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HELLENIC REPUBLIC



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Accreditation Report for the Undergraduate Study Programme of:

Informatics

Institution: Ionian University

Date: 29 May 2021

Report of the Panel appointed by the HAHE to undertake the review of the Undergraduate Study programme of **Informatics** of the **Ionian University** for the purposes of granting accreditation

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PART A: BACKGROUND AND CONTEXT OF THE REVIEW

I. The External Evaluation & Accreditation Panel

The Panel responsible for the Accreditation Review of the Undergraduate Study programme of **Informatics** of the **Ionian University** comprised the following four (4) members, drawn from the HAHE Register, in accordance with Laws 4009/2011 & 4653/2020:

- 1. Professor George A. Papadopoulos (Chair)**
University of Cyprus, Nicosia, Cyprus

- 2. Professor Dimitrios Nikolopoulos**
Virginia Tech, Virginia, USA

- 3. Professor Emeritus Nicolas Spyrtos**
University Paris-Saclay, Paris, France

- 4. Dr. Paraskevas Dalianis**
UniSystems S.A., Quest Group, Greece

II. Review Procedure and Documentation

The Panel (External Evaluation and Accreditation Panel or EEAP for short) visited virtually the Ionian University, Department of Informatics on Tuesday 25th and Wednesday 26th of May 2021. Prior to the virtual visit, on Monday, April 26th of 2021, the Panel members were briefed by members of HAHE on the standards and guidelines of the QA accreditation process, as well as on the national framework of HEIs.

On May 25th, the Panel first met with the Vice-Rector/President of MODIP Associate Professor Elias Giarenis and the Head of the Department of Informatics Associate Professor Emmanouil Magkos, to discuss the history, academic profile, current status, strengths, and possible areas of concern for the Department. The meeting was followed by a detailed two-hour presentation by Professor Manolis Maragoudakis (OMEA Head), discussing the degree of compliance of the undergraduate programme to the Quality Standards for Accreditation. The day's meetings continued with the EEAP meeting with multiple teaching staff members. This meeting focused on a discussion of professional development opportunities, mobility (e.g., via the ERASMUS+ programme), workload, student evaluations, and research activities as well as funding opportunities. Finally, the EEAP met with active undergraduate students of the Department. Discussions during this meeting focused on student satisfaction from the undergraduate curriculum and the Departmental facilities, as well as issues concerning student life and welfare.

On May 26th, the EEAP first participated in an online tour of Departmental facilities (classrooms, lecture halls, libraries, and laboratories). This was done mainly by means of a video presentation. In addition, a discussion took place between the EEAP on the one hand and members of teaching and administrative personnel on the other hand. This discussion focused on evaluating facilities and learning resources to determine whether the available equipment and facilities are adequate for the Department's undergraduate curriculum. Then the EEAP met with a group of students who recently graduated from the Department and discussed their experiences during their undergraduate studies in the Department and their career paths. The EEAP also met with a group of employers and social partners of the Department, in order to discuss relations of the Department with stakeholders from the private and the public sector. Finally, the EEAP met first with OMEA and MODIP representatives, followed by an extended meeting where, additionally, the Vice-Rector/President of MODIP and the Head of the Department were present. These meetings served the purpose of discussing Panel findings that might need further clarification and to present the key findings of the EEAP.

In preparation for the virtual visit, the EEAP had access to a wealth of information regarding the Department of Informatics of Ionian University. The Department provided detailed data on each of the ten principles that this report will address and HAHE provided access to the previous external evaluation report (from October 2011). It is worth noting that the previous evaluation had a broader scope than the current one, which only focuses on the undergraduate programme. Additionally, HAHE provided detailed information on an annual basis for a multitude of quality indicators that are measured by HAHE using data provided by the Department.

Finally, the EEAP held multiple internal meetings to discuss the outcomes of the virtual meetings and the contents of this report. This report represents the collective findings of the Panel after the aforementioned discussions were concluded.

III. Study Programme Profile

The Department of Informatics at the Ionian University was founded in 2004 and received its first students the academic year 2004-2005. Undergraduate studies in the Department have a four-year duration and are concluded after a student successfully completes at least 33 courses that are credited cumulatively with at least 240 ECTS.

The courses offered by the Department fall into one of three categories: compulsory courses that form the programme over the first four semesters, specialized courses that belong to some specialization offered within the undergraduate programme during the last two years, as well as free electives offered by other Departments of the Ionian University.

