



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
HELLENIC REPUBLIC



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Ανώτατης Εκπαίδευσης**
Hellenic Authority
for Higher Education

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

Electrical and Computer Engineering
Institution: Aristotle University of Thessaloniki (AUTH)
Date: 13 February 2021

Report of the Panel appointed by the HAHE to undertake the review of the Undergraduate Study Programme (Integrated Master) of **Electrical and Computer Engineering** of the **Aristotle University of Thessaloniki** for the purposes of granting accreditation.

Abbreviations

ΕΕΑΡ	External Evaluation & Accreditation Panel
ΕΔΙΠ	Εργαστηριακό Διδακτικό Προσωπικό
ΕΕΠ	Ειδικό Εκπαιδευτικό Προσωπικό
ΕΤΕΠ	Ειδικό Τεχνικό Εργαστηριακό Προσωπικό
ΕΛΚΕ	Ειδικός Λογαριασμός Κονδυλίων Έρευνας (ΕΛΚΕ)
ΗΑΗΕ	Hellenic Authority for Higher Education
GSRT	General Secretariat of Research and Technology
IQAS (ΕΣΔΠ)	Internal Quality Assurance System
KPIs	Key Performance Indicators
MODIP	Quality Assurance Unit (ΜΟΔΙΠ)
AUTH	Aristotle University of Thessaloniki
ΟΜΕΑ	Internal Evaluation Groups/School's Internal Evaluation Committee
QA	Quality Assurance

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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) of **Electrical and Computer 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. Dr. Kimon P. Valavanis, Professor (Chair)**
University of Denver, USA

- 2. Dr. George Pappas, Professor**
University of Pennsylvania, USA

- 3. Dr. Nikos Sidiropoulos, Professor**
University of Virginia, USA

- 4. Mrs. Kyriaki Tsitogianni**
Member of the Technical Chamber of Greece, Greece

- 5. Dr. George Vachtsevanos, Professor Emeritus**
Georgia Institute of Technology, USA

II. Review Procedure and Documentation

The Hellenic Authority for Higher Education (HAHE) formed the External Evaluation and Accreditation Panel (EEAP) of experts to evaluate the programme of the Department of Electrical and Computer Engineering (Τμήμα Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών, THMMY) of the Aristotle University of Thessaloniki in accordance with the HAHE requirements. The evaluation and assessment were conducted remotely via Zoom. The method used was based on sampling of the Department's activities with the aim to evaluate the overall mission and objectives of the programme and to comment on its compliance, effectiveness, efficiency, and applicability with respect to the chosen requirements.

The review procedure and documentation were carried out during the week of February 8 to February 13, 2021.

During all meetings valuable information was received regarding the programme structure, delivery methods, programme improvements and modernization compared to findings from the previous external evaluation (2012), which included a review of the undergraduate programme, the quality of the students and of the educational programmes, points of strength, as well as the shortcomings that need to be addressed.

On February 8, 2021:

The EEAP members met via teleconference, reviewed, and discussed all received information and the guidelines of HAHE as well as the logistics associated with the compilation of the report.

The EEAP meeting was followed by a teleconference with the Vice-Rector, the President of MODIP, the Head of the ECE Department, as well as with representatives of MODIP, MODIP staff, and OMEA who gave informative presentations related to the status of the University and the Department. Presentations were followed by discussion and a Q&A (question and answer) session.

On February 9, 2021:

The EEAP members first met (teleconference) with teaching staff members and undergraduate students. An online tour (video) of all facilities, that is, classrooms, lecture halls, libraries, laboratories, and other facilities was given, followed by a thorough discussion of the University and the Department infrastructure. Then, the EEAP met with administrative staff members and with teaching staff members, as well as with programme graduates.

On February 10, 2021:

The EEAP members first met (teleconference) with employers and social partners, followed by exit meetings with OMEA and MODIP representatives and staff to clarify any remaining issues and to respond to any questions the Panel had. Subsequently, the meeting concluded with a teleconference with the Vice-Rector, the President of MODIP, the Head of the Department, OMEA and MODIP members, during which the Panel discussed their first findings and communicated their overall positive impression.

On February 11 and 12, 2021:

The EEAP members worked to complete the accreditation report.

III. Study Programme Profile

The programme under evaluation is administered by the Department of Electrical and Computer Engineering, or in Greek, Τμήμα Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών (THMMY). The curriculum was first modified in the early 2000's and underwent a significant update in 2016, after implementing a series of steps for continuous improvement, following the findings and recommendations of the 2012 accreditation/evaluation. The curriculum is consistent with the objectives and requirements set by the Department and the overall mission of AUTH.

