE's orientation meeting on 31 May 2021.

On 8 June 2021, the panel first met with the Vice-Rector/President of MODIP and the Head of the School of Rural and Surveying Engineering followed by a meeting with OMEA members and MODIP members.

On 9 June 2021, the panel first met with members of the Teaching Staff. Then, the panel met with 10 Students followed by an online tour and discussion with members of the Administrative Staff and members of the Teaching Staff. The panel also met with Graduates of the programme.

On 10 June 2021, the panel met with Employers and Social Partners and then with OMEA and MODIP members, as well as with the Vice Rector/President of MODIP and the Head of the School of Rural and Surveying Engineering.

On 11-12 June 2021, the panel convened to write the Accreditation Report.

All meetings were held virtually (via Zoom video conferencing s/w application).

All sessions included a constructive discussion with all attendees and the input collected along with the accreditation documents have been used by the panel to complete this accreditation report.

The External Evaluation and Accreditation Panel (EAAP) has found the accreditation materials to be extensive, well-documented and very comprehensive. The same observations apply to the presentations of the programme by Head Tsoulis and Prof. Vergos.

III. Study Programme Profile

The School's curriculum aims to cover the scientific and technical activities of Rural and Surveying Engineers, Greece's production and development goals, as well as future prospects in those areas. It aims at providing students with the necessary scientific and technological education that will enable them to perform satisfactorily in a chosen (specific) area of Rural and Surveying Engineering. The curriculum covers the three Departments ("Tomeis") of the School:

- Department I: Geodesy and Surveying;
- Department II: Cadastre, Photogrammetry and Cartography; and
- Department III: Transportation and Hydraulic Engineering.

The duration of studies is 5 years (i.e. 10 semesters, with the 10th semester dedicated to the diploma thesis).

The School (''Tmima'') currently has 24 faculty members (3 women and 21 men). Department I has 12 faculty members, Department II has 6 faculty members, and Department III has 6 faculty members.

A total of 118 courses are offered. The total number of courses required for the completion of studies is 56 courses plus the Thesis (about 6 courses per semester, 12 courses per academic year). Of those courses, 41 are core (mandatory) courses and 15 are electives. Electives are chosen from a pool of 62 courses and represent 24% (1/4) of the available electives.

In recent years, an average of 110 students are admitted annually to the programme, and approximately 70 students graduate from it. Currently there are about 980 students registered in the School.

The objectives of the curriculum were based on the aims of the School as set by the legislature, the assessment of earlier curricula, and current scientific and technological standards and developments. Emphasis was given to the introduction of geoinformation science and technology courses in the curriculum. Both faculty members and students participated in the process. Also, the professional association of Rural and Surveying Engineers and the sister School at the National Technical University of Athens were consulted.

The last major revision of the curriculum took place in 2005 followed by periodic revisions (including one after the external evaluation in 2014). Currently there is an initiative underway to reassess the strategic objectives and character of the School, leading also to the development of a new undergraduate curriculum.

PART B: COMPLIANCE WITH THE PRINCIPLES

Principle 1: Academic Unit Policy for Quality Assurance

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 ALL INSTITUTION'S AREAS OF ACTIVITY, AND PARTICULARLY AT THE FULFILMENT OF QUALITY REQUIREMENTS OF UNDERGRADUATE PROGRAMMES. THIS POLICY SHOULD BE PUBLISHED AND IMPLEMENTED BY ALL STAKEHOLDERS.

The quality assurance policy of the academic unit is in line with the Institutional policy on quality, and is included in a published statement that is implemented by all stakeholders. It focuses on the achievement of special objectives related to the quality assurance of study programmes offered by the academic unit.

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 programme, its purpose and field of study; it will realise the programme's strategic goals and it will determine the means and ways for attaining them; it will implement the appropriate quality procedures, aiming at the programme's continuous improvement. In particular, in order to carry out this policy, the academic unit commits itself to put into practice quality procedures that will demonstrate:

a) the suitability of the structure and organization of the Curriculum;
b) the pursuit of learning outcomes and qualifications in accordance with the European and the National Qualifications Framework for Higher Education;
c) the promotion of the quality and effectiveness of teaching;
d) the appropriateness of the qualifications of the teaching staff;
e) the enhancement of the quality and quantity of the research output among faculty members of the academic unit;
f) ways for linking teaching and research;
g) the level of demand for qualifications acquired by graduates, in the labour market;
h) the quality of support services such as the administrative services, the Library, and the student welfare office;
i) the conduct of an annual review and an internal audit of the quality assurance system of the undergraduate programme(s) offered, as well as the collaboration of the Internal Evaluation Group (IEG) with the Institution's Quality Assurance Unit (QAU).

Study Programme Compliance

The School of Rural and Surveying Engineering has identified five primary principles and strategic goals that articulate its quality goals. They are: i) assuring the high quality of education offered by it; ii) improving the performance of students; iii) linking the research activities pursued by its faculty to the undergraduate student body; iv) raising the standing of the School in the corresponding international community; and v) improving the learning environment and daily operations of the School as well as fostering high levels of information communication among its stakeholder communities.

In order to assess progress in relation to these goals, the School has established processes in place to assure the quality of its academic offerings, in collaboration with MODIP of AUTH. This

involves monitoring data on: student progress, teaching personnel advancement, research productivity, the assessment of teaching performance, and progress towards set goals. Data are collected and analysed by OMEA and presented in a Report, that is then shared with HAHE and MODIP. Findings of this process are made available through a dedicated School website addressing the Quality Assurance policy and date of the School (see https://bit.ly/3guvXxE), and they are also presented to the School Assembly which deliberates follow-up actions. At the same time, the AUTh MODIP (provides access to relevant report content through its website (https://qa.auth.gr/).