The undergraduate programme offers two specializations. The first one is a more traditional programme in Information Systems. The second one is a unique (for Greece) specialization in Humanistic Informatics. A student has to choose at the end of the second year the specialization that will follow and s/he is expected to enrol and pass a sufficient number of specialized courses in order to complete 40 ECTS and be awarded the undergraduate degree. The Department informed the EEAP that roughly speaking the students are split equally between the two specializations.

Furthermore, as part of the undergraduate studies, a student has to undertake a final year thesis that is worth 12 ECTS and spans over the last two semesters. Undertaking the thesis is obligatory, and a student is allowed to be enrolled for the thesis only if s/he has successfully passed all the compulsory courses of the first two years as well as be credited with at least 135 ECTS by the end of the third year.

The programme also offers a student the opportunity to undertake a practical internship in industrial or research environments. This internship lasts two months during the summer break (July and August), can be undertaken after the sixth semester, and is credited with 8 ECTS and appears in the Diploma Supplement.

According to data provided to the EEAP by the Department, after graduation students typically pursue one of the following three directions: (i) employment in the public sector; (ii) employment in the private sector; (iii) graduate studies, either towards an MSc or a PhD degree. Students can seek advice for employment opportunities informally at the Departmental level.

Around 200 students are admitted into the programme on a yearly basis. Typically, around 50% of those eventually seek transfer to other Universities. From the remaining students, around 60% complete their studies within the regular period of 8 semesters.

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 realize 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 Department of Informatics of the Ionian University has an established Quality Assurance (QA) policy for the undergraduate curriculum, which is in line with the University Quality Assurance policies and practices. The established QA policy aims at delivering a quality undergraduate programme, delivered by highly qualified faculty with strong expertise in fundamental and applied aspects of Information Technologies.

The ethos of the Department's QA policy is one of continuous adaptation and improvement. The QA policy is overseen and implemented by a formal Internal Assessment committee (OMEA), with extensive input from the Department's Undergraduate Curriculum Committee. The undergraduate programme is reviewed on an annual basis and its revisions are guided by a

rolling, five-year Departmental strategic plan, as well as ad-hoc feedback from faculty, students, and external stakeholders. The Internal Assessment committee of the Department works closely with the University Quality Assurance Unit (MODIP) to ensure that the undergraduate programme continuously meets its quality requirements.

The Department's QA policy emphasizes student-centred learning and clarity of learning outcomes in line with best national and international practices. The policy strives for the integration of faculty research findings in the undergraduate curriculum, while strengthening Departmental research activity and improving the teaching and laboratory infrastructure.

In line with the University goal to improve the international outlook of the institution, the QA policy pays attention to curriculum internationalization and external visibility. Current internationalization activities are mainly centred on student mobility driven by bilateral agreements between the Department and relevant academic units abroad. However, the Department faculty also has a growing number of international research collaborations that provide opportunities for students to acquire international experience and faculty to improve the visibility and impact of their research and development activity.

The QA policy uses appropriate quality indicators and data to explore the extent to which the Department graduates are prepared to meet the needs of the labour market. Employability of graduates appears to be good overall, with about 70% of the graduates finding employment within 24 months of graduation. A significant number of graduating students proceeds to undertake further graduate studies in Greece or abroad.

The QA policy monitors closely student feedback on course delivery and the curriculum learning experience, as well as some international quality indicators of faculty research activity.

The Department has several communication channels for its QA policy, including a web site, the undergraduate curriculum guide (course catalogue), and a series of information sharing events with students and external stakeholders.

The Department embraces an ethos of contribution to the local society and the economy of Corfu and the Ionian islands. To this end, the Department undertakes a range of local research, development, and outreach activities. The Department appears to be well integrated in and well regarded by the University. Notably, the Department contributes significant portions of the University's research income and research output.

The QA policy clearly encourages the strengthening of faculty research activity. These efforts are to some extent limited by the teaching and administrative load carried by the faculty. The load has been exceedingly high in the past, but it appears to have levelled off and rationalized in the past few years at a level that enables faculty to devote more time to research. Several faculty in the Department serve in senior leadership positions in the University and the faculty broadly view these opportunities as beneficial for their careers.

Overall, the Department appears to offer a highly collegial and conducive working environment, where faculty and students work together to achieve their common goals. The relatively small size of the Department and the manageable size of the student cohort help faculty provide closer and more personalized support to students compared to larger Computer Science and Engineering Departments in Greece. The students seem to appreciate greatly the support they receive from faculty.