The curriculum spans a five-year, ten-semester programme, course-heavy but diverse, which also includes laboratory training, project work, a diploma thesis, and as additional elective, a three-month practical training. The curriculum corresponds to 300 ECTS units (in compliance with European Union standards and practices), out of which 30 ECTS correspond to the diploma thesis. The practical training (non-mandatory) accounts for an extra 15 ECTS.

The undergraduate curriculum includes: (i) The core programme that spans six semesters and it is common to all students. (ii) The sector specialization that spans four semesters, including (iii) The diploma thesis (Διπλωματική Εργασία) that is completed during the 10th semester. (iv) The practical training (optional).

The offered courses are classified as mandatory, subject-area electives and general electives. Collectively, these courses cover a very wide range of topics from fundamental courses to more advanced elective courses. Course material is regularly updated, while more recent, modern, and new area topics are mostly introduced as part of already offered courses than as totally new courses. The total number of courses required to complete the programme, compared to 2012, has been reduced from 61 to about 48-50, along with a programme restructure. The curriculum is still diversified, extensive and broad, yet course intensive. Although the number of courses has been reduced, lab requirements have increased.

The EEAP believes that curriculum objectives and the programme should continue to be evaluated on a regular basis to allow for faster and more flexible restructuring of existing courses, and introducing new ones (i.e., machine learning, artificial intelligence, big data, etc.). This will result in further modernization of the current curriculum.

The programme graduates top engineers who are easily employed within and outside Greece. The Panel notes that interviewed employers and external partners have a very high opinion of the programme graduates, ranking them as top engineers, the strength of which lies in diverse/wide fundamental knowledge of engineering, and ability to face and solve complex problems they have not been faced with before. However, one comment that was also made repeatedly was that the graduates could use more so-called soft skills.

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 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 University (AUTH) has established a Quality Assurance (QA) Policy for the undergraduate programmes. There also exists an Internal Quality Assurance System (ΕΣΔΠ) that follows specified guidelines set by HAHE. The MODIP (ΜΟΔΙΠ), the Quality Assurance Unit for the University, in its current form, does not include a representative from the ECE Department (although there was an ECE representative in the past). The MODIP actions depend on University central policies. Quality indicators (QIs) are a combination of University-wide ones, coupled with Department specific.

The Department is committed to excellence. It follows well-established QIs that are regularly evaluated. Discussions and interviews with MODIP, Department members and the Vice Rector revealed that commitment to, and evaluation of, quality within AUTH and the Department is top priority throughout the academic hierarchy.

The Quality Assurance Policy is communicated to all parties involved, from faculty members, students, public authorities, and external stakeholders. It is also communicated to new and incoming students, and it is widely discussed in Department meetings.

It is very encouraging that 'quality' in general, QA policy and QIs, is an often revisited and discussed topic among the involved parties. Internal reviews are conducted to evaluate the QIs with respect to their effectiveness, efficiency, appropriateness, applicability, flexibility, measurement, as well as to their changes and rate of change. It is noted that QIs that are different compared to those set by HAHE but are used by the Department are communicated to HAHE and are recommended to HAHE for wider adoption. The Department invests considerable time in evaluating set QIs with the aim to accurately depict the programme effectiveness and competitiveness.

It is noted that the number of incoming students is decided by the State, which may limit the flexibility of some relevant QIs. Moreover, since the teaching material and the teaching delivery methods are under the responsibility of the instructor, there may be a bias related to the outcome of some indices. However, overall, the QA policy and QIs are comprehensive and under continuous consideration for improvement.

It is positive that the Department follows an electronic / computerized system for data collection and processing.

The excellent working environment and collegiality among the faculty members and interaction with students contributes to the overall quality. As stated, there is a 'family' attitude among all parties – this was easily observed by the Panel members.

Panel Judgement

Principle 1: Institution Policy for Quality Assurance	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

The Department is aware of how important the continuous evaluation of quality is, of quality management and control, as well as of quality assurance. At times, centrally specified QIs may not serve exactly the purpose of the Department; in this case, it will be beneficial for the Department to define a subset of Department-specific indices for quality assurance purposes.