The organization and structure of the above-referenced School website is exemplary, and the School deserves credit for that. It is also important to note that providing access to such information and data suggests the openness and inclusion that clearly characterize the culture of the School.

Overall, the School demonstrated through the material contained in the proposal of academic accreditation of the undergraduate programme, through the presentations made by its leadership, and through content available in the above-referenced website that it has in place a robust process that allows it to adjust as needed to ensure that it meets its set quality goals.

Panel Judgement

Principle 1: Academic Unit Policy for Quality Assurance	
Fully compliant	**X**
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

The Accreditation Panel (EEAP) is very impressed by the thoroughness and effectiveness of the procedures and processes in place to ensure quality assurance and can only recommend that they continue and/or evolve in accordance with the standards specified by HAHE/MODIP/OMEA.

Principle 2: Design and Approval of Programmes

INSTITUTIONS SHOULD DEVELOP THEIR 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.

Academic units develop their programmes following a well-defined procedure. The academic profile 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 National Qualifications Framework for Higher Education are described at this stage. The approval or revision process for programmes includes a check of compliance with the basic requirements described in the Standards, on behalf of the Institution's Quality Assurance Unit (QAU).

Furthermore, the programme design should take into consideration the following:

- *the Institutional strategy*
- *the active participation of students*
- *the experience of external stakeholders from the labour market*
- *the smooth progression of students throughout the stages of the programme*
- *the anticipated student workload according to the European Credit Transfer and Accumulation System*
- *the option to provide work experience to the students*
- *the linking of teaching and research*
- *the relevant regulatory framework and the official procedure for the approval of the programme by the Institution*

Study Programme Compliance

The School of Rural and Surveying Engineering is the third oldest unit of the Faculty of Engineering of Aristotle University, functioning since 1963. Building on an initial two Chairs, one in Geodesy and another in Photogrammetry/Cartography, today it comprises 27 faculty members and three Departments: i) Geodesy and Surveying, ii) Cadastre, Photogrammetry and Cartography, and iii) Transportation and Hydraulic Engineering. Reflecting the strong research orientation of the School, it also maintains eight Laboratories: i) Geodetic Methods and Satellite Applications; ii) Gravity Field Research and Applications; iii) Topography; iv) Photogrammetry and Remote Sensing; v) Cadastre and Geographic Information Systems; vi) Cartography and Geographic Analysis; vii) Hydraulics and Environment; and viii) Transport Techniques.

The School offers a 5-year programme of undergraduate studies which lead to the degree "Diploma of Rural and Surveying Engineering", as well as graduate specialization programmes, including a Doctoral programme.

The current undergraduate programme is in effect since the academic year 2004-2005. The programme consists of two units of studies. In the first 3-year unit, 41 mandatory courses (20 preparation courses in the first 3 semesters and 21 basic courses in the next 3) prepare students in the foundations of Rural and Surveying Engineering. In the second 2-year unit (Years of study 4 and 5) the students pursue specializations, with a study programme that comprises only 3

mandatory courses and 12 electives (selected from a set of 62 offerings), as well as a Diploma Thesis. This allows the students to specialize in one of the above identified three Departments. In total, a student completes her/his degree requirements by completing 56 courses and the Diploma Thesis.

The scientific objective of the programme is to prepare graduates with foundational and specialized knowledge in: i) the measurement, analysis, and visualization of the geometric and dynamic characteristics of Earth and its atmosphere; ii) the analysis, recording, and assessment of the physical and human environment; and iii) the study of the transformative impact on the physical environment of transportation and hydraulics projects, especially as they relate to the relevant national natural resources.

The School has in place robust processes to adjust/update its programme as needed, through a multi-tiered process that comprises:

- an initial study of proposed changes by the Committee for Undergraduate Studies & Strategic Planning of the School with the involvement of OMEA,
- an approval of the proposed changes by the School of RSE assembly, and
- the final approval of such corrective measures by the AUTh MODIP and the Senate.

The School is currently pursuing an update of its programme, taking into account a broad array of parameters that convey its standing in the corresponding academic community, its relation to the evolving profession that it curates, feedback from the students, and an assessment of the particular qualities of its resources.

Panel Judgement

Principle 2: Design and Approval of 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

- The academic field is evolving, and the programme currently comprises numerous courses, which imposes substantial resource constraints. This is limiting the ability to introduce much needed new courses, especially in programming and data analytics, and stretches unnecessarily the existing faculty body. At the same time, we feel that the programme may have less than expected mandatory courses in areas that are at the core of the field, namely Remote Sensing, GIS, Building Information Modelling (BIM), and Digital Twins. We hope that the current programme update will address this issue, considering the merging or elimination of some courses, to make room for the introduction of some new courses.
- It is recommended that the programme involves more hands-on assignments in courses, as appropriate.
- Establishing an External Advisory Board as a consultative body to the School would be beneficial to the programme. Such a Board could comprise members from industry, Technical Chamber of Greece (TEE), local public authorities, other stakeholders, and academics from international universities who would advise the School regarding issues such as re-evaluation of the Strategic Plan with emphasis on education and research, emerging areas of priority to incorporate in the curriculum, and marketability and the continuous improvement of its graduates.

Principle 3: Student- centred Learning, Teaching and Assessment

INSTITUTIONS SHOULD ENSURE THAT THE 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.