Panel Judgement

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

Panel Recommendations

- The formation of a scientific and industrial advisory board with stakeholders from academia, industry and government in Greece and abroad. The board should assist the Department in shaping a strategic direction, stay abreast of market, science and technology trends in information systems and social/humanistic informatics, and improve its overall visibility and reputation nationally and internationally. If Greek law for the institutions of Higher Education does not allow the creation of formal advisory boards, the panel recommends the formation of an informal advisory group that interacts regularly with the Department (for example in an annual, day-long workshop) on curriculum development, strategic research directions, science and technology trends.
- The Department would benefit from more mobility opportunities for both faculty and students, including research leaves (sabbaticals) and research exchange programmes. These opportunities would help faculty and students establish or strengthen their professional networks, pursue new opportunities for collaborative research and improve the overall visibility of their own research activity.
- The Department would benefit from further involvement of faculty and students with leading international technical and scientific professional societies, in particular ACM and IEEE. The societies are establishing a growing number of chapters in Greece and in various technical areas which might be of direct interest to the Department. Alternatively, the Department could pursue establishing a new chapter with emphasis in social and humanistic information systems.
- The Department would benefit from collecting some data on the placement of its graduates in the job market or in graduate programmes (that is, what companies or Universities students join after graduation). Exemplar placements in major technology companies or further studies in leading research Universities could be an excellent testament of the quality of the undergraduate curriculum.

Principle 2: Design and Approval of Programmes

INSTITUTIONS SHOULD DEVELOP THEIR UNDERGRADUATE PROGRAMME 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 programme following a well-defined procedure. The academic profile and orientation of the programme, the objectives, the subject areas, the structure and organization, 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 programme 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 undergraduate programme in the Department of Informatics has well defined objectives and follows best national and international practice. The programme is comprehensive and focused, with a sensible balance of fundamental and applied learning outcomes. The programme includes two streams of specialization covering Information Systems and Humanistic Informatics, respectively. The Department has been introducing new courses and content in these two streams. New course development activity started slowly following the last accreditation of the undergraduate programme in 2011 but has picked up pace in the last few years with the hiring of new faculty.

The Department has a rolling five-year plan for updating and improving the undergraduate programme, in line with the most recent developments in the field of Informatics, institutional strategy, feedback from stakeholders and internal and external programme assessment processes.

The overall structure and content of the programme is broadly in line with established Computer Science programmes in Europe and North America. There is a reasonable balance of core and elective courses, with appropriate depth and coverage of current and emerging themes. Although the programme has no prerequisites (potentially because of legal implications of a prerequisite structure), the programme includes recommended course sequences (chains) that help students navigate the curriculum and build their skills in an additive manner.

The programme includes specialized courses in important and impactful areas of Information Technologies including AI, Security, Data Science and Human-Computer Interaction.

One issue with the curriculum concerns prerequisites. The Panel heard that many faculty members do include in their course descriptions a quick reference to the desirable (not required) previous knowledge. The Panel believes that this is a good practice that should be followed by all faculty members and, indeed, the concept of prerequisites should be enforced.

The undergraduate programme is informally informed by employers, the Technical Chamber of Greece and other external stakeholders in terms of the quality of its graduates and its learning outcomes. The programme is also informed by research, where faculty continuously aim to transfer and integrate results of their own research activity in the curriculum.

The Department has recently established a formal faculty advisor scheme to assist students throughout their studies. Student interviews indicated that students are not necessarily aware of the scheme and its availability, possibly because the scheme has started as recently as February of 2021. Nevertheless, students indicated that faculty are helpful and always available when students need advice or assistance in their studies. Faculty appear to care for and work closely with students to help them grow and succeed. Faculty also strive to maintain a positive, collegial and collaborative culture and a sense of community in the Department.

The programme is compliant with the ECTS system. The students have opportunities to take courses abroad, thanks to Erasmus programmes and bilateral agreements between the Department and Universities abroad. The number of students who take advantage of these opportunities remains small. In terms of student workload, there is a slight imbalance in the distribution of ECTS credits in the 5th semester of studies. This is there by design as the 5th semester is a critical juncture in the programme where students need to decide on their specialization and course stream they will be focusing on.