It will be beneficial to the involved parties to get trained in Quality Assurance Systems (ΠΟΛΙΤΙΚΗ ΠΟΙΟΤΗΤΑΣ, ΣΥΣΤΗΜΑΤΑ ΔΙΑΣΦΑΛΙΣΗΣ ΠΟΙΟΤΗΤΑΣ) via focused short courses, seminars from other Departments or external entities. Also allowing for students to be part of such training

will create a 'culture' that will contribute to improving quality. For example, it would be beneficial for the department to organize a forum, or podcast, focusing on the need for quality, i.e., "Why do we believe in quality?", or 'We believe in Quality", to contribute to digesting the need to have measurable feedback for quality and quality metrics. Another idea is to organize an annual meeting to assess findings, evaluate feedback and possibly publish an internal report (available on the web) with such findings and next steps to be followed.

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 study programme has been designed based on appropriate standards. The main factors considered for the latest curriculum redesign that was introduced in 2016, are: i) European and international quality and accreditation standards, including those from IEEE and ACM, as well as model curricula from renown institutions in Europe and in the US; and ii) the 2012 external review evaluation report provided to the Department, which outlined specific areas for curriculum improvement.

The 2016 curriculum redesign reduced the number of courses from 61 to 48-50 (depending on the ECTS of the courses chosen). This is a significant reduction of about 20%. This curriculum restructure was primarily achieved via consolidation of course sequences in circuits, electronics, electromagnetic fields, and signal theory, from three to two courses each. In addition to the reduction in the number of courses, more flexibility was built into the upper division part of the curriculum, namely in courses that students take after choosing one of the three concentration areas at the end of their third academic year.

The 2016 curriculum mostly addressed the 2012 external evaluation report recommendations regarding the large number of courses, the associated heavy burden on the students, and the call to restructure, update and modernize the older curriculum. There is still (and always will be) room for modernization, to further relax constraints imposed on the curriculum by the division (sector)-based Department structure, to promote cross-division and cross-disciplinary courses. For example, all electrical and computer engineers can benefit from a course in machine learning with diverse engineering applications, from materials to the power grid, robotics, signals, control, vision, and many other areas. Some of that can be pushed down to the core mathematics sequence, including Linear Algebra, which is taught in the first semester, and Applied Mathematics I and II, which are taught later. This will also raise the level of excitement among first- and second- year students. It is fortuitous that the math sequence is now taught in-house by ECE Department faculty, which makes introducing changes such as the above a lot easier.

The 2016 redesign of the curriculum aimed to overcome the too many restrictions and constraints imposed in the previous programme, and to ensure conformance with international quality and accreditation standards. The redesign led to a reasonable relaxation of such restrictions to allow for recent, new, and emerging technologies to be introduced in the academic life.

The curriculum, compared with appropriate and universally accepted standards for the specific area of study, fulfils such standards and provides notable breadth in the lower division curriculum, strong fundamentals, and opportunities for specialization during the last two years.

One observation about further integrating the courses offered by divisions, is because of still apparent artificial or legacy splits. For example, signal processing is under telecommunications, image processing under electronics and computers. The networks course is in the telecommunications division and the syllabus is about queueing, but this needs to be complemented nowadays with TCP IP, socket programming, etc., which are closer to network engineering practice, and which are usually taught by computer engineers. Looking at the syllabi of several other courses, there is a sense that they are outdated (even if the courses themselves have been revamped). For example, Linear Algebra in the first semester seems very abstract and disconnected, whereas what most engineers really need is a clear understanding of how to solve under/over-determined systems of linear equations.

There are three divisions and a very large number of elective courses offered by the Department, but little guidance is offered in the (very detailed) undergraduate student guide about the specialization areas, and how to choose courses that, when taken together, prepare students to work in a particular area (e.g., embedded computing).

The students now have more flexibility in choosing electives from the other two specialization/concentration areas, and more choices (instead of “required electives”) within their area as well. Attention was also paid to the entry-level programming courses and the math sequence, which was revamped. In addition to the above, several outdated courses were modernized, others were discontinued, and new electives were introduced.

It is worth noting that even the 2016 curriculum only allows for students to take up to 15 ECTS (~ 3 courses) outside the Department, out of a total of 270 ECTS in coursework (300 for the

degree, including the diploma thesis). There are limited opportunities for cross-disciplinary interaction and collaboration, which naturally happen when students from different Departments meet in a course (cross-disciplinary diploma theses would be another way to do this).

There is a yearly assessment of the educational outcomes, a yearly internal evaluation, and a periodic external evaluation. Note that periodic review and revisions should be a continuous process with multiple feedback loops to allow for programme modernization without disruption of the student requirements towards graduation.

The curriculum revision procedures involve consultation of stakeholders, external experts, students, and graduates.

The structure of the study programme is rational and clearly articulated. The Department has a robust practical training programme, which is commendable, and it should be further supported.

