

**Cyprus Agency of Quality Assurance and Accreditation in
Higher Education**

Republic of Cyprus

**External Evaluation Report
Program of Study**

Institution: University of Nicosia

**Program of Study: Master of Science in Computer Science
(Concentrations: (a) Cyber Security, (b) Mobile Systems,
(c) Blockchain Technology) - Distance Learning**

TABLE OF CONTENTS

Instructions.....	3
External Evaluation Committee (EEC).....	4
Introduction.....	5
Findings.....	7
Conclusions and Suggestions of the External Evaluation Committee.....	11
Document Number: 300.1.....	13

INSTRUCTIONS:

The present document has been prepared within the framework of the authority and competencies of the Cyprus Agency of Quality Assurance and Accreditation in Higher Education, according to the provisions of the “Quality Assurance and Accreditation of Higher Education and the Establishment and Operation of an Agency on Related Matters Laws of 2015 to 2016” [N. 136 (I)/2015].

The document is duly completed by the External Evaluation Committee for each program of study. The ANNEX (Doc. Number 300.1) constitutes an integral part of the external evaluation report for the external evaluation accreditation of a program of study.

EXTERNAL EVALUATION COMMITTEE:

NAME	TITLE	UNIVERSITY / INSTITUTION
George Spanoudakis	Professor	City, University of London
Costas Mourlas	Associate Professor	National and Kapodistrian University of Athens
George Dafoulas	Associate Professor	Middlesex University
Georgia Kouti	Miss	Student, University of Cyprus
Andreas Kyprianou	Dr.	ETEK

INTRODUCTION:

I. The External Evaluation procedure

The External Evaluation Committee was briefed at the Agency of Quality Assurance and Accreditation in Higher Education by the Director and then accompanied by Mrs Anthi Prokopa to the University of Nicosia.

The External Evaluation Committee received presentations from the Vice Rector of the University on the structure, the history and the academic programmes of the university followed by a short presentation from the Head of the Department of Computer Science on the departmental structure and mission. This was followed by a presentation that described the Distance Learning Unit.

The External Evaluation Committee were able to ask questions throughout these presentations and there was an interesting and informative dialogue. Following this the External Evaluation Committee was able to have separate meetings with full time faculty, external part-time faculty, and postgraduate and undergraduate students of the Computer Science Department.

The External Evaluation Committee was able to scrutinize the following documentation:

- the general University Guide
- 200.1 Application for Evaluation – Accreditation for Program of Study
- Updated specification of the modules of the programme (this was provided upon a request from the External Evaluation Committee)
- Criteria for the Distance Learning Program of Study
- Guidelines for the external members of Evaluation Committee
- Study Guides for the modules of the programme
- The Guidelines of the University of Nicosia for Internally Funded Research projects

This was based on a long discussion with the members of the department and the university, who have had a relation to the programme. During this discussion, the External Evaluation Committee requested clarifications for several questions in the evaluation form.

II. The Internal Evaluation procedure

The institution provided a comprehensive documentation of the programme, including its structure, studying guides, research policies and distance learning policies. It also provided examples of studying materials for modules of the programme that was available. It did not, however, provide an internal evaluation.

The external evaluation committee considered all aspects of the submitted documentation.

The staff present during the visit to the University of Nicosia were welcoming and hospitable. They were also interactive and informative. The Distance Learning Unit

were particularly instructive. Almost all full-time faculty of the teaching team of the programme under evaluation were in attendance. Some members of the part time staff were also in attendance, and the External Evaluation Committee have had a separate meeting with them. Finally, it should be noted that External Evaluation Committee have had a meeting with two students undertaking existing programmes of the department of Computer Science.

FINDINGS:

1. EFFECTIVENESS OF TEACHING WORK – AVAILABLE RESOURCES

Organization of Teaching Work

The institution appears to have a clear policy in relation to student recruitment. However, the admission requirements for applicants with a non-computing background are not specified with full clarity in the documentation (see comment on Criterion 1.1.1 below).

The institution follows national standards that require capping student cohorts at 30 students per class. This is a very good practice that ensures appropriate level of support.

The programme team follows the institutional policies on educational processes, in relation to the provision and adequate dissemination of any relevant information. The use of a website for the particular programme and Moodle allows the programme team to inform faculty and students about the academic calendar, programme curricula, and programme evaluation.