All course syllabi and the undergraduate course catalogue are rigorous and provide clear information on course structures and learning outcomes. The instructors set clear expectations on the courses and clarify the course assessment methods in the beginning of the course terms.

The programme has an established practical training scheme that provides students with opportunities to gain valuable experience in a work setting while earning credits towards their degree. Currently, a rather small percentage of students in the Department participate and benefit from practical training. Student interviews indicated a strong student interest for closer interaction with industry and further opportunities to prepare themselves for the labour market, (e.g. opportunities to prepare their CVs for their job search).

The Department is in the initial stages of establishing an alumni network. Establishing this network would help students link to professional networks nationally and internationally and benefit the overall visibility and reputation of the Department.

Panel Judgement

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

Panel Recommendations

- The Department should formalize its alumni network and strengthen its relations with alumni. With more Department graduates pursuing successful careers in industry and academia the Department now has great ambassadors for its curriculum and research activity. Alumni can help the Department raise its profile, establish stronger professional networks and pipelines, and advocate for the Department in relevant fora.
- The undergraduate course catalogue of the Department should be improved by providing more information on the career paths and opportunities which are available to Department graduates. The catalogue can become more exciting by also providing a few examples of the successful outcomes of Departmental research and knowledge transfer activities, rather than a mere list of courses, laboratories, and funded research programmes.
- The Department should offer more regular and frequent networking events between students and employers (career/employment days). These opportunities would not only benefit students but also help employers familiarize with the Departmental curriculum and research activity.

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 play 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 Department has an undergraduate curriculum that balances well theoretical and laboratory-based learning. This is supported by adequate teaching and laboratory facilities, although the current facilities may prove inadequate in an event of future growth in student and faculty numbers.

The Department has grown the proportion of laboratory-based coursework in the curriculum over the years. This appears to be working well in terms of achieving the desired learning outcomes for students.

The Department uses multiple and flexible teaching and learning modes, including group-based learning and flipped learning. There appears to be genuine desire and effort among faculty to integrate state of the art delivery and learning methods in the curriculum. A variety of assessment methods is used in the Department. This is appropriate for an Informatics

Department, where project-based learning and continuous assessment are as important, if not more important than exam-based assessment.

The Department has recently established a student advisor scheme. However, it appears that students are not aware of this scheme and no information is available on how the scheme is or will be implemented. Furthermore, the Department appears to lack systematic and formal career advising and career development schemes for students. This is essential given the multitude of career paths and opportunities available to graduates. Students have the option of practical training in industry. Unfortunately, only a very small (currently under 5%) of students benefit from this opportunity.

The Department takes student diversity and special needs seriously into consideration. The faculty care deeply about the wellbeing of the students and this is a commendable strength of the Department. Faculty appear to be available and accessible to students and students feel that they are supported well.

The Department fosters independent and critical thinking among students through a number of instruments, including a choice of course pathways in the curriculum, the participation in open ended individual and group projects, and a rigorous final year project (“Πτυχιακή Εργασία”). The undergraduate programme as a whole, aims at giving students a good range of course options and flexibility in developing their foundational and practical skills.

Students also have opportunities to work in research laboratories. However, this happens in an ad-hoc and informal basis following direct interaction between students and faculty in courses. All students are required to undertake a significant final year project which gives them opportunities to undertake research and engage with the Departmental research laboratories.

Student feedback on teaching quality is broadly positive, although the Department aims to improve substantially in that respect. The student perception is that faculty take into consideration student feedback to improve course delivery and learning experience and respond by meaningful change in their courses.

The Department has established processes for handling student complaints. However, these processes are not clearly documented.

The Department has reasonable student retention, progression and graduation rates which are significantly better than similar Departments in Greece. The size of the Department and the current student to faculty ratio enables the Department to closely monitor student progression and take appropriate measures to improve progression. Examples of such measures include a time limit for completing final year projects and detailed information in course descriptions that articulates the background that a student needs to succeed in each course.

Panel Judgement

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

Panel Recommendations

- The Department should formalize, promote and strengthen its recently established student advisor scheme. It appears that this is a new scheme that undergraduate students are not yet aware of, although they are broadly content with faculty availability and support.
- The students would benefit from a formal career and professional development advising scheme (potentially including a relevant course), in conjunction with regular career development events in the Department. Given the wide range of professional opportunities which are available to them, the students would welcome guidance that helps them align their interests, skills, and strengths with professional opportunities nationally and internationally.
- The Department should further encourage and incentivize internships in industry to increase student take-up of this significant opportunity. The current take-up is surprisingly low for a Department of Informatics.
- Opportunities for undergraduate students to acquire research experience in Departmental laboratories as well as opportunities for practical training in industry should be broadly and openly advertised in the Departmental communication channels (including the web page and social media).