Student-centred learning and teaching plays an important role in stimulating students' motivation, self-reflection and engagement 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, 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 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.*

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;*
- *the regulations for assessment take into account mitigating circumstances;*
- *assessment is consistent, fairly applied to all students and carried out in accordance with the stated procedures;*
- *a formal procedure for student appeals is in place.*

Study Programme Compliance

The School has made significant efforts to adjust and improve the modes of delivery and pedagogical methods to advance student-centered learning and teaching in the undergraduate programme. The school has suffered a significant reduction in the number of faculty members over the last 10 years (approx. 33%), while the number of teaching and technical staff remains very low and unable to fill the gap and/or provide adequate support to the students. Most of the courses in the programme include a term project and other components (e.g., exercises, assignments, etc.) designed to encourage student synergy and promote experiential learning. This approach has also mitigated the limited assessment a written final exam offers. Entrepreneurs, industry representatives and renowned researchers offer invited lectures or site-tours to the students as part of the syllabus in multiple courses, although the number of these activities remain low. The existing curriculum includes an elective course called "Praktiki

askisi" (internship/practicum) in the last year of study to offer senior undergraduate students the opportunity to work in a real-work environment for a period of 2-3 months. The school is working closely with the employers to make this experience as beneficial as possible for the students. As the school is now working on the curriculum review, it is anticipated that the internship programme will offer more opportunities of this kind to its future students.

The participation in student surveys has significantly increased over the last few years to allow for the evaluation of efforts or the collection of feedback to measure impact and identify necessary modifications for more effective teaching and learning approaches. Student representatives have a voice in the administration bodies (Undergraduate Studies Committee, Department Meetings and School assembly), although their participation has not been consistent over the last few years.

Students truly appreciate the value of student clubs with an academic focus as they promote student participation, open up new opportunities for collaborations, participation in national and international student competitions, and strengthen the student community across the School and University. Currently, clubs of this type are limited or not very active, and this is one of the directions the school (faculty and students) should further explore.

There are processes in place to ensure that students have the ability to pursue their academic rights when such cases arise. Individual students have the option of filing an appeal or complaint with the school administration, which is then reviewed by the Department Director, the Undergraduate Studies Committee and resolved by a decision at the School assembly. The student can appeal the latest resolution to the University Senate.

Accessibility to the two computer labs seems to be limited. The labs are open weekdays from 8 a.m. until 2:30 p.m. and booked multiple hours in this slot for regular classes. Although most of the software used is either Free and Open-Source Software (FOSS) or remotely available (cloud permissions or VPN access), students without a relatively powerful PC / laptop are at a disadvantage. Lab hours cannot be extended to evening hours or weekends due to lack of support staff. Limited accessibility also applies to other equipment labs of the school (remote sensing, photogrammetry, survey stores, etc.) due to lack of support staff.

Panel Judgement

Principle 3: Student- centred Learning, Teaching and Assessment	
Fully compliant	**X**
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- Engage and/or increase student participation to provide input in long-term processes, such as curriculum reviews, and short-term actions like student surveys. Use student survey results to improve teaching practices by all academic staff. Use student survey results to recognize the efforts by teaching staff (annual teaching awards).
- Support the less privileged members of the student population to ensure that they can take full advantage of the available opportunities. This may include securing funding to support students who cannot afford a PC/laptop (which is actually an issue that should be addressed at the level of AUTH or even the pertinent Ministry, rather than this particular School), making the labs accessible for longer hours during the week (incl. evenings and weekends) and securing funding for support staff.
- The School may have an opportunity to link the Internship experience with the Diploma Thesis, leading to theses that address issues of interest to the hosts of internships, thereby further strengthening the connections between the School and its numerous stakeholders.

Principle 4: Student Admission, Progression, Recognition and Certification

INSTITUTIONS SHOULD DEVELOP AND APPLY PUBLISHED REGULATIONS COVERING ALL ASPECTS AND PHASES OF STUDIES (ADMISSION, PROGRESSION, RECOGNITION AND CERTIFICATION).

Institutions and academic units need to put in place both processes and tools to collect, manage and act on information regarding student progression.

Procedures concerning the award and recognition of higher education degrees, the duration of studies, rules ensuring students progression, terms and conditions for student mobility should be based on the institutional study regulations. Appropriate recognition procedures rely on institutional practice for recognition of credits among various European academic departments and Institutions, in line with the principles of the Lisbon Recognition Convention.

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).

Study Programme Compliance

The Rural and Surveying Engineering Integrated Master Programme at Aristotle University maintains effective processes and tools to properly manage, coordinate and act on student admission, progression, recognition and certification. The internal assessment mechanisms are well developed and allow a continuous monitoring of the main performance indicators. The programme requirements, and various related information, are available to prospective and current students on the School's web page. The EEAP determined that the students are aware and take advantage of this information.

Student admission: EEAP has confirmed that pre-defined and published regulations regarding student admission are in place. Admission criteria are clear, consistent and transparent. Indeed, admission to this study programme is well-defined and regulated by the Greek Ministry of Education and Religious Affairs, which accepts and processes centrally all entry applications. The School follows the same admission criteria as the other state universities in Greece following the national law for Pan-Hellenic examinations, under which graduates of Greek high schools enter undergraduate programmes after successfully passing the national entrance examinations. The programme has established processes and mechanisms to provide support to incoming students and has created a welcoming and engaging environment. The supporting mechanism of the incoming students includes various activities such as: dedicated welcome workshop for the reception of first-year students by the Head of the School and Directors of the three Departments of the School, electronic and direct information (Institutional information and other guidelines) from the School's Secretariat , direct access for students to online services, information for literature search, good writing practices, plagiarism, special course in the writing of scientific papers etc. There is also an orientation process for incoming students which is monitored centrally from the University and includes presentations on the electronic services provided to students, the organizational structure of the School, explanation of available social services etc. Student Advisor is assigned to every student, and all relevant materials are available online. There is a student support and services system that supports students with regards to academic and personal problems and difficulties. During the on-line meeting with currently

enrolled students, the EEAP was impressed by the degree to which they are satisfied with the existing processes.

