Accreditation Report

for the Undergraduate Study Programme

(Integrated Master) of:

Computer Engineering and Informatics

Institution: University of Patras

Date: 15th June 2019

Report of the Panel appointed by the HQA to undertake the review of the Undergraduate Study Programme (Integrated Master) **of Computer Engineering and Informatics** of the **University of Patras** for the purposes of granting accreditation

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PART A: BACKGROUND AND CONTEXT OF THE REVIEW

I.   The Accreditation Panel

The Panel responsible for the Accreditation Review of the Undergraduate Study Programme (Integrated Master) of Computer Engineering & Informatics of the University of Patras comprised the following four (4) members, drawn from the HQA Register, in accordance with the Law 4009/2011:

1. *Prof. Nik Bessis (Chair)*

   Edge Hill University, UK

2. *Prof. Constandinos Mavromoustakis*

   University of Nicosia, Cyprus

3. *Prof. Sotirios Skevoulis*

   Pace University, USA

4. *Mr. Nikolaos Siadimas*

   Technical Chamber of Greece

II.   Review Procedure and Documentation

The Accreditation Panel members (AP) attended a meeting at the HQA headquarters in Athens Aristidou 1 on Monday 10/6/2019, during which staff of the HQA (the President and General Manager) explained the Accreditation Procedure, and the role and tasks of the AP members. The documentation and the supporting material provided to the panel included:

- the evaluation guide created by HQA,
- the mapping grid, created by HQA, which was very helpful in mapping the contents of the different principles to questions to be answered during the site visit,
- the accreditation proposal ("Πρόταση Ακαδημαϊκής Πιστοποίησης του ΠΠΣ") prepared by the department,
- a set of annexes with the accreditation proposal, explicating various issues and providing detailed information; including the study guide, course descriptions, policies' documents, etc,
- a set of documents presenting quality indicators both for the department and the study program, the report of the 2012 external evaluation conducted by HQA for the Department,
- a set of presentations used by the HQA staff members to present the purpose, goals and procedures of the accreditation.

The AP members met privately afterwards for about an hour to discuss their initial impressions of the Department. On Monday afternoon the AP traveled to Patras, checked in at the hotel and at 4pm was picked up by the department representative and traveled to the department site.

The site visit to the Department of Computer Engineering & Informatics at the University of Patras started on Monday 10/6/2019. The site visit for the day lasted from 16:30 to 20:00. The whole site visit finished at 17:00 on Tuesday 11/6/2019.

On the first day (Monday 10/6/2019) and at the welcome meeting, the AP met the Vice-Rector of Academic Affairs & International Relationships and President of MODIP, Prof. Nikos Karamanos, and the Head of Department, Prof. Efstratios Gallopoulos. AP was given a broad overview of the history and current situation of the University, and was informed about the Quality Assurance Procedures of the University. The Department participated fully in the university's evaluation processes.

Prof. Gallopoulos made a short presentation of the history of the Department, which was founded in 1979 and accepted its first cohort of undergraduate students in the following academic year. He explained various aspects concerning the study program and its objectives, staffing, numbers of students, program progression and completion statistics, and the preparation of the students for the job market.

On Monday evening and all day Tuesday the AP had meetings with:

1. MODIP representatives (Prof. Karamanos, Prof. Karalis, Prof. Giannikos, Prof. Berberidis) and members of OMEA (Prof. Kaklamanis, Prof. Alexiou, Prof. Garofalakis, Prof. Xenos, Prof. Stefanopoulos). The above-named Quality Assurance representatives explained the Department's evaluation processes, which are coordinated by the OMEA (Internal Evaluation Committee of Department), and answered a series of questions from the AP, providing supplementary information.

2. Members of the Faculty. We had a comprehensive discussion about the department, the goals and the procedures of the accreditation and their participation in the departmental life. They all seemed satisfied with their workload and their responsibilities. The AP discussed with them their professional careers, workloads, staff mobility, their understanding of student-centred teaching, the linking of teaching and research, structure of the study programme, and other such matters.