There is no grade moderation at programme level. International experience suggests that this may lead to discrepancies between grades awarded in different courses. Whilst such discrepancies may be justifiable in some cases, they might not be so in all cases. A process of grade moderation at programme level is useful in such cases. At a minimum, this process involves comparing the general statistics of the grades given in different modules, exploring the reasons underpinning any significant differences between them, and taking and documenting programme level actions that may be required in such cases. The programme will benefit immensely from the introduction of such a process, especially as it is a distance learning programme.

The programme is supported by up to date resources and the institution ensures that the programme runs smoothly. The programme team demonstrated their ability to enforce institutional policies in terms of communication with students, provision of feedback and progress monitoring. There are also clear procedures for students who wish to complain, request additional help and receive welfare support.

The programme team should consider whether students adhere to the existing procedures and ensure that they do not express and discuss concerns in a gradually escalating manner starting from the individual lecturers involved, the programme director and eventually the head of the department. At the moment, this does not appear to be the case with existing student cohorts, which tend to speak directly to the Head of the Department. This will be important for not overusing the availability of senior staff members, who need to have the time required for the strategic and tactical management of the teaching and research activity of the institution.

The programme team should also consider to introduce a more formal mentoring process for new members of staff. The institution should reflect whether plagiarism prevention mechanisms should support the existing use of plagiarism detection tools.

Teaching

The programme team has in place a plan to ensure that different courses and course sections are delivered in a consistent way. Students receive opportunities for formative assessment in the form of quizzes and verbal exercises, with immediate feedback. The students receive all the necessary assessment guidelines early on for each course and staff members explain assessment in detail.

The programme has ensured that it uses effectively the Moodle platform to provide all the necessary documentation and support for students who study in the programme. Staff members have demonstrated ability to engage students and clear plans of how to achieve high levels of engagements during webinars. The use of forums for fostering discussions amongst peers should be considered.

The team might consider to expand their current provision of feedback to include rubrics, personalised feedback, and innovative online feedback mechanisms such as gamification, video casts and tagging. Staff may consider making assessment criteria more explicit by including assessment rubrics and lists of criteria in the course guidelines.

Teaching personnel

There is an appropriate balance between fulltime and part time staff delivering this programme. There is evidence that the vast majority of staff have relevant research output in the related areas of teaching. The entire team consists of individuals with appropriate backgrounds, level of experience and skills in the field.

The staff/student ratio is appropriate according to the national standards. There also appears to be a limit of nine contact hours per week for all staff, allowing them to engage in research and a more balanced workload.

The team seems to have sufficient contingency plans for unexpected personnel changes and the programme is coordinated by a capable and experienced member of staff. The programme has been presented by a well-prepared team who is led in an efficient manner with confidence and commitment to the high quality of the programme's delivery.

2. PROGRAM OF STUDY AND HIGHER EDUCATION QUALIFICATIONS

Purpose and Objectives and learning outcomes of the Program of Study

The programme is based on clear learning outcomes that are explicitly described at programme and course level. A detailed mapping of the learning outcomes against the programme's courses is provided and the programme delivery is based on the identified learning outcomes. The team has shown evidence of carefully aligning these learning outcomes with the topics included in the curriculum. The team should revise the phrasing used for some learning outcomes to ensure that they accurately reflect the work carried out at level 7 (postgraduate study).

The learning outcomes are clear to all stakeholders of the programme, the learning

process is designed in such a way so students can achieve the learning outcomes. The programme meets the requirements of the corresponding professional bodies. The title of the programme awarded accurately reflects the learning outcomes.

Structure and Content of the Program of studies

The institution's provision is aligned to the Bologna process. The ECTS is applied and the credits awarded for each course are mapped to the corresponding learning hours. There is a clear programme structure describing the way courses are organised in different semesters. The programme has a balance of generic and specialist courses and all courses are sufficiently aligned to the number of credits awarded. The number of courses and the depth of learning provided in each course are appropriate for the programme and the level of study. Sufficient provision is in place for students of different backgrounds and capabilities.

Quality Assurance of the Program of studies

The Board of Studies appears to be the main opportunity for students and staff to discuss in person any issues relating to the programme. An institution-wide survey is used to ensure that certain aspects of the programme are evaluated. There is a clear procedure describing how the programme is scrutinised before it applies for external evaluation. The quality assurance process covers both academic and non-academic aspects of the programme.

Management of the Program of Study

The programme is managed effectively as there are in place clear procedures and organization structures. There are specific policies that govern the design and delivery of curricula as well as the evaluation of the programme. The award for this specific programme is in line with national and international standards. Students are given appropriate means for the evaluation of the programme. There is also provision to accept direct entry of students who wish to transfer credit from accredited programmes that are in line with the programme's learning outcomes.