Student progression: EEAP has confirmed that pre-defined, published and clear regulations regarding student progression are in place. All regulations and information are conveyed to students in a clear and transparent way. All of the academic and other data are readily available to the students at the School's web site. The programme has established mechanisms to monitor student satisfaction through student course evaluations. Depending on the course specifics, the student progress is continuously monitored through written and oral exams, presentations of individual or teamwork assignments and successful completion of laboratory and practical projects and thesis. The e-platform (https://sis.auth.gr) is well used for student progress monitoring both by the students and by the faculty.

Student recognition: Appropriate recognition procedures are in place and are in line with the Lisbon Recognition Convention's principles. The programme follows and meets State imposed general requirements that lead to the Diploma of Rural and Surveying Engineering, which is accompanied by the corresponding professional rights recognized by the Technical Chamber of Greece (TEE). There are different types of scholarship opportunities available from the University. A total number of 300 ECTS (level 7) is required for graduation. There are well-defined criteria for the completion of the Thesis. Practical training is offered as an elective course ("Praktiki Askisi") in which the students have the opportunity to assess their training experience. School has developed a very supportive network of various industrial partners (>160). Indeed, the EEAP noted in the discussions with the students a high level of satisfaction from participation in practical training.

EEAP noted that there are 12 Erasmus agreements with other universities (e.g. Technische Universität München, Universitat Politècnica de València, Institut National des Sciences Appliquees (INSA) de Strasbourg) which are sufficient for student mobility. Student mobility is well encouraged in general, but, still, the number of students entering European exchange programmes is low (average 5 per year). EAAP noted that the participation of staff to mobility schemes through funded projects such as ERASMUS Staff Training, ERASMUS+, ERASMUS INTERNATIONAL, Erasmus MUNDUS, Marie Curie, is more than satisfactory.

Student certification: Certification procedures are in place and students are informed of them accordingly. Diploma Supplement is issued to all programme graduates. The award of the Diploma as 'Integrated Master' provides the opportunity to the graduates to promote their profile at the national and European level more effectively.

Panel Judgement

Principle 4: Student Admission, Progression, Recognition and Certification	
Fully compliant	**X**
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

The EEAP concluded that the School/Programme delivers all of the individual aspects for ensuring student admission, progression, and completion of studies.

However, it appears that there is an unreasonably high number of lingering students (reaching almost 40% of the student body) which burdens the School, stretches its resources and overall affects the institution negatively. It is recommended that every effort is made by the State to resolve this long-term issue. The EEAP also recommends that the School intensify the existing outreach activities as well as establish a more personalized communication with students who seem disengaged.

The EEAP strongly recommends that the current efforts to increase student mobility should be further expanded and encouraged. This will promote further the internationalization of the students and the School.

Principle 5: Teaching Staff

INSTITUTIONS SHOULD ASSURE THEMSELVES OF THE QUALIFICATIONS AND COMPETENCE OF THE TEACHING STAFF. THEY SHOULD APPLY FAIR AND TRANSPARENT PROCESSES FOR THE RECRUITMENT AND DEVELOPMENT OF THE TEACHING STAFF.

The Institutions and their academic units have a major responsibility as to the standard of their teaching staff providing them with a supportive environment that promotes the advancement of their scientific work. In particular, 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 recognize 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.*

Study Programme Compliance

Both the research funding revenue and publication record of faculty members has increased significantly since 2009 despite the 33% reduction of the academic staff. This is the result of the extreme efforts made by all personnel in the school – faculty, teaching and technical staff, administrative staff, post-doctoral fellows, and doctoral students – over the years marked by the economic crisis and the pandemic.

Today's reality is deemed unsustainable. Faculty members in the School report an increase in the teaching load. The opportunities for personal development are minimal. The annual School resources allow for very few sessional instructors to cover for sabbatical leaves and as a result, most faculty members are denied such leaves. The increased teaching load has a negative impact on both research and service productivity of academic staff.

The limited resources also preclude granting any teaching or service release to faculty members with outstanding research or external to the University service record (e.g., President duties of International Associations, CEO of National Agencies, etc.); or offering adequate administrative support.

The University should consider providing rewards funding schemes to the academic staff based on the submission of annual report activities and pre-defined annual key performance indicators (KPIs) in research, teaching, contribution to the society etc. During the meetings, a willingness was expressed to implement such rewards schemes in the near future.

The School's Teaching and Technical Staff comprise only 3 members, who are unable to adequately support the teaching and learning needs. The School offers opportunities and promotes their professional development through research leaves, support for attending conferences, etc.

As for gender balance, there are only 3 women out of 24 faculty members.

The University seems to offer regular and systematic recognition of staff achievements through awards. Similar practices are limited at the school level. Teaching, research and service awards have multiple benefits to both the awardees and the School/University as a whole.

Panel Judgement

Principle 5: Teaching Staff	
Fully compliant	**X**
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- The School needs new faculty hires. The School's staff has done everything possible to deliver a top-quality undergraduate programme and to prepare the engineers of tomorrow with a constantly shrinking faculty body. This is unsustainable. The quality of the programme depends on the availability of resources that will guarantee a healthy balance between teaching-research-service (e.g., 40%-40%-20% for faculty members) and opportunities for professional development for all academic staff. This strong message must be communicated to the University and the Government.
- The School should introduce a formal recognition of its staff achievements through annual awards for research, teaching and service.
- The School should make an effort to attract more women applicants in future faculty positions and to achieve a more balanced gender representation in the future pool of faculty members.