3. Employers and social partners (Mr. Dionyssis Kantas, Section Manager Telco Software Design Center, Intracom, Dr. George Karanikolos, President Knowledge Broadband Systems, Dr. Alex Maniatopoulos, Managing Director Yodiwo, Dr. Spyros Papadakis Regional Center for Educational Planning of Western Greece, Mr. Kostas Svoukas Patras Development Center Manager, Intrasoft, Dr. Stelios Koutroubinas, Managing Director MEAZON, Mr. Paris Zafeiris, Senior Engineering Director, Citrix). They all spoke very highly about the department and its graduates expressing their admiration of the high-quality graduates. They confirmed that they accept many students as interns while they are working on their practicum and an impressive percentage of them (about 80%) receive offers from their companies to stay as full time employees.

4. Students and Alumni. The AP met with approximately 10 alumni and 15 students to discuss their experience of studying at the Department and subsequent activities. The alumni stated that they all had found jobs upon graduation. The AP asked them about their satisfaction with the Department and the study program, their involvement in evaluation processes, and the possibilities they had of participating in research activities. Both students and alumni expressed their enthusiasm with their learning experience and had an excellent opinion about their relationship and interactions with the members of the teaching and administrative staff.

On Tuesday afternoon (14:00-15:30) the AP was given a tour of the department's own building, visiting classrooms, computer laboratories and other departmental facilities, accompanied by the Head of Department, the Chair of OMEA, and members of administrative and academic staff. Following that the AP had a tour of the main campus and visited the office of student affairs, the library. AP also visited the construction site of the new facilities of the department. The new facilities are scheduled to partially open in September of 2019 with plans for full opening of the entire facility for sometime in the year 2020 that will mark the 40th year of the department.

The AP would like to thank the Vice-Rector, the Head of Department and their colleagues for this helpful tour, and in general for the very positive and professional atmosphere in which the site visit was conducted. All members of the Department were very willing to collaborate with the AP and provide further information when requested. The extensive documentation provided in advance, and in hard copy and on a flash disk during the visit, forms the basis of the current report.

III.   Study Programme Profile

The Department of Computer Engineering & Informatics was founded in 1979 and it accepted its first cohort of students in 1980; it is the first computing department in Greece. It provides a range of undergraduate and postgraduate taught programmes and research degrees at PhD level.

The programme under scrutiny is an integrated masters and of a 5-year duration. The programme aims to provide an in-depth knowledge of computer science foundation and applications, computer logic, web technologies and telecommunications. The department has established a plethora of partnerships with industry, which clearly works to its benefit.

The number of students is increasing year on year demonstrating the department's and programme's popularity. In the last academic year, it attracted 214 new students plus 112 students transferred from other universities.

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 AP felt that the Quality Assurance Policy of the Department of Computer Engineering & Informatics at the University of Patras is fully compliant with the University's system of Internal Evaluation processes. The site visit provided evidence and demonstrated to the AP that the Department's commitment to developing further appropriate quality procedures and link every procedure with quality indicators is commendable.

The Department underwent external review of its undergraduate programme in 2012 and has addressed some recommendations made from the external panel members in the 2014 report. From this it is clear to the AP that the Department has a willingness to promote the quality and effectiveness of its teaching, and that it puts the needs of the students at the heart of its

activities. However, there are many issues raised by the previous external reviewers that were not well addressed or addressed at all. Some of these are: the more 'learning outcomes orientated' approach that should be adopted, the courses that should be rationalized (and modernized), some courses should be revamped and avoid unnecessary overlap of material, the assessment procedures should be improved, and continuous assessment should be implemented as well as the "Student's Advisor" role should be further enhanced and applied to all years of study in a formalized manner.

The Department's Study Programme Committee (SPC) is responsible for reviewing the study programme. There is a periodic (usually annual) review process, which guarantees dynamic and continuous improvement, and enables research developments to be incorporated in the teaching. The Internal Evaluation Committee (OMEA) is responsible, in collaboration with the university's Quality Assurance Unit (MODIP), for overseeing the quality assurance processes of the Department and for evaluating their effectiveness. The OMEA is responsible for presenting and discussing the data and analysis of the annual evaluation with all Department members at the General Assembly.

The AP found that the Quality Assurance Policy is communicated to all parties. There is up-to-date information on the Department website (KPIs, analysis and statistical data etc.), including the annual evaluation summaries and the report of the External Evaluation that took place in September 2012. The courses are evaluated by students on an annual basis through questionnaires and since the year 2017/18 the system has been improved by the introduction of electronic questionnaires, which also allow students to enter free-text comments. The Department mentioned that the participation rate by students has significantly improved since the electronic system has been adopted, whereas on the other hand, students feel that the system needs improvements to allow them to elaborate further with their comments on the system. The AP members were also informed by students that the Department actively promotes their involvement in the evaluation process, and confirmed with the students their willingness to participate actively in the evaluation process. Students also confirmed to the AP members that the individual course evaluation questions are "general" and usually do not address the existing problems that students face in a course. It is worth noting that the questionnaire is designed by ADIP and that there is a textbox for free comments where students could use for voicing specific comments.