It is noted that following the 2012 external evaluation of the Department, the redesigned undergraduate programme was introduced in 2016, thus, the first graduates from this redesigned programme will be in 2021, so the effectiveness of the new programme has not been adequately assessed, yet. However, partial data on how the cohort that started in the Fall of 2016 is progressing towards fulfilling degree requirements are available, and that could serve as a first gauge.

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

- Although there have been positive changes introduced in 2016, the structure and the philosophy of the curriculum, and most of the core offerings, have not changed that much. Comparing the 2016 AUTH ECE curriculum to current ones in the US, the main difference is that the AUTH ECE one has much wider breadth in the lower “core” division, spanning the entire ECE gamut. Breadth is a strength (and a luxury) in many ways. It is recommended to focus efforts towards a more agile programme.
- It is recommended that new redesigns should consider offering regular seminars or short courses or even introduce courses related to entrepreneurship, tech to market, technical

writing, soft skills, etc. This feedback was provided to the Panel by graduates, alumni, and employers. This will allow for a more balanced curriculum with the introduction of courses/seminars/ workshops on new and emerging technologies.

- It is recommended to put more emphasis on project based, team-oriented and interdisciplinary courses but not at the expense of basic, fundamental, theoretical coursework.
- It is unclear if alumni (graduates) and external experts are formally involved or invited to serve as members of the respective committees. If not, it is recommended to do so, and to invite especially alumni as members of the revision committee. Curriculum revision may entail not only courses offered but also additional “tools” such as seminars, short courses, tutorials, invited lectures, etc.
- The student guide is complete and thorough, but not concise, nor is it sufficiently exciting. It would be great to involve student organizations (i.e., IEEE, BEST) to engage in writing the student guide, including more guidance of the type “*These are the X different career paths you can take, and here is how you get there*”. It will be better to enrich the guide with more pictures of student projects, competitions, perhaps alumni stories, a section about “*Where do our graduates go?*”, a section about graduate studies in Greece and abroad, etc.

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 programme centers on fundamental theoretical, applied theoretical and technical education. The programme includes a core component of three years common to all students and a sector, specialization or concentration, component of two years. The curriculum includes lectures, laboratory sessions, coursework, and the mandatory six-month Diploma Thesis, all adding to 300 ECTS. There is a three-month elective practical training experience that provides an additional 15 ECTS units. The Department has a well-established electronic database where students find detailed information about the programme, all courses and course material.

The programme of study spans five years; however, on average, students graduate in about 7.2 (7.19) years – this is one of the highest in AUTH. The new law and legislation for higher education that was ratified by the Greek Parliament during this evaluation week may contribute to reducing the time to graduation.

The programme includes the three-year core/mandatory component for all students, which, by design, is rather inflexible, but provides a wealth of breadth information that, at the end, makes graduates more marketable. The two-year specialization component allows for limited flexibility in course selection as it centers on specialization-specific thematic sequences of courses.

The programme rigidity limits student ability to ‘improvise’, however, it allows for them to develop skills to cope with the rigorousness of the programme. Students are seen as active participants in Department activities, and they are encouraged to participate in undergraduate research.

The teaching process has substantially improved since 2012. There is a QA policy in place that is followed and owned by all parties involved, there are QIs that are evaluated and measured every year, some of which are specific to the needs of the Department. There is solid and apparently very healthy interaction among faculty, faculty-staff and among faculty-staff-students and this healthy environment facilitates better learning. Students speak highly of their instructors who are available even during these challenging times due to the pandemic.

There is a plethora of course delivery methods that includes traditional /conventional, electronic, and multi-media tools and support technologies. However, the infrastructure for information technologies to deliver lectures requires continuous improvement, along with creating smart and flipped classrooms with the ability for online use of course support technologies.

The situation in laboratory teaching has similar challenges. In addition to the insufficient number of laboratory staff, the laboratory infrastructure for educational purposes is at risk of becoming technologically obsolete in a field of rapid technological change. This negatively affects the quality of education that the students receive. The Panel strongly recommends that the Department not only hires more laboratory staff but also receives significant resources from the State and industry for modernizing laboratory equipment in cutting edge courses that are critical to the curriculum.

The Department has a course and instructor evaluation process in place, however, the percentage (%) of student involvement and participation is rather low, less than 17% - this has also been recognized by the faculty. Submitting course evaluations should be, somehow, incentivized.

There is an appeals process in place, but it is not well-communicated to the students.