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 is fully compliant, has created procedures for award and recognition of higher education degrees, studies duration, rules and processes for students' progression, recognition of credits among various European academic Institutions according to the Lisbon Recognition Convention. Sufficient documentation explaining learning outcomes, context, level, content of studies completed culminating in qualification gained is available.

The Department implements a comprehensive induction programme to support new students transitioning from high school to university academic life. Key information, assuring the orientation of new students in the Department during their first few weeks at the University, is organized by the Department's staff in a rather short in duration "Welcome" event every October. Following students' feedback, the University is encouraged to actively participate in this event, as well, introducing its support services to all new students. Besides, such information should always be available online to all students, probably using the dedicated personal web services offered to students.

The Department is proactively promoting funding opportunities, such as the ERASMUS+ programme, following the Institution's policy. To that end, all information available in Greek should also be maintained fully in English, in order to attract more students from abroad to select the Department for their short period of attending courses, in terms of such a student exchange programme.

To its credit, the Department offers students the opportunity to complete a compulsory Undergraduate Thesis ("Πτυχιακή Εργασία"), which is organized as two successive courses, during the last two semesters of studies (i.e. 7th and 8th). To that end, also to the Department's credit, a very detailed Thesis Handbook and detailed guidelines are available assuring the existence of a common set of rules and regulations towards its successful completion. Teaching staff is putting substantial effort towards assuring that all graduates have achieved a high level of quality towards their thesis.

A paid internship in industry is also provided as an option for undergraduate students. To that end, the Department is encouraged to attract more funding and provide more opportunities for such internships using its regional –if possible- cooperation network.

The Department has introduced the role of the Academic Advisor in the beginning of the current Academic year. A related Guide will soon become available following Institution centralized processes. From the students' review, it appeared that the role has not yet sufficiently communicated to all students.

The Department, upon graduation, automatically prepares a Diploma Supplement for all students, following the Institution's policy, including information on ECTS credits and courses successfully passed. The Department is also working towards the implementation of an optional horizontal specialization leading to a pedagogical and teaching certificate.

Panel Judgement

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

Panel Recommendations

- The role of the Academic Advisor, which was recently introduced, must be well documented (with the provision of an Academic Advisor Guide), promoted and fully supported by the Department. The role has to be well introduced to 1st-year students with appropriate live sessions during the “Welcome Event”.
- The Department may further consider extending its internship opportunities (and related course), by enhancing its wide professional network of external stakeholders, especially considering local and regional needs and developments, which might expand its relationship with the community.

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 does have the appropriate Staff resources to implement its curriculum. Faculty instructors are highly qualified and trained, most of them with long term experience in the Department and the Ionian University's environment and region.

Teaching staff are assessed by students through the course evaluation surveys. Evaluation feedback of this process is provided to faculty members as useful information for course delivery improvement, as well as instructors' personal teaching development. It appears that such feedback is seriously being considered for annual review and improvement of the Curriculum.

Staff mobility, although limited, is encouraged through a number of Erasmus agreements that the Institution participates in, but mainly through the staff's research activities in terms of project cooperation with external institutions. No evidence for self-assessment or peer assessment was provided.

The teaching workload has recently become sufficiently reasonable, and staff are encouraged to be further engaged in research and other personal development activities. However, the Department lacks a clear and transparent workload model that would assure among academic staff a well-balanced research and teaching activity. To that end, the Department should consider organizing, -probably in close cooperation with the Institution-, and offering additional seminars to its Staff enhancing their effective presence in international highly competitive research projects (like Horizon Europe, etc.)

Students are encouraged to be exposed to research activities mainly through their final year thesis.

Panel Judgement

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

Panel Recommendations

- Develop a strategy and a programme for professional development, properly communicated to academic staff, including training to pedagogical theories and approaches in teaching and learning in higher education, research proposals participation, etc.
- Enhance that research-informed teaching in undergraduate courses beyond the final year thesis, encouraging all staff to actively participate through well-defined Departmental processes.
- Establish a transparent workload model that takes into account and balances teaching, administration and research activities across the academic staff.