The AP members have the impression that the Department's curriculum is suitable in terms of its academic content and is in line with the National Qualifications Framework. It is designed to promote effective learning of high quality, with courses taught by well qualified academic staff. The staff are research active and seek to incorporate their research into their teaching, to the extent of publishing papers with students (co-producers of knowledge) as a high-grade requirement at undergraduate level. It is indicative that the students are encouraged to produce a publication during their Thesis course (Final Year Project) as a motivation of reaching an excellent grade. In this way students and teaching material are linked in a productive way.

It is worth mentioning that the administrative staff offer services to the students, in a well-organized manner. They are easily approachable (even during hours that are not student hours),

they are available in person as well as via phone and email. Information can easily obtained online and even claim a certificate outside the working hours. Students and staff seem to be actively participating in the local community and industry through social and training activities.

Panel judgement

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

Panel Recommendations

1. The AP feels that the Department has progressed over the years however, based on the recommendation made by the external committee in September 2012, the level of progress was not at the anticipated level of what the Department, that used to be the "Founder and Leader" in Computing, reaches at the current state. For example (as students indicated and the AP members spotted) some of the courses should be rationalized (and modernized) and continuous assessment should be implemented as well as the "Student's Advisor" role should be further enhanced and applied to all years of study in a formalized manner.

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 programme of study was developed in accordance to the relevant policies of the institution. The Internal Quality Assurance System aims to achieve a high-level of quality provision. The previous accreditation visit identified a high number of courses which also required modernisation. In this visit, the number of courses have been decreased by merging courses. The AP felt that there is incremental continuous improvement. The AP felt that there is a plethora of subject specific courses. The decreased number of courses is heading towards the right direction yet further reduction will help enable the inclusion of more modernised courses.

These processes are compliant with the international practices of the European Higher Education Area as well as the principles and guidelines of ADIP. Both MODIP and OMEA oversee the internal and external evaluation and quality processes at a university and departmental levels. The AP is satisfied with the level of periodic review compliance in relation to the department's adherence to Quality Assurance policies and standards, as stipulated by HQA code of practice. The AP suggests the involvement of students and industrial partners in the curriculum design process. The AP is also satisfied with the way processes are taking place.

The annual report reflects the overall compliance of the department. The annual report also reveal variance in courses pass rates which requires some attention. Appropriate monitoring and support mechanisms will help with students' retention, progression and completion.

The strategic aims are focused on high quality provision, improved relationship with industry partners; production of high quality research; promotion of excellence for innovation; effectiveness of administration services and improvement in infrastructure and facilities. The AP felt that the strategic vision of the department requires to be bolder, stronger and more ambitious.

The institution and department pay particular attention to the importance of external engagement with academic and professional communities at local, national and international levels and through partnerships, bilateral agreements and Memorandums of Understanding. They seem very strong and supportive in terms of providing guest lectures and opportunities for student challenges, hackathons and working experience. Hackathons are available for years' 4 and 5 students. A more horizontal approach involving students from all years may help develop a sense of community and a feeling of belonging. There seem that relationships with industry require strengthening by formalising their existing engagement modes but also extending these to include engagement in open days, career fairs, curriculum design, knowledge transfer opportunities, lab sponsorships and staff secondments.

The department's official procedure is compliant with the legislative framework of the University.

The department has developed an online questionnaire to enable all level students voice their opinion about quality of courses and provision as a whole. Results demonstrate that students were more than satisfied with these.

Panel judgement

Principle 2: Design and Approval of Programmes	
Fully compliant	
Substantially compliant	x
Partially compliant	
Non-compliant	

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

In case of negative judgement, please justify

Panel Recommendations

1. The department should continue to consider the further decreased number of courses and focus on their mondernisation. The team must monitor the use of subject specific optional modules.
2. The team must monitor progression rates for each course and produce relevant action plans and support mechanisms to improve pass rates.

3. The already established excellent relations need to be formalised and structured to increase benefits throughout the whole study cycle.