Principle 6: Learning Resources and Student Support

INSTITUTIONS SHOULD HAVE ADEQUATE FUNDING TO COVER 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 funding and means to support learning and academic activity in general, so that they can offer to students the best possible level of studies. The above means could include facilities such as libraries, study rooms, educational and scientific equipment, information and communications services, support or 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 or international students, students with disabilities) and 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 ensures that all resources are appropriate, adequate, and accessible, and that students are informed about the services available to them. In delivering support services the role of support and administrative staff is crucial and therefore they need to be qualified and have opportunities to develop their competences.

Study Programme Compliance

Available resources

University offers residences, student community building library, athletic facilities, office of student support and of persons with special needs, centre for advice and psychological support, Ombudsman for students, office for supporting foreign students, career office, and medical services to the students. For the students' mobility there is a central office for the Erasmus programme.

Regarding the programme it focuses on student-centered education by respecting the particulars and needs of each student. It offers flexible choice of courses including the taking of courses from other departments ("Tomeis") of the programme. In the future there is consideration to permit the taking of courses from other schools. Academic Advisors are available to the student for consultations. The teaching is conducted in various forms such as lectures, tutorials, laboratories (exercise and hands-on), individual and group projects, diploma thesis, practicum ("Praktiki Askisi"), and use of information and communication technologies. There are also opportunities for the students to present their findings of their diploma thesis in technical and scientific conferences and journals. The course information and material are available in an e-learning environment. The students are given the opportunity to evaluate the instructors and the course anonymously via electronic questionnaires. The students are assessed based on prior set assessment methods such as written examinations, midterm, project, presentations, and lab exercise. Both written and oral option examinations are available.

The newly admitted students are briefed from the school's secretariat of the school and are provided with access to the electronic services and registered to the 1st term. There is a welcome event by the Head of the school and the Directors of the three departments.

One very successful course is the practicum, where the students can spend 3 months working at the industry and government organizations.

The specific infrastructure of the School consists of one amphitheatre hall, five lecture rooms, six lab spaces, one room for technical drawing, and two islands (rooms) with a total of 48 computer seats.

The support structure and services to the students include the secretariat, the library, e-learning, school website, social media (FB, tweeter) and e-services (e.g., wireless access to all rooms, electronic secretariat, electronic library, software licenses. Recently the school has established a committee to monitor the progress of the students.

Observations

- Small number of administrative and technical personnel. We also see a reduction in the faculty staff.
- Teaching halls and lab spaces are at their capacity based on the number of students
- Practicum of 3 months appears to be short. Issues are: time of year, duration, work subjects.
- Significant number of students in the n+2 category.
- Number of student mobility appears to be small. School can offer more help, encouragement.
- There are no student clubs with academic focus (such as Open Software Community, Women in Engineering, etc.).
- Course workload appears to be heavy. Third year appears to be the heaviest one.
- Need to bring people from industry and government to give lectures to students on general and specialized professional themes.
- Most of the information about the school is given in the first year. Need to introduce the departments in the 3rd year.
- Many books appear to be old editions. Books arrive late in the semesters. Notes from the professors seem to be more useful.
- The examination programme is published quite late and very close to the start of the examination period.
- Access to the computer rooms (2 islands) appears to be limited. Access is usually available till 2:30pm. There is no access to the computer rooms when a class is taking place. Remote access seems to be slow.
- Due to the large number of students there is no sufficient number of equipment, thus students have to work in larger groups. Maintenance cost of certain equipment appears to be quite high.
- Programme is quite heavy. Consideration should be given to offer certain courses in earlier terms. Certain courses need to be integrated, computer programming courses need to expand and improve.

- Need to have more hands-on work and projects.

Panel Judgement

Principle 6: Learning Resources and Student Support	
Fully compliant	**X**
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

The EEAP was satisfied with the existing facilities and their quality, given the circumstances and resources. It is apparent that teaching can be performed in an appropriate environment. It should be noted though that additional classroom, office and lab space will be beneficial in advancing the School's educational and research activities.

- There is an adequate range of support services available to the students.
- Students are informed of the available services
- There is competent administrative staff, however additional personnel is needed to ensure the smooth operation of the student/faculty support services.
- Overall, the school appears to have the necessary facilities. Upon improvement of financial conditions, consideration should be given to improving the number of technical staff, the access to the computer facilities, and the computer resources.

Consideration should be given to the evaluation of teaching and learning needs and pursue sharing resources (lab space, courses, equipment) with other Schools across the University.

Principle 7: Information Management

INSTITUTIONS 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.

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 as well as to the academic community. Reliable data is essential for accurate information and for decision making, as well as for identifying areas of smooth operation and areas for improvement. Effective procedures for collecting and analysing information on study programmes and other activities feed data into the internal system of quality assurance. The information gathered 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 programme(s)*
- *availability of learning resources and student support*
- *career paths of graduates*

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

Study Programme Compliance

Available resources

Information systems on the collection, monitoring, and management of data concerning students, teaching staff, course structure and organization, teaching and provision of services to students and to the academic community are in place at both the University and School levels.

At the University level the quality assurance information system is maintained by the Internal Quality Assurance System (IQAS; ΜΟΔΙΠ). The purpose of IQAS is the application of procedures of quality assurance to the academic and administrative units as well as to human resources as relates to teaching, research and administrative works according to the HAHE and European practices of higher education. Milestones in Quality Assurance by the university are the external assessment of the Schools (2010-2014), the procedures of structured administration of the undergraduate programmes (2014), quality certification of Internal Quality Assurance System of the University (2019), and the quality certification of the undergraduate programmes (2020-2021).