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

Since the Panel did not have the opportunity to visit in person the facilities of the Department, the evaluation of learning resources supporting both the teaching and research was carried out using feedback offered by students, the academic team, other stakeholders participating in the virtual meetings, and the various documentary evidence provided (including a small video).

It appears that there is a reasonably satisfying infrastructure based on many different buildings and labs situated in walking distance around the city of Corfu. Dedicated teaching classrooms are rather limited, but there is sufficient centralized management of all available resources in order to make full use of all teaching rooms shared among all University's Departments in the city.

Teaching laboratories are also rather limited, especially when compared with computer science departments in the country. However, the Department, as well as the University is struggling to submit proposals in regional and national programmes to attract more funding and extend their facilities. To that end, the Department should consider more project opportunities, which might directly or indirectly enhance the funding resources for increasing and enhancing its infrastructure.

There is also evidence that the Department encourages the participation of students to social activities for students, and public events. The Department may benefit substantially from such an enhanced activity and increase students' experiences and its promotion to the society. Further involvement in the promotion, implementation and support of various events, such as conferences of special topics of interest for the Department, in line with its study programme me, and in close cooperation with its professional network of external stakeholders, probably

with a focus on local and regional topics of interest, may substantially increase the Department's and University's visibility in the Society and broaden their appeal and links to the market.

The dormitories or sport facilities for students are rather limited in such a highly touristic destination –as Corfu- and thus very difficult to be improved. However, the Institution and the Department should put any effort towards finding flexible ways to increase offerings to the student community in close cooperation with their cooperating local and regional authorities and organizations for their mutual benefit.

Although, there were no complaints, it also appears that the technical staff of the Department is very limited (only one «ΕΤΕΠ»). This is most probably due –once again- to the personal efforts and willingness of all staff to help and resolve any issues or overcome any limitations.

Administrative services also appear to be quite efficient and supportive to all students.

Panel Judgement

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

Panel Recommendations

- The Department should consider the enhancement of extracurricular activities wherever possible, such as conferences and events on special topics of interest or local and regional topics.
- Despite the obvious space restrictions, which affect virtually all institutions based in the centre of a highly attractive touristic destination, the University and the Department might further enhance their efforts to support the provision of facilities for sports, and especially, dormitories and reasonable accommodation to students.
- The Department should extend its effort to attract more funding which will potentially improve its teaching and laboratory resources.

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 me(s)*
- *availability of learning resources and student support*
- *career paths of graduates*

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

Study Programme Compliance

The Department of Informatics of the Ionian University is responsible for overseeing the continuous improvement of its academic provision, as well as the efficient operation of its academic services, in accordance with international practices and the guidelines provided by the Hellenic Authority for Higher Education. An internal evaluation and assessment are conducted annually, in collaboration with MODIP to analyse and communicate the information obtained from the surveys. The Quality Assurance goals of the Ionian University are based on its strategic plan and aim to provide specific and measurable KPIs for all its main activities. Efficiency measurements include quantitative and qualitative indicators which provide valuable and reliable information, supporting higher level decision-making.

The number of transferred students does not seem to significantly aggravate the number of incoming students, increasing further the total number of students in the Department. The students met by the EEAP seemed to be very satisfied with the offered courses and their learning outcomes, as well as with the acquired knowledge by the programme in total.

The Ionian University provides an efficient IT infrastructure which ensures the collection of all relevant data. The overall process that the University employs, ensures that the anonymity and confidentiality is secured for the required data of all the above. It is worthy to mention that the questionnaires are undergoing continuous improvements and students are urged to complete them accordingly. However, the percentage of students answering the questionnaires is rather low - although higher than in other universities.

It is clear to the EEAP members that the Department staff feels satisfied by the provided electronic services and resources available to them, including the computer labs which in some cases play an important role in the conduct of research and effective teaching. The students are clearly satisfied with their learning experience in this respect and value the resources available to them.

Students can easily reach the industry sector of their discipline in their vast majority. They feel that the market/industry can easily absorb them, and this is evident by the high percentage of the graduates who are employed within a relatively short time after their graduation. This is facilitated to a large extent by the excellent personal contacts of the academic staff with industrial stakeholders.

The Department fully complies with Information Management principles and its staff was able to provide answers to all of the Panel's questions.