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 AP is pleased with Institution's determination towards a student-centered learning process. It has been constantly reported that the department puts students at the heart of the learning activities, enhancing their academic engagement and motivation. The Institution has created and maintains an open communication path between its students and faculty members, ensuring that the creative dialogue is held, aiming at the constant improvement of the program.

The AP members discussed the pedagogical methods used and aligned well with the courses of the technological domain, in a group oriented work undertaken both during and after regular teaching. Overall, the students are exposed to a range of assessment methods, such as individual and group work, final exams, multiple-choice assessments and practical project work.

The assessments are appropriate for the level of the courses, and they allow students to demonstrate how they achieve the intended learning outcomes for each one of the courses. The AP notes that students -in their vast majority- feel well supported by the staff and enjoy an excellent working relationship. A "more-open door" policy should be applied by the faculty members of the Department in order to further enhance the students' interest and participation to the courses by the time they are admitted (early days in the department).

The AP recognizes the Department's commitment to document student feedback with regards to academic and learning experience. On an annual basis, the department distributes online questionnaires to its students, addressing its and every aspect of the teaching activity. Upon completion, the results of these questionnaires are published online.

Additionally the adaptability of the students while being introduced into the market is evidently high while at the same time the social partners declared clearly that the graduates of this department have in their vast majority a fast learning curve.

It was noted that the annual monitoring process is overseen by OMEA, and their reports are considered by the General Assembly of the Department, before they are forwarded to MODIP for further consideration. This important process was confirmed during the meeting with academic staff, who offered examples of how the curricula undergoes regular review, taking into account student feedback but also their collective research interests.

The Department's commitment to a spherical education that would cover technical, personal and professional attributes has been noted. Having established the role of mentor professor has provided the students with a necessary guidance and source of information to help them choose the appropriate professional and academic direction.

Furthermore, the department's participation in European and international students exchange programs (Erasmus+) is a catalyst of international scientific dialogue, open-mindeness and tolerance. While opportunities for internships as well as team projects as an alternative way of examination enhance students' creativity, team-spirit and accountability.

Finally, the AP has noted that the services of the Department's secretariat are excellent addressing the needs of numerous students on a daily basis and ensuring the regular operation of the institution.

Panel judgement

Principle 3: Student- centred Learning, Teaching an Assessment	
Fully compliant	x
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

1. It would be desirable for the Department to expand its existing co-teaching scheme to cover more courses (in cutting edge fields) across the programme, in an effort to align even further the theoretical with the practical aspects of the Computer Science discipline. The AP feels that this would be a good approach to enhance learning and teaching and strengthen the currency of the programme.

2. The Department should formalise an "open-door" policy further to the existing office and student advising hours in order to improve the Department's KPIs (retention, progression, completion and satisfaction). This use of the service should also be monitored.

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 Department adheres to the student admissions processes as set by the Greek Ministry of Education, and which are based on National University admission and Entrance exams as well as grades obtained from the high school certificate.

Prospective students and their parents can benefit from outreach activities and the open days that the Department organises. New students receive an induction to the programme and the organisation of the Department in the very early part of the studies. In order to provide all students with the necessary foundational knowledge irrespective of their background (as many transfer students from other departments are accommodated), the Department offers an induction to the admitted students. However, this induction may also be posted on the web, in a well spotted for the students location, in departmental site so that students can be aware of this induction and get informed even if they are admitted late.

The progress of students is supported by having regularly planned meetings between students and their academic advisors. In practice academic advisors exist only for the 1st and 2nd year students only and this sometimes creates discrepancies between students. The student data captured are used to produce performance indicators for each course which could be further used to monitor and act upon students' progress and completion but no documentation of a specific process was found in the Quality Assurance Policy document or the Programme Study Guide. The Programme of Study offers an opportunity to undertake a final year project during the fifth/final year of study. The requirements for the final year project are clearly described in the Programme Study Guide.

Student mobility is actively promoted by the Department which has developed numerous bilateral agreements with European Universities whereas the role of Erasmus+ coordinator has been assigned to a member of staff. The students seem satisfied with the mobility programme

and make good use of it. During the meeting with AP, they stated that they receive excellent support from their advisors in this matter. The Study Programme describes student placements and practicum as an optional component of the curriculum whose duration is two months and normally takes places within industry sectors locally and abroad. The AP is pleased to see that the students are very enthusiastic about placements and that the range of opportunities is comprehensive. Academic staff in some cases supervise students during their placement period by conducting onsite visits whenever possible.