At the School level, the Internal Quality Assurance Unit (OMEA) is responsible for the management of the information. For its works OMEA uses data from MODIP's information system, the inventory and evaluation records from faculty, students, companies from the Practicum as well as the annual report for the School produced by the National Quality Integrated Information System (ΟΠΕΣΠ). Further OMEA uses data from the undergraduate programme; students' performance indicators, profile and analytical elements; study paths and information on the degree completion or drop-out; student electronic questionnaires for the evaluation of the faculty and the courses; individual inventory and evaluation forms from the

faculty; publication of research work, research grants and projects; and awards and recognitions of the faculty and students.

The Internal Quality Assurance Unit (OMEA) is responsible for the analysis and utilization of the data and information collected by generating annual internal evaluation report, providing input to the strategic planning and curriculum committees, and an assessment of the various indications which are submitted for approval to the School assembly.

Based on the analysis of the data and information, the Internal Quality Assurance Unit (OMEA) and the strategic planning and curriculum committees propose and make recommendations on matters related to the quality of the education, the students' satisfaction, curriculum changes, the relationship between the education with research and the market, and outward looking and internationalization. Similarly, the information collected from the Practicum is analysed and evaluated. The Internal Quality Assurance Unit (OMEA) also analyses and evaluates data related to the academic and research works and the mobility of the faculty.

Tabular data of the Quality Indicators for the School prepared by the Hellenic Authority for Higher Education (HAHE) were also received.

Observations

The school collects and analyses essential information and key performance indicators for decision making, as well as for identifying areas of smooth operation and areas for improvement.

To better review, understand and access the HAHE indicators (assess the trends for example) the use of data visualization methods would be much more helpful (e.g., use of graphs).

Panel Judgement

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

Panel Recommendations

The university and the school are working together and have established procedures and management information systems for the collection, analysis and evaluation of data in support of decision making related to student body, teaching methods, student progression, employability and career paths of graduates, curriculum improvement, mobility of students and faculty, and research.

The school collects the data from the university, questionnaires to students and faculty, and inventory forms. The collected information is systematically analysed, appropriately communicated and used towards improvement.

Data from the University and the School are presented in graphs, demonstrating trends and allowing direct interpretation and comparison. Data provided by the Hellenic Authority for Higher Education (HAHE) were in tabular form making it difficult to assess. The EEAP recommends whether this is possible, that these data be provided in graphs, diagrams using data visualization techniques for better understanding and analysis by the visiting panel.

A repository of faculty publications could be established in the Department's web page or library that would provide a common location for all publications.

Principle 8: Public Information

INSTITUTIONS SHOULD PUBLISH INFORMATION ABOUT THEIR TEACHING AND ACADEMIC ACTIVITIES WHICH IS CLEAR, ACCURATE, OBJECTIVE, UP-TO-DATE AND READILY ACCESSIBLE.

Information on Institution's activities is useful for prospective and current students, graduates, other stakeholders and the public. Therefore, institutions and their academic units provide information about their activities, including the programmes they offer, the intended learning outcomes, the qualifications awarded, the teaching, learning and assessment procedures used, the pass rates and the learning opportunities available to their students, as well as graduate employment information.

Study Programme Compliance

The School has an informative website with detailed information on the faculty and the university, the personnel, the current, student support services, and its quality assurance policy, targets, and metrics. The School uses all available, from the University, information technology systems, such as e-learning and SIS, to inform students on courses, syllabus, exams, workload and marking. Moreover, it uses social media to distribute announcements and opportunities (e.g., scholarships, conferences, etc.), already published in the webpage, to the student community.

The available video-tour of the School is very informative and gives an overview of the current academic and research activities and available infrastructure.

The School's web-page is directly linked with the AUTH QA information system, so that all course outlines, learning outcomes, student obligations, course load, and examination practices are available online and up to date. The AUTH policy for QA, the School QA policy and targets are available online and easily accessible from the School's website. The published information is current, up-to-date, clear, and easily accessible.

Panel Judgement

Principle 8: Public Information	
Fully compliant	**X**
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

It is recommended to give a more modern and fresher look to the School's website with all content available in both Greek and English (including the student handbook). The use of visual information material can be useful along with student achievements, link to diploma thesis and faculty distinctions, research records and awards. It is also recommended to create a common, unified page for each teaching staff member in the School's landing page, with basic bio, research teaching and contact information.

Principle 9: On-going Monitoring and Periodic Internal Review of Programmes

INSTITUTIONS SHOULD HAVE IN PLACE AN INTERNAL QUALITY ASSURANCE SYSTEM FOR THE AUDIT AND ANNUAL INTERNAL REVIEW OF THEIR 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 study programmes aim to maintain the level of educational provision and to create 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. Revised programme specifications are published.

Study Programme Compliance

The University and the School have well-established self-evaluation processes that guarantee quality assurance. Both the OMEA and MODIP receive and analyse data to continuously improve the programme. The EEAP recognised an impressive internal quality assurance system in place for the annual review of the programme based on the established mechanisms and decision-making procedures of AUTH as well as the excellent work that has been done by MODIP. It is recognized that the ongoing monitoring and review of the study programme is based on the internal evaluation procedures which are monitored by MODIP.