International Dimension of the Program of Study

The institution has a significant number of collaborations with international institutions and the Erasmus+ fund stream is used for student exchanges. The programme is in line with national and international standards.

Connection with the labour market and the society

The programme is designed in a way that equips its graduates with the necessary skills for the relevant sector. There is sufficient evidence for the necessity of such graduates in the national and international job market. These have been documented in the feasibility study submitted by the institution.

3. RESEARCH WORK AND SYNERGIES WITH TEACHING

Research Teaching Synergies

Research of faculty members appears to have informed teaching in specific areas (e.g., in blockchain technologies and mobile systems research). Also, faculty members

try where possible to involve postgraduate Master level students in research projects and in publications arising out of them.

Furthermore, the University has an endowment fund, which provides funding to a total of 100K Euro per annum for funding five research projects up to a maximum of 20K Euro each. Where possible, these projects involve students.

The training that the students, who will be recruited to the programme, will receive in research should be enhanced. This should be through some minimal level of training in statistical, quantitative and user-centric evaluation methods and making it compulsory for them to do a thesis with a research element.

4. ADMINISTRATION SERVICES, STUDENT WELFARE AND SUPPORT OF TEACHING WORK

Administrative Mechanisms

Administration services and student welfare infrastructure is supported by both on-line and traditional mechanisms for communication between students and the Institution. Existed specialized personnel has already been proven adequate finding solutions and answers in student requests in numerous existing DL courses currently provided by the Institution.

Infrastructures / Support

The supportive material (books, presentations, webinars, exercises, teaching notes) are mainly provided to the students through the Moodle learning environment. Additional access to online books and journals are provided through digital library accounts given to the students upon registration. However, a more updated list of suggested books and a more recent bibliography needs to be described in many courses. Special attention is needed for providing students a distant access to laboratory infrastructures for specialized practical assignments or additional simulation software enabling students testing the correctness of any program written for security, mobile or blockchain applications.

Financial Resources

Extensive use of extending contracts of full time and part time faculty with overtime workloads may reduce the teaching quality and the research activity of the involved members of staff. Hence it should be avoided. It is positive that additional funds for research purposes and conferences fees are allocated annually to each academic member.

5. DISTANCE LEARNING PROGRAMS

The programme team is supported by a distance learning unit that receives significant level of investment from the institution. This has resulted in a comprehensive infrastructure supporting the delivery of distance learning programmes. This infrastructure includes major software platforms including Moodle, TurnItIn, and WebEx. The latter is used for the delivery of webinars. The used systems are widely used internationally for distance learning delivery and constitute examples of good

practice. The used infrastructure supports the synchronous communication sessions between faculty and students. The institution plans to provide recordings of such sessions for those students who wish to revisit them or did not have the chance to attend them when they were first delivered.

The distance learning programme is also supported by training activities that help academics to get up to speed with the delivery of sessions and the support of students who are geographically dispersed. There is also a significant level of support for students in the form of induction activities, and technical assistance. The institution is also experienced in running distance education programmes as half of its students are enrolled to such programmes.

The team also has in place certain policies in terms of the frequency of communication with students and the period it takes for a staff member to respond to emails. There is also sufficient coordination in place to ensure that staff members communicate for the delivery of multiple sections of the same module in order to ensure consistent delivery.

The programme team must consider how to use plagiarism detection methods in a preventative way, consider additional ways for the provision of feedback and reflect whether certain learning analytic techniques can be used for monitoring student performance.

6. DOCTORAL PROGRAMS OF STUDY

Not applicable section.

CONCLUSIONS AND SUGGESTIONS OF THE EXTERNAL EVALUATION COMMITTEE¹

The Department of Computer Science of the University of Nicosia has developed a distance learning (DL) Master programme addressing important and emerging areas within the wider field of Computer Science.

This programme appears to be adequately supported by the full time and part time faculty members of the University of Nicosia and the overall infrastructure of the institution. The latter provides adequate support for offering distance learning programmes as the one that has been reviewed.

Our view is that although the reviewed Master programme is comparable to national and international programmes of the same level, it would benefit from some key improvements. These relate to:

- (a) The development of clear guidelines regarding the selection of elective modules for students who decide not to take any of the three specialization areas. These guidelines should ensure that the core knowledge expected from someone with

¹ It is highlighted, at this point, that the External Evaluation Committee is expected to justify its findings and its suggestions on the basis of the Document num.: 300.1. The External Evaluation Committee is not expected to submit a suggestion for the approval or the rejection of the program of study under evaluation. This decision falls under the competencies of the Council of the Agency of Quality Assurance and Accreditation of higher education.