The list of total 42 institutions accepting placement of students should be found in the Programme Study Guide and on the Department's website in a clear and obvious manner. Members of the department should find more ways in attracting more industrial bodies in various subsectors in cutting edge fields and more bilateral agreements in place which would make the nature of collaboration with industry stronger, potentially leading to additional placement opportunities.

Finally, the Institution has created procedures for award and recognition of higher education degrees, studies duration, rules for students' progression, recognition of credits among various European academic Institutions according to Lisbon Recognition Convention. Students receive documentation explaining learning outcomes, context, level, content of studies completed culminating in qualification gained. Upon graduation, a Diploma Supplement is automatically provided to all students, following a University-wide policy, including information on ECTS credits and the courses successfully passed.

Panel judgement

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

Panel Recommendations

1. The AP recognises the efforts of the Department to support students in their demands. However the AP recommends that the existing efforts for the periodic review of the curriculum are maintained in the future, thus ensuring that the needs of students are addressed in the best possible way. In addition, some courses are totally outdated having the same course outline and content (as students indicated) for several years. This is also related with the short-term and long term-plans and scientific strategy of the Department which seems that it could be much stronger, particularly when it comes to cutting edge courses' development.
2. The Department could consider whether the formalisation of its existing network of external partners through the development of bilateral agreements, could help secure more placement opportunities for students as well as remarkable consideration could

be given to the possibility of a more comprehensive network of external partners and stakeholders.

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 Department is fortunate to have a high-quality group of committed faculty members (19 Full Professors, 6 Associate Professors, 1 Assistant Professor) and special teaching staff (6 ΕΔΙΠ members) dedicated to serving the students and the University. They uphold the highest standards in their teaching, research and service duties. Emphasis is given in highlighting the importance of teaching and research as it is evident by the strong research results and teaching evaluations. The department follows the well-established procedures by the Greek law for the selection and promotion of its faculty. The policies and procedures followed by the Department (CEID) are prescribed also by Regulations and By-Laws set forth by both the state and the University of Patras. The department tries hard to make full use of the rather limited financial resources to assure proper professional faculty development. Every faculty member and PhD student is encouraged and supported to submit a paper and/or travel at least to one international conference with all expenses paid by the department. Staff mobility is achieved by sabbatical leaves and Erasmus program. The department offers one semester of sabbatical leave every three years. Understandably the development budget has to be aligned with the overall budget and financial situation of the University of Patras.

Teaching faculty bring quality research into the classrooms and get students involved in research projects as early as possible in their course of study and no later than their third year. The department encourages the publication of student work. Faculty maintain regular office hours (4 hours per week) and make themselves available to answer student questions.

Students do have concerns though, with the contents of some courses suggesting that not only more cutting edge topics to be included in existing courses, but also new courses need to be developed.

It is the understanding of the AP that currently there are no plans for recruiting any new faculty members in the foreseeable future. The AP noted that there is no female faculty staff.

Panel judgement

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

Panel Recommendations

The department has established frequent self-assessment procedures for its faculty. AP would recommend the establishment of a common questionnaire (Faculty Activity Report) for all faculty where they will be asked to report their teaching/research/service achievements/participation in the current academic year. This will assist the faculty to prepare their promotion dossiers and also provide them and any external/internal evaluation committee to glance over their achievements on a particular year or set of years.

A common problem in most Greek Universities is the low percentage of students participating in the faculty evaluation process. The AP would also recommend to the department to make every effort to increase the percentage of student participation in the course evaluation process every semester. While the current percentage could be considered satisfactory, an increase would give the department a more informative tool to monitor the quality of the courses.

In line with the increased number of entering students every year, AP would recommend a strong effort in requesting new faculty lines from the University and the Ministry of Education immediately. Bringing new and energetic faculty will revitalize and refresh the course offerings, and the overall academic atmosphere of the department.

The department needs to work on developing female role models as to enhance the opportunities to recruit and maintain female faculty staff.

The AP recommends the establishment of peer review processes among its members both for teaching and research evaluations and combine those with the ones by the students.

As the department moves well into the 21st century, the need for new faculty will become more evident and pressing. The AP recommends the establishment of mentoring processes for junior faculty in order to support their first steps towards teaching at high level and successful research grant proposal writing.