Student participation in research activities is encouraged, and this constitutes a Department strength. The Department aims to improve the percentage of student involvement in undergraduate research in the years to come, and this is commendable. There exist impressive student teams that are also active in special projects, for example, electric car, and they participate in competitions, earning important distinctions.

The Panel has understood from their meetings with students that students are satisfied with their instructors; they speak highly of them and they have regular correspondence with them.

The building infrastructure seems to be sufficient for the time being, however, it could and should be better and more modern (this cannot be solved by the Department). Lab space is challenging, and lab requirements are difficult to meet because of the number of students. However, this limitation is overcome by extra lab sessions that are scheduled by the instructors themselves, such that students cover what is required in each course. This systemic problem needs to be resolved via new faculty hires, ETEP, EEP and EDIP members, and funding to create more labs and better lab infrastructure, and more space.

The library facilities (AUTH and Department) are sufficient and cover all needs, however library funding should increase. Regardless, staff is enthusiastic about their work, and faculty and students manage to sustain an effective learning experience.

Panel Judgement

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

Panel Recommendations

- The Department needs autonomy and authority to define/determine the number of new students to be enrolled.
- A well-defined monitoring process needs to be in place to monitor course improvement and instructor improvement when or if necessary.
- New faculty members will contribute to smaller class size, thus, better interaction between students and instructor.
- Efforts to involve many students to undergraduate research will benefit both the students in terms of placement and job opportunities, but also the Department in terms of ranking.
- The Department is very understaffed in terms of faculty and support staff. During the past five years, 12 faculty retired, out of which only 5 have been replaced. The support staff (ΕΔΙΠ, ΕΕΠ, ΕΤΕΠ) is currently 24. The faculty-to-student ratio is about 1/40 (an improvement over the 1/56.82 in 2012), which is still unacceptably high. It is noted that this ratio depends on the number of 'active' students; it differs considerably when the 'total' is considered, which includes the inactive students. Moreover, this 1/40 number ignores postgraduate students. This situation will be much worse in the years to come because of planned and mandatory faculty retirement without new hires, possibly affecting student productivity and limiting student ability to effectively interact with faculty members.

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

Students are admitted following a nation-wide matriculation examination (Πανελλαδικές Εξετάσεις). The quality of admitted students is very high to outstanding and the Department ranks very high in student preference all over the country. The number of students to be admitted every year is dictated by the State. However, the total number of finally admitted students is about 50% more when considering special groups, transferred students, etc., which may adversely impact quality. Moreover, the considerably larger number of students impacts programme delivery as it requires considerably more resources that are not available.

Students follow a thorough curriculum, heavy on courses, averaging six courses per semester during all except the 10th semester. There is a course pre-requisite structure, which is not automatically enforced by the registration system, which has been for years an obstacle.

Even though the idea of an academic advisor exists, it is not clear to what extent the advisor's recommendations are implemented and followed by students. Moreover, it is not clear whether the advisor concept is for all students or just incoming students. The Panel was told that the Department aims to assign an academic advisor to students for their duration of studies. That would entail a load of around 40 active student advisees per faculty member, which is a lot. As such, it is not clear how student progress is monitored, except from the transcript. In addition, there is no honours-track programme, which could have elevated the Department's reputation.

The ECTS is applied across the curriculum as expected.

The programme follows and meets State imposed general requirements that lead to the Diploma of Electrical and Computer Engineer (the equivalent of Diplôme Ingénieur), which is accompanied by the corresponding professional rights recognized by the Technical Chamber of Greece (TEE).

There is an elective three-month practical training, which is in addition to the programme (300 ECTS). It is considered valuable by students who follow it, and employers encourage it. However, due to government restrictions, it cannot be enforced for the time-being.

Panel Judgement

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

Panel Recommendations

- The Panel recommends accelerating and fully implementing the student advisor idea, starting from the first years, and initially including regular consultations with students during their first three years (until they select a specialization area). Each student should meet with the advisor once a semester to evaluate and monitor progress and also develop contingency plans in case of hardship.
- A formal appeals process must be better communicated to the students.
- An automated system that checks for prerequisite compliance must be put in place.
- The practical training idea has merit. The Panel recognizes the logistical difficulties, but it believes it improves substantially the overall programme and makes graduates more marketable.

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

The ECE faculty are active in professional and academic meetings and conferences. Processes for hiring and promotion follow the accepted protocols for all Greek Universities. Many faculty members are doing outstanding work.