The EEAP noted that the School has a well-defined and documented process in place that regularly evaluates and revises the study programme. The review/revision of the programme is achieved through two main levels: 1) at the teaching group level, which is responsible for incorporating the latest research outcomes into the course's content and all the information retrieved from the student questionnaires; and 2) at the institutional level, mainly through the School's Curriculum Committee & Strategic Planning Committee, which reviews the content of the entire programme and suggests changes to the School Council based also on the involvement of the OMEA. The approved suggested changes from the Council are submitted to MODIP and then to the Senate for the final approval. The EEAP noted the lack of closed links and official meetings on a systematic basis with all stakeholders (e.g. employers, industry, TEE, graduates etc.). The EEAP recognized the strong willingness of these groups to participate in such a process.

The programme has been revised and streamlined in accordance with the recommendations of the external review (2014). The EEAP noted that the School has ongoing process and discussion on school committees (e.g., School's Curriculum Committee & Strategic Plan Committee, OMEA)

to implement more revisions and implement the new revised curriculum based on the needs of the society, industry and research findings by next year.

As regards the student's expectations, needs and satisfaction in relation to the programme, the School applies considerable efforts. Their feedback is monitored with regular electronic questionnaires which are used to evaluate both the courses and the teaching staff at the end of each semester. The EEAP noted the increase of % student participation in the electronic questionnaires from 28.6 % for 2019-2020 to 34 % for 2020-2021 (one semester is still pending). However, the student participation in these questionnaires should be improved in the next years. During the meeting with the existing students, the EEAP found that the outcomes from these questionnaires are not communicated directly to the students.

The learning environment is suitable, and the support services are very adequate, especially regarding the electronic administration management. In general, the students and the graduates expressed a very positive opinion regarding their strong theoretical and practical background, and they are satisfied with the services offered by the university and the School. The employers also expressed a very positive opinion regarding the graduates and the programme.

During the on-line meeting with the EEAP, the graduates expressed the following suggestions for further considerations: to incorporate more hands-on assignment in the curriculum modules and to connect more efficiently the programme with the labour market; to promote more the invited lectures from industry and government representatives, alumni; to incorporate extra tutorials to support missing knowledge in basic subjects (mathematics, physics, etc.) on the timetable especially for the 1st year students; to move the technical drawing (e.g., CAD s/w) in early courses i.e. in 1st year

During the on-line meeting with the graduates, the employers and the staff, the EEAP noted that there is a great need to revise the programme curriculum in direct consultation with an established Advisory Board and the following changes are strongly recommended by the EEAP to be considered during the proposed revision of the curriculum: (a) Develop new courses: Big Data analytics; Project management, Elements of Law and Engineering Legislation; (b) Remote Sensing /Earth Observation should be included as second core module by taking into account: SAR, Copernicus Programme, etc.; (c) GIS or Principles of Geoinformatics and GIS should be added as a core module in the second year; (c) Technical drawing course should be enhanced (e.g., adding tutorials in CAD and/or BIM s/w) and be moved to the 1st year of the curriculum; (d) References and the content should be updated in some of the modules; and (e) programming courses should be enhanced.

Finally, the EEAP noticed that the staff integrate research findings from funded projects into teaching in an excellent way.

Panel Judgement

Principle 9: On-going Monitoring and Periodic Internal Review of Programmes	
Fully compliant	**X**
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

Overall, the School's objectives are achieved as the learning outcomes address the professional rights of Rural and Surveying Engineers. The EEAP believes that the evaluation process could be more enhanced through the following suggestions.

- It is recommended to establish an External Advisory Board as a consultative body to the School and the programme consisting of external stakeholders, including alumni and industry, TEE, local and public authorities, and academics from European and international universities to formalize structured external input and feedback to the School and the programme. The EEAP also recommends engaging the External Advisory Board in an official and systematic manner in the process of programme review and curriculum change, to provide feedback on educational and market aspects and help with the School's Strategic Plan with emphasis on education and research, emerging areas of priority to incorporate in the curriculum, and marketability and the continuous improvement of its graduates.
- It is recommended to continue the practice of periodic revisions of the study programme in direct consultation with the External Advisory Board accounting also for the changing needs of society and the need to integrate research findings from funded projects into teaching. During the next forthcoming revision of the curriculum the EAAP strongly suggests the above changes in the curriculum as described in the Principle 9.
- Revisit and implement the School's strategic plan in collaboration with the proposed External Advisory Board that will meet predefined KPIs.
- Establish an active Alumni Association for the programme based on the excellent track record of graduates' employment in the industry and research sectors.

Principle 10: Regular External Evaluation of Undergraduate Programmes

PROGRAMMES SHOULD REGULARLY UNDERGO EVALUATION BY COMMITTEES 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 programme accreditation process which is realised as an external evaluation procedure, and implemented by a committee of independent experts. HAHE grants accreditation of programmes, 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 template's requirements, and as a catalyst for improvement, while opening new perspectives towards the international standing of the awarded degrees.

Both academic units and institutions participate in the regular external quality assurance process, while respecting the requirements of the legislative framework in which they operate.

The quality assurance, in this case the accreditation, is an on-going process that does not end with the external feedback, or report or its follow-up process within the Institution. Therefore, Institutions and their academic units ensure that the progress made since the last external quality assurance activity is taken into consideration when preparing for the next one.

Study Programme Compliance

The School went through its External Evaluation in 2014 and has since then made substantial changes in its undergraduate programme to comply with the main findings of the evaluation committee. In the conclusive remarks of the External Evaluation, five main points were mentioned, as:

1. the large number of courses offered which when combined with the decreasing number of personnel results in a high teaching load for the faculty,
2. introduction of new, cutting-edge, courses to strengthen the employment opportunities of students,
3. strengthening is needed in programming courses,
4. introduction of prerequisites for courses,
5. hiring of postgraduate and PhD candidates as teaching assistants, and even professionals to carry some of the laboratory workload.