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

Currently, the Department of Computer Engineering & Informatics utilizes for its teaching needs 3 amphitheaters, 1 classroom, 3 seminar halls, library, 1 computing center, computing labs, research offices and one student office. These appear to be relatively sufficient for their lecturing needs. Within the next one to two years the department will move to brand new facilities currently under construction. Those facilities will add 1 more amphitheater, 7 large (70-150 student capacity) classrooms, 70 faculty and staff offices, conference rooms, etc.

The department is housed in a one of the oldest buildings on campus with all the problems that come with that, i.e. lack of easy access for people with special needs in certain classrooms. The building is kept in relatively good condition.

The administrative staff for the department is also housed in the same building. It is sufficiently staffed, well equipped and organized. They offer support to students and staff in a fast, efficient manner. They are friendly and available sufficient amount of time.

Student have access, based on criteria set by the University and the State, to dormitories. There are also careers office and student welfare office. The department maintains high quality athletic teams. Their basketball team won the championship last year and this year are getting ready to launch a women's volleyball team. Students seem to be aware of the available services with the exception of the faculty advisor service which was introduced last fall and only first year students are fully informed about it.

Panel judgement

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

Panel Recommendations

The AP suggests the Faculty Advisor policy to be communicated and expanded to all students not only the first year ones. The current policy creates a confusion and possible discrimination against the more senior students (especially second and third year) who do not have formal access to a faculty advisor.

AP would also recommend that the department takes as soon as possible the necessary steps to ensure appropriate and adequate means of transportation for its students considering the location of the new facilities that will open next year. Either University operated bus service or KTEL service.

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 developed the email for CEID which is compliant to the university standards. The department has contributed significantly to the development of the information management system, which is being used by MODIP that is responsible for overseeing the continuous improvement of its academic provision and research outputs.

The department has also developed a questionnaire for freshers to provide details of their academic background as a way to understand diversification and support students at the very early stage of their studies; this is a very good practice.

The annual report is focused on the internal evaluation of standards. It provides a number of tables with performance related information and graphs on student satisfaction, courses and programmes pass rates, student progression and completion rates. It also provides details on research outputs and funding. Staff survey results were not available.

The overall process that the university employs, ensures that the anonymity and confidentiality is secured for this data.

Panel judgement

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

Panel Recommendations

The AP recommends that the department develop a KPI strategy on student progression and completion so the team can develop a benchmarking culture.

The AP also suggests the department perform a staff satisfaction survey.

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 maintains an excellent IT infrastructure that significantly facilitates the dissemination of information and transparency.

The webpage site (https://www.ceid.upatras.gr) of the Department is well structured and up-to-date covering a wide spectrum of information including study curriculum, e-courses, mode of attendance, criteria for curriculum assessment, and the research records of its faculty members. Furthermore, the website contains information about its facilities, policy of quality assurance, internal assessment reports, academic announcements and events.

Accessibility is satisfactory but not at the level a CEI Department should have. The AP very much appreciated the clear and readily available access to all public information regarding the activities of the Department of Computer Engineering & Informatics. The AP noted that the web page does not support English to a great extent and even when the access language changes by the user, the web page automatically transfers you to a web page in Greek (or both Greek and English). This is great problem for people without knowledge of the Greek language accessing the web page.

The Department provides its students with regularly updated documents containing crucial information about its structure, curriculum, research activities and workshops.

Panel judgement

Principle 8: Public Information	
Fully compliant	
Substantially compliant	x
Partially compliant	
Non-compliant	

Panel Recommendations

The AP noted that the web page does not support English language to a useful extend and even when the access language changes by the user (using the flag sign), the web page automatically

transfers you to a web page in Greek (or both Greek and English). It is worthy to mention that the web site of the Department is not at the level of accessibility someone anticipates for a CEI Department.

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

All stakeholders of the programme, including academic, administrative and support staff, and undergraduate and graduate students, are actively engaged in the current accreditation review. The members of staff demonstrated both in the OMEA meeting and in the meeting with staff that they are fully aware of the importance of external review and the positive effects that can derive from it. The Institution has created review procedures for the evaluation and improvement of the content of studies with integration of latest research in the discipline, changing society needs, effectiveness of students' assessment, students' expectations, needs, workload progression, learning environment, support services. Programs of studies are reviewed and revised regularly involving students and stakeholders and revised program specifications are published.