Faculty members are active in various conferences and events where cutting-edge research is presented. The participation and impact of the faculty in these scientific venues is growing, leading to some research reaching outstanding international visibility and recognition. This should be strengthened and encouraged with the proposed hiring of new faculty. Consulting agreements with local and regional industry seem to be going very well. Sabbaticals in universities outside Greece could be promoted further, as this will advance internationalization of the faculty, support entrepreneurial aspirations, and further modernize the curriculum.

The teaching load is by far one of the most challenging issues the Department faces, inhibiting the faculty's more active involvement in research activities. The faculty must be commended for their excellent research productivity despite the obvious obstacles. Over the past decade, this problem has worsened due to increased enrolments, a large number of inactive students, and loss of faculty due to the financial crisis. In the face of such adversity, the ECE faculty have shown tremendous resilience, ingenuity, and camaraderie in keeping the curriculum at a high level, often at personal cost despite declining government support.

The new law has proposed the reduction of inactive students, which will be welcome. Furthermore, the implementation of the rather heavy curriculum (despite the significant 2012 reform) rests primarily within the Department even for courses in core subjects (mathematics). There are also limited electives outside the Department.

Going forward, the situation is projected to be far worse due to the age distribution of the faculty in the Department. With numerous upcoming retirements, the Department will soon

reach a situation of crisis unable to meet the demands of the curriculum. New faculty should have a reduced load in the first year to build their research enterprise. Foundational or existing courses could be left to faculty that have been with the Department for longer periods. Over time and across many hires, this will result in a natural rejuvenation of the curriculum.

The teaching load across sectors is imbalanced. The number of students across sectors is not equal even though the number of faculty across sectors is equal.

This imbalance is a trend that is global in many ECE Departments and many colleges of engineering with the explosion of student demand for computing oriented courses. In addition to faculty hiring in strategic areas, there are only two solutions to this problem: Improved Department agility (new sectors, new labs) or mechanisms for measuring and balancing the teaching loads. Given the sector-based structure of Greek universities, it is recommended that mechanisms for better balancing of teaching across sectors and across faculty (beyond lecture hours) be developed. Reducing requirements further, ECE faculty could focus on ECE courses and labs and have more cross-sector flexibility; the Department may offer electives offered in other Departments (especially for entrepreneurship, computing), and more computer science-oriented electives; engage industrial partners in the teaching mission (as adjuncts); introduce other mechanisms to not only reduce but also balance the teaching load across sectors.

The boundaries across ECE are blurring significantly. For example, researchers in networking and signal processing are working in data science or energy markets. Researchers in control are working on machine learning or optimization. This interdisciplinary area is creating new researchers that know no boundaries and may conduct research as well as teach basic courses in many fields. This intellectual flexibility will result in better balancing in the future.

The diversity within the Department is a very evident weakness. A Department with roughly 20% female students should have more than three female faculty as role models. As the Department hires over the next few years, hiring female faculty should be an important consideration for the future.

The Department has excellent researchers, including world-class and award-winning researchers, on the cutting edge of their respective fields. This naturally leads such faculty to incorporate research excellence into the classroom. Furthermore, there is a significant number of undergraduate students that publish their research (from their degree thesis) in international conferences and journals. The Department should highlight these achievements of its extraordinary students.

There is a formal evaluation process. While the number of returned evaluations is low, the Department is fully aware of this poor response rate being an issue and has plans for improving it in the future.

The Department has a sector-based structure, which is very clear. This structure affects virtually all strategic and operational aspects of the Department and impacts the structure of the curriculum. Therefore, indeed the Department structure is well-defined. With upcoming retirements and the need for many hires, the Department is encouraged to develop collectively a five-year strategic plan, which will guide hiring within and across sectors as well as consider the impact on the curriculum.

Panel Judgement

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

Panel Recommendations

- The Department should consider establishing an awards committee for celebrating the achievements of its faculty, students, and staff.
- Professional development activities may be enlarged and amplified to encompass assistance in developing/submitting patents, participation in incubator activities, sabbaticals, participation in multi-country research proposals pursuing calls by the EU, pursuing opportunities to guide students (undergraduates and doctoral students) to participate in international competitions, etc.
- The Department should aim for having up to 1 sabbatical per sector per year (maximum 3 total/per year). This will be feasible by adding new staff members, broadening of teaching portfolio per faculty, but also by adding more cross-sector flexibility in the curriculum.
- Faculty should not only be encouraged but also assisted (financially and otherwise) to actively participate and contribute to technical events.
- Hiring faculty will be critical in sustaining one of the best ECE Departments in Greece. We recommend that the Department is given the opportunity to recruit numerous faculty members not only to replace retirements but also expand in new modern ECE directions. In the beginning, new faculty should be allowed to develop and bring fresh new, cutting-edge courses to the curriculum (rather than teaching foundational courses). Senior faculty should collaborate with new hires in writing research proposals.
- We recommend mechanisms for better balancing teaching across sectors and across faculty (beyond lecture hours).
- The Panel strongly recommends that the Department not only hires more ETEP, EEP, EDIP members, but also receives from government significant resources for modernizing the laboratory equipment in cutting edge courses that are critical to the curriculum.
- The Department is encouraged to develop collectively a five-year strategic plan, which will guide hiring within and across sectors as well as consider the impact on the curriculum.