- an advanced Master degree in Computer Science are covered.
- (b) Requiring all students, who take the programme, to do a thesis (COMP-599). This thesis should involve the solution of some complex computational problem (e.g., development of a computer system, thorough evaluation of a computer system, use of computing techniques for solving a problem in some application domain).
 - (c) Amending the COMP-500DL module to cover basic statistical analysis and quantitative methods and user-centric system evaluation techniques in order to provide the minimal training in research methods that is necessary for graduates with an MSc in Computer Science.
 - (d) Introducing grade moderation at programme level. Such a process would involve producing general statistics of the grades given in different modules, comparing them, exploring the reasons underpinning significant differences between module grade statistics, and deciding whether or not actions would be necessary as a consequence. Such a process would enable the programme team and the institution to spot problems related to module delivery, assessment and in some circumstances content.

Care should also be taken to ensure that all teaching/learning material that is yet to be developed to support the distance learning delivery of the programme will comply with the good practice that was evidenced for the already developed material that the Evaluation Committee had the opportunity to scrutinize.

Doc. Number: 300.1

Quality Standards and Indicators
External Evaluation of a Program of Study

Institution: UNIVERSITY OF NICOSIA

Program of Study: MSc IN COMPUTER SCIENCE (3 SPECIALIZATIONS)

Duration of the Program of Study: 3 SEMESTERS

Evaluation Date: 10-11 JUNE 2017

The present document has been prepared within the framework of the authority and competencies of the Cyprus Agency of Quality Assurance and Accreditation in Higher Education, according to the provisions of the “Quality Assurance and Accreditation of Higher Education and the Establishment and Operation of an Agency on Related Matters Laws of 2015 to 2016”.

The document describes the quality standards and indicators, which will be applied for the external evaluation of programs of study of institutions of higher education, by the External Evaluation Committee.

DIRECTIONS: Note what is applicable for each quality standard/indicator.

1. Applicable to a minimum degree
2. Applicable to a non-satisfactory degree
3. Applicable to a satisfactory degree
4. Applicable to a very satisfactory degree
5. It applies and it constitutes a good practice

It is pointed out that, in the case of standards and indicators that cannot be applied due to the status of the institution and/or of the program of study, N/A (= Not Applicable) should be noted and a detailed explanation should be provided on the institution’s corresponding policy regarding the specific quality standard or indicator.

Members of the External Evaluation Committee

NAME	TITLE	UNIVERSITY / INSTITUTION
George Spanoudakis	Professor	City, University of London
Costas Mourlas	Associate Professor	National and Kapodistrian University of Athens
George Dafoulas	Associate Professor	Middlesex University
Georgia Kouti	Miss	Student, University of Cyprus
Andreas Kyprianou	Dr.	ETEK

Date and Time of the On-Site Visit: 8th of June 2017

Duration of the On-Site Visit: 1 day

1. EFFECTIVENESS OF TEACHING WORK – AVAILABLE RESOURCES							
1.1	Organization of teaching work		1	2	3	4	5
1.1.1	The student admission requirements to the program of study, are based on specific regulations which are adhered to in a consistent manner.				X		
1.1.2	The number of students in each class allows for constructive teaching and communication, and it compares positively to the current international standards and/or practices.						X
1.1.3	The organization of the educational process safeguards the quality implementation of the program's purpose and objectives and the achievement of the learning outcomes. Particularly, the following are taken into consideration:						X
	1.1.3.1	The implementation of a specific academic calendar and its timely publication.					X
	1.1.3.2	The disclosure of the program's curricula to the students, and their implementation by the teaching personnel					X
	1.1.3.3	The course web-pages, updated with the relevant supplementary material					X
	1.1.3.4	The procedures for the fulfilment of undergraduate and postgraduate assignments / practical training					X
	1.1.3.5	The procedures for the conduct and the format of the examinations and for student assessment				X	
	1.1.3.6	The effective provision of information to the students and the enhancement of their participation in the procedures for the improvement of the educational process.					X
1.1.4	Adequate and modern learning resources, are available to the students, including the following:						X
	1.1.4.1	facilities					X
	1.1.4.2	library					X
	1.1.4.3	infrastructure					X

	1.1.4.4	student welfare					X
	1.1.4.5	academic mentoring			X		
1.1.5	A policy for regular and effective communication, between the teaching personnel and the students, is applied.						X