The Department has undergone an evaluation by an external committee in 2012. There are many issues raised in terms of monitoring i.e. the potential enhancement of the courses with more cutting edge technology and innovation aspects which comes along with a precise adaptive strategic plan with clear aims, milestones, quantitative measures, evaluation criteria and quality assurance procedures to steer and monitor the Department's activities.

Panel judgement

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

Panel Recommendations

The Department should have a way to closely monitor the potential weaknesses of a course and Department should develop a code of practice for such actions indicating with clear aims, milestones, quantitative measures, evaluation criteria and quality assurance procedures the improvement of courses (i.e. monitor if a course is outdated etc) as well as to steer and monitor the Department's activities towards this direction.

Principle 10: Regular External Evaluation of Undergraduate Programmes

PROGRAMMES SHOULD REGULARLY UNDERGO EVALUATION BY COMMITTEES OF EXTERNAL EXPERTS SET BY HQA, AIMING AT ACCREDITATION. THE TERM OF VALIDITY OF THE ACCREDITATION IS DETERMINED BY HQA.

HQA is responsible for administrating the programme accreditation process which is realised as an external evaluation procedure, and implemented by a committee of independent experts. HQA 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 of Computer Engineering & Informatics demonstrates a good and solid practice in running and monitoring Quality Assurance processes. Faculty and staff are dedicated and passionate about their work. They work hard to support the students both academically and personally. Based on the information the AP collected during the site visit, it appears that the faculty, lab personnel, and administrative staff are fully aware of the importance of the external review process and its contribution to improvement. All available stakeholders of the programme were actively engaged in the external review. Students and recent graduates overall were happy with their student experience and were praising the efforts of the department's and University faculty and staff.

Panel judgement

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

Panel Recommendations

The AP recommends the development of an action plan for the department to assess and ensure the implementation of the appropriate external evaluation suggestions and recommendations.

PART C: CONCLUSIONS

I.   Features of Good Practice

There are numerous aspects of the CEI Department and its work that demonstrate good practice. In the context of the Department's membership of the University of Patras, a commitment to the spirit and processes of Quality Assurance is evident.

The staff of the Department are passionate about their work and their provided support to their students with enthusiasm. Both the academic staff and the administrative and support staff are dynamic; they display a wonderful team spirit that was evident in the meetings during the AP's site visit; and there is absolutely no doubt that they are completely committed to their students and to the principles of student-centred learning.

II.   Areas of Weakness

There is a lack of foresight in the Department's vision and its currency to sustain its long term leading role.

III.   Recommendations for Follow-up Actions

The recommendations can be summarised to the numbered bullets below:

1. The Department has progressed over the years however, the level of progress was not at the anticipated pace.
2. The Department should further decrease the number of courses and focus on their modernisation.
3. The Department should expand its existing co-teaching scheme to cover more courses (in cutting edge fields) across the programme, in an effort to align even further the theoretical with the practical aspects of the Computer Science discipline. The AP feels that this would be a good approach to enhance learning and teaching.
4. The Department should develop brand new courses in cutting-edge technologies, an issue that is also related with the short-term and long term-plans and scientific strategy of the Department.
5. The Department should request new faculty positions to revitalise the academic environment.
6. The Department should formalise an annual peer review processes among its members both for teaching and research evaluations and combine those with the ones by the students.
7. The Department should develop a KPI strategy on student retention, progression and completion.
8. The Department should perform a staff satisfaction survey.

9. The Department should update the web page to support both English and Greek languages with the same efficiency.

IV.   Summary & Overall Assessment

The Principles where full compliance has been achieved are:

Principles are: 2, 3, 6, and 7.

The Principles where substantial compliance has been achieved are:

Principles are: 1, 4, 5, 8, 9 and 10.

The Principles where partial compliance has been achieved are:

None

The Principles where failure of compliance was identified are:

None

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

The 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 Accreditation Panel for the Undergraduate Programme Computer Engineering and Informatics (integrated master) of the University of Patras

Name and Surname   Signature

- **Prof. Nik Bessis (Chair)**, Edge Hill University, Ormskirk, United Kingdom

- **Prof. Constandinos Mavromoustakis**, University of Nicosia, Nicosia, Cyprus

- **Prof. Sotirios Skevoulis**, Pace University, New York City, New York, USA

- **Mr Nikolaos Siadimas**, Technical Chamber of Greece, Greece