With respect to the aforementioned points, the School has taken considerable steps in adopting all of them, through the modernization of the programme and the exploitation of hiring capabilities offered by National Law. More specifically:

1. One (1) compulsory and one (1) elective course have been removed from the undergraduate programme, while two elective courses have been merged into one,
2. Elective laser scanning and UAV courses have been added to address technology advancements in surveying and mapping,

3. The two core programming courses have been completely re-designed, introducing more lab tutorials, exercises and projects. Programming languages taught now include Python, Visual Basic .NET, MATLAB and AutoLISP,
4. Prerequisites have been added to 1 core course and 1 elective course,
5. The School exploits all possibilities available under national law to hire additional personnel annually for teaching. In the current academic year 3 lecturers have been hired through the "academic scholars programme" and 3 more from the 407/80 one.

Panel Judgement

Principle 10: Regular External Evaluation of Undergraduate Programmes	
Fully compliant	**X**
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

It is recommended that through the current restructuring of the undergraduate studies programme points a), b), c) and d) will be further pursued.

- The School can try to further combine courses, while the course load per semester can be limited to 6 courses, considering the total ECTS workload per semester of 30 ECTS.
- There is still a large number of elective courses. In the current programme restructuring, the number of elective courses can be reduced and target cutting-edge fields.
- As programming has become vital in today's surveying engineering, the School can introduce in non-programming courses lab tutorials and exercises that include programming. Also, courses, offered possibly by other University Departments, on e.g., Big Data Analytics, can be included.
- More prerequisites can be introduced to assist the students in defining and understanding the course sequence and arrange their studies.

PART C: CONCLUSIONS

I. Features of Good Practice

The School has demonstrated its adoption and compliance with a series of good practices during the virtual visit and through the documents provided. These practices include:

The study programme:

- allows students to develop a strong theoretical and practical background in the multidisciplinary nature of the discipline,
- promotes a global perspective in rural and surveying engineering resulting in well-qualified graduates that industry and academia, both nationally and internationally, seek out for hiring, and
- promotes the synergy between research findings and teaching.

The faculty:

- are enthusiastic, hardworking, and dedicated to the teaching values and duties and take pride in their efforts to provide students with a first-class education,
- are active in research and in pursuing external competitive funding,
- are active in mobility schemes through European funded projects,
- are open to continuous improvements in the curriculum based on feedback and quality indicators, and remain committed to being aligned with research, industry and societal needs,
- recognize the value of a sustained relationship with students and alumni by promoting an open environment for interaction and communication across the School's constituency groups.

II. Areas of Weakness

The School is also facing a number of challenges (many beyond School's capacity) that do not allow it to fully reach its capabilities. Areas of weakness include:

- Anticipated retirements in the next few years that could reduce the faculty to 24 members with a slow replacement timeframe
- The large number of students creates an unreasonably demanding environment and should be gradually reduced.
- Lack of a formal process for seeking input from external stakeholders and employers to improve study programme.
- The teaching and laboratory infrastructure needs improvement and modernization to better meet the learning objectives of the programme.

- The programme can be further improved to align with the current science and technology advancements in the field.

III. Recommendations for Follow-up Actions

Recommended follow-up actions have been identified under the assessment of each principle earlier in this report. The School is encouraged to consider these recommendations and take relevant actions.

Emphasis should be given in the following actions:

- Establish an External Advisory Board as a consultative body to the School and the programme (see Principles 2, 9)
- Update and implement the School's strategic plan in collaboration with the proposed External Advisory Board to identify emerging high-value opportunities and unanticipated eventualities in the systematic development of the School's research and educational programmes (Principles 1, 9)
- Revise the curriculum to *integrate new courses* such as Big Data Analytics, Project Management, Elements of Law and Engineering Legislation, BIM and Digital Twins (and possibly remove or merge existing courses), *move certain courses to earlier semester*s, a*nd transfer content from elective courses*, such as Remote Sensing/Earth Observation and GIS, *to core (mandatory) courses* (see Principles 2, 6, 9, 10)
- Evaluate the number and frequency of offered electives to address the decreasing number of faculty members (see Principles 2, 5, 9, 10)
- Allocate new hires based on the School's strategic plan and emerging needs of individual departments ("Tomeis") and not necessarily to replace vacancies due to retirements (see Principles 5)
- Evaluate teaching and learning needs and pursue sharing resources (lab space, courses, equipment) with other Schools across the University. (see Principles 6)
- Redesign the School's website and enhance its overall presence in social media in both Greek and English (see Principle 8)
- Consider providing financial reward schemes for academic staff based on submission of annual report activities and pre-defined annual key performance indicators (KPIs) in research, teaching, service to society, etc. (Principles 3, 5)
- Develop an active Alumni Association for the programme and engage alumni as ambassadors for further promotion and internalization based on the existing excellent track record of graduates' employment in research and industry sectors (Principle 6)

The EEAP recommends that all above be considered before the next External Evaluation.

IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are: **1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.**

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

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 for the UGP (Integrated Master)

Name and Surname **Signature**

1. **Prof. Emmanuel Stefanakis (Chair)**
   University of Calgary, Canada

2. **Prof. Peggy Agouris**
   William & Mary, USA

3. **Prof. Costas Armenakis**
   York University, Canada

4. **Prof. Diofantos Hadjimitsis**
   Cyprus University of Technology, Cyprus

5. **Mr. Georgios Tsakoumis**
   Member of the Technical Chamber of Greece, Greece