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

The Department facilities have not improved over the years, due to several systemic reasons, and funding. The Panel recognizes efforts made by the University and the Department to allocate research-oriented funding towards infrastructure improvement, but this is limited. Lab facilities are outdated at times and may be obsolete soon. Lack of government funding impacts modernization.

The Department has made and makes every possible effort to provide support facilities to students, and the collegiality among its members pays dividends.

Non-educational facilities are limited and mostly understaffed.

The administrative staff is very professional and overworked.

Unless there is substantial investment from the State, the Department risks being not fully compliant in the future.

Panel Judgement

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

Panel Recommendations

- Additional and substantial funding is required to improve infrastructure.

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 analyzing information and planning follow-up activities.

Study Programme Compliance

The Department has established formal procedures for the collection of data regarding the student body, teaching methods and student progression. Employability and career path data are obtained through close relationship with the industry and the corresponding information is evaluated.

The Department uses a fully functional information system to which academic staff, students and alumni have access. Academic and administration staff provides input to the Quality Control Information System and data is processed to form KPI showing the research activity, funds of research projects, all information regarding faculty, courses, data input from SCOPUS, Web of Science και Google Scholar databases, student and faculty mobility, infrastructure evaluations, students' replies to evaluation surveys, awards and achievements.

Student satisfaction surveys are conducted through questionnaire forms that can be filled-in by students and are available in the AUTH information system.

The MODIP analyses the information received from satisfaction surveys and disseminates results to the academic units.

The Department evaluates the reports produced by the student and staff satisfaction surveys.

The collected data is properly presented in graphs allowing for direct interpretations and comparisons.

Panel Judgement

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

Panel Recommendations

- The Panel believes that collected data should be properly used towards continuous improvement of all processes.

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 Department has a very informative web presence with detailed information on academic activities, student support services, the curriculum, the faculty and their research, and its quality assurance policy, targets, and metrics. Overall, there is a wealth of information that is readily available. The Panel especially appreciated the Department's efforts to ease the transition of first-year students, from the special welcoming section on the Department's website to the remarkably well-done video tour of the Department that is posted on the Department's website and is updated every year. The Department's web presence is comprehensive and functional.

Key information regarding the Department and the study programme is available online, and it is easily accessible from the Department's web.

All course outlines of the programme are available online and they are easily accessible from the Department's web.

The AUTH policy for QA is available online and it is easily accessible from the Department's web.

All 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 the Department's landing page a more modern feel, with a few impactful visuals, showcasing recent success stories, labs, student and faculty distinctions and awards. This would add to an already substantial online presence.

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 Department have well-established self-evaluation processes that guarantee quality assurance. A comprehensive set of QIs has been established. Both the OMEA and MODIP receive and analyse data to continuously improve programmes and deliverables.

There is evidence that action plans are developed, revised, and implemented and that findings are communicated to the Departments by their respective MODIP representative.

Panel Judgement

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

Panel Recommendations

- Continue this path, streamline the process, make sure the QIs reflect accurately set objectives.

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 Department went through external evaluation in 2012. The findings of the evaluation committee at that time led to the programme restructure starting in 2016. The Department provided to this Panel evidence of steps taken to address the committee's findings.

The Panel acknowledges the efforts and hard work since 2012, the progress is evident, the curriculum is more streamlined and more flexible

There is some evidence that external stakeholders and employers are consulted for programme modifications, but there is no industrial advisory board (IAB) or any other formal interaction to make this correspondence more efficient.

Faculty, support staff and administrative personnel are very aware of the importance of the external evaluation and have done their best to comply with the whole process. All involved parties are helpful and willing to help.

Panel Judgement

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

Panel Recommendations

- The external evaluation process must be a regularly recurring event, once every five or six years, with a strict requirement to address and start implementing recommendations within one year.