Panel Judgement

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

Panel Recommendations

- Establish formal processes for involving industrial market players/partners and alumni in order to maintain the programme innovation and align with the market requirements. This will enable even smoother career pathways for the students, and more prepared students for the market needs.
- Perform dedicated surveys involving students, alumni and the industry regularly, and establish procedures to incorporate the results in the assessment process.

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 provides information through various channels to its principal stakeholders, namely prospective students, undergraduate and graduate students, as well as to industrial partners and to the public in general: information day for the new undergraduates, seminars by external speakers, close relationships with graduate students and strong links to industrial stakeholders - although the latter through personal relations (see also Principle 7).

The Department also maintains a well-designed website with focused information, both in Greek and in English (although some items are available only in Greek). It is to be noted that public information is also provided through social networking and mailing lists.

There seems to be some discrepancy between the Greek and English version of the information available on the web site, with respect to the ECTS course guides (e.g. the course "Οπτικοποίηση της Πληροφορίας").

Questionnaires provide an important way of communicating between faculty and the undergraduates. However, student participation in completing questionnaires, although higher than in other Universities, seems to be relatively low. The Department should try to find ways to enhance it. Similar questionnaires and surveys could be sent also to industrial stakeholders and Alumni. Establishing an Alumni association should be helpful in this respect.

The Panel met separately with groups of undergraduate students, graduate students and industrial stakeholders. In general, they all expressed their satisfaction in the quality of their communication with the Department.

The graduate students seemed to be fully satisfied by the education they received and all those that we met had found interesting positions.

As for the industrial stakeholders, they all expressed their appreciation of the high-quality technical background of the Department's graduates that they employ and the excellent personal relations they maintain with faculty members.

Panel Judgement

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

Panel Recommendations

- Set up an Alumni Association.
- It is encouraged to have an annual report of progress against the quality assurance targets posted on the Departmental web site.
- All information available on the Departmental web site in Greek should also be available in English.
- Improve the process of content dissemination on Departmental activities, such as an outreach programme for high school students, including web pages, social media postings and faculty presentations in regional schools.

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 me;*
- *the learning environment, support services and their fitness for purpose for the programme me*

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 programme contains the basic courses expected from a good Computer Science Department. Its contents are monitored and updated if needed, and the updated programme appears on the Department's website. The main input for eventual updates comes from faculty members and from students.

Student input is provided mainly through questionnaires, filled annually and then analysed. The questions concern mainly student expectations from the teachers and the courses they teach, the style of teaching, the course contents, the learning environment, and the course workload. However, student participation in completing questionnaires seems to be relatively low and the Department should try to find ways of enhancing it.

The students met by the Panel were, in general, very satisfied with the quality of education they receive.

Apart from faculty and students two important sources of input for monitoring the Department's programme are the alumni and the industrial stakeholders; and indeed, both these sources provide their input through the strong links they maintain with the Department. However, these inputs seem to be obtained based mainly on personal relations that faculty members maintain with alumni and industrial stakeholders. What is needed here is some sort of coordination mechanism, such as an Advisory Board so that useful input is provided by industrial stakeholders and alumni on a regular basis and programme changes are motivated also by changing needs in industry and society.

Panel Judgement

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

Panel Recommendations

- Appoint and activate an External Advisory Board of Alumni and Industrial Stakeholders.
- Develop effective means to increase the student participation in filling questionnaires so that to ensure statistically robust results.

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 undergraduate programme has not as yet undergone another accreditation process. However, 10 years ago the Department was externally evaluated by another HAHE appointed committee. The findings of that evaluation process cover all aspects of the Department's activities and a number of them are directly related to this accreditation process. The Department has sufficiently demonstrated that it has taken into consideration the majority of the recommendations of the external evaluation committee and these recommendations have now been integrated into the processes related to the implementation of the current undergraduate programme (to a percentage close to 80%). A relatively small number of these recommendations have not been implemented, mainly due to legal restrictions or because their effective implementation is beyond the influence of the Department. Every effort should be made for these recommendations to also be implemented. Furthermore, the established procedures for internal quality assurance are sufficient for ensuring that the findings and recommendations of this (or future) accreditation Panel will be implemented. The relevant Departmental and University stakeholders are well aware of the importance of these accreditation exercises, have been actively engaged in the current accreditation process and are committed to implementing its findings.