PART C: CONCLUSIONS

I. Features of Good Practice

- The Department has done a remarkable job with the programme restructure of 2016. The curriculum is modernized; there is a clear five-year course organization structure covering semesters 1-6 and 7-10; the number of courses has been reduced; compared to 2012, students have more flexibility to choose courses; labs have been modernized and upgraded; practical training has been introduced.
- The programme graduates top engineers who are easily employed within and outside Greece. Interviewed employers and external partners have a very high opinion of the programme graduates, ranking them as top engineers.
- There is a fully functional and efficient electronic system in place for all course and other informational items required.
- The Department has a very informative web presence with detailed information on academic activities, student support services, the curriculum, the faculty and their research, and its quality assurance policy, targets, and metrics. The Department's web presence is comprehensive and functional.
- The University and the Department have well-established self-evaluation processes that guarantee quality assurance. A comprehensive set of QIs has been established. Both the OMEA and MODIP receive and analyse data to continuously improve programmes and deliverables.
- There is a plethora of course delivery methods that includes traditional /conventional, electronic, and multi-media tools and support technologies. However, the infrastructure for information technologies to deliver lectures requires continuous improvement, along with creating smart and flipped classrooms with the ability for online use of course support technologies.
- There is solid and apparently very healthy interaction among faculty, faculty-staff and among faculty-staff-students and this healthy environment facilitates better learning. Students speak highly of their instructors who are available even during these challenging times due to the pandemic.

There is no comparison between 2012 and 2021. The Department has been completely re-organizing building on its traditional strengths, it has a modernized look and graduates top engineers. It is a healthy environment, a functional family, which promotes top education, collegiality, and professionalism.

II. Areas of Weakness

It is noted that several concerns are due to 'systemic' problems outside the University. However, such weaknesses, long-term, may negatively impact the Department. Such weaknesses are:

- Lack of substantial, annual, funding from the State to cover and support all educational needs.
- Lack of sufficient faculty members and support staff to cover all Department needs.
- Unusually high number of incoming students, at least 50% more than those who qualify, and they are admitted through the matriculation exams – this requires substantially more resources that the State does not provide.
- It is essential to, somehow, formally introduce the concept of ‘Teaching Assistant’ that will greatly facilitate course delivery and help instructors, who are overworked and underpaid.

Other recommendations / concerns relate to a more flexible curriculum with more electives, better engagement of alumni, graduates and other stakeholders in programme/curriculum improvements, establishing an alumni organization and making more appealing and inviting web designs.

III. Recommendations for Follow-up Actions

The Panel is very pleased with the Department’s activities and efforts to improve and modernize its curriculum. The student body is excellent. The Panel was truly impressed with the quality of the students that met with the Panel – their maturity, sophistication, technical depth, and creative spirit. The department is nationally very competitive in terms of student input/demand, and this shows. The reputation of its students, and the quality and collegiality of its faculty and staff are the greatest assets of the department.

Faculty and staff are overworked and underpaid, and they deliver beyond expectations. Resources are unacceptably low, and State-imposed regulations and restrictions impact negatively further progress and advancement.

The Panel believes that the University as a whole and the Department must be autonomous and independent to set up and follow their strategic plan(s).

It is a must to form an Industrial Advisory Board (IAB) to increase and improve interaction and feedback between the Department, marketplace, and all external stakeholders.

The Panel further recommends creating an entity or organization to track the Department’s graduates and their professional advancement. Evidence shows that the graduates are very successful professionally. They should be given a chance to be involved with the department, in various capacities – including curriculum development, stewardship, and even sponsorship of various student-centric activities.

Another idea worth considering is to create a forum to showcase faculty and student accomplishments, activities, and awards. This will improve external visibility, allow for better and more interactions, increase student and faculty mobility, and further strengthen the Department’s reputation. Finally, the Department should consider creating an annual Department communications report, highlighting student success stories, faculty news and accolades, alumni news and accolades, patents, student team events, etc. Much of that

information can be solicited or extracted from faculty reports, and student groups such as IEEE, BEST, Aristotle can be tapped to provide content.

IV. Summary & Overall Assessment

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

Name and Surname

Signature

1. ***Dr. Kimon P. Valavanis, Professor (Chair)***
University of Denver, USA

2. ***Dr. George Pappas, Professor***
University of Pennsylvania, USA

3. ***Dr. Nikos Sidiropoulos, Professor***
University of Virginia, USA

4. ***Mrs. Kyriaki Tsitogianni***
Member of the Technical Chamber of Greece, Greece

5. ***Dr. George Vachtsevanos, Professor Emeritus***
Georgia Institute of Technology, USA