Panel Judgement

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

Panel Recommendations

- Every effort should be made for the recommendations of the external evaluation process to be implemented to the full (such as the formal establishment of prerequisites), in addition to those recommendations that are made by this accreditation Panel.
- A discrepancy appears regarding the extent to which the suggestions of the first external evaluation committee have been fulfilled and this discrepancy needs to be resolved. Specifically, the report on the accreditation of the Department with date 8/12/2020, states that those suggestions were fulfilled at a level of 70%, whereas in the presentations to this Panel, there appear to exist two versions, one stating that fulfilment is at 100% whereas the other states that regarding the restructuring of the programme and the staff effort, fulfilment is only at 50%.

PART C: CONCLUSIONS

I. Features of Good Practice

- The Department has a solid undergraduate programme in place that is often revised and has been frequently adapted to incorporate state-of-the-art material in the course offerings.
- The undergraduate programme has incorporated elements of research (mainly via the diploma thesis and the informal involvement of students in the labs).
- There is a high degree of student satisfaction from the undergraduate programme, in terms of professional or graduate studies preparation.
- There seems to be significant satisfaction among employers regarding the quality and the training of the Department's students.
- The Department seems to be a healthy environment for both students and faculty in order to pursue their academic endeavours.
- The website of the Department contains all the necessary information for students in an easy-to-access way.
- The instructors were given high marks by the students on being responsive to questions and on helping them in general.

II. Areas of Weakness

- There is a lack of systematic and formal guidance by external stakeholders so that the programme is up-to-date and aligned with trends and demands of the industry-needs. EEAP members strongly encouraged the faculty members of the Department to develop the appropriate mechanisms for a multi-stakeholder feedback on a periodic basis. Within these lines, there are no feedback reports provided by both academic and industry/external advisors (joint-consolidated reports with the extracted outcomes) on the quality and efficiency of the programme.
- Regarding the recently established student advisor scheme, this has not as yet been formalized, promoted or strengthened. It appears that this is a new scheme that undergraduate students are not yet aware of, although they are broadly content with faculty availability and support.
- The students would benefit from a formal career and professional development advising scheme, as well as regular career development events. Given the wide range of professional opportunities which are available to them, the students would welcome guidance that helps them align their interests, skills and strengths with professional opportunities nationally and internationally.
- Opportunities for undergraduate students to acquire research experience in Departmental laboratories as well as opportunities for practical training in industry should be broadly and openly advertised in the Departmental communication channels (for example the web page and social media).
- The Department should consider the enhancement of extracurricular activities wherever possible, such as conferences and events on special topics of interest or local and regional topics.
- Despite the obvious space restrictions, which affect virtually all institutions based in the centre of a highly attractive touristic destination, the University and the Department might

further enhance their efforts to support the provision of facilities for sports, and especially, dormitories and reasonable accommodation to students.

- The Department should extend its effort to attract more funding which will potentially improve its teaching and laboratory resources.

III. Recommendations for Follow-up Actions

- Formal processes involving external Advisory Board members, like industrial market players/partners and alumni, should be established in order to maintain the programme innovation and align with the market requirements. This will enable even smoother career pathways for the students, and more prepared students for the market needs.
- Dedicated surveys should be conducted regularly, involving students, alumni and the industry, and procedures should be established to incorporate the results in the assessment process.
- Student participation in course/instructor evaluations should be encouraged, e.g. by restricting the early release of the course/exam grades to only those who have responded. Furthermore, develop effective means to increase the student participation in filling questionnaires so that to ensure statistically robust results.
- Enforce course prerequisites, if they are essential.
- Appoint and activate an External Advisory Board of Alumni.
- Update the programme of study, taking into consideration the latest ACM/IEEE Curriculums in Computer Science and Information Systems¹.
- All areas of weakness as outlined in section II, should be addressed and rectified.

¹ <https://www.acm.org/binaries/content/assets/education/curricula-recommendations/cc2020.pdf>

IV. Summary & Overall Assessment

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

The Principles where substantial compliance has been achieved are: **3, 6, and 9.**

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

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

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

The Members of the External Evaluation & Accreditation Panel

Name and Surname

Signature

- 1. Professor George A. Papadopoulos (Chair)**
University of Cyprus, Nicosia, Cyprus
- 2. Professor Dimitrios Nikolopoulos**
Virginia Tech, Virginia, USA
- 3. Professor Emeritus Nicolas Spyrtos**
University Paris-Saclay, Paris, France
- 4. Dr. Paraskevas Dalianis**
UniSystems S.A., Quest Group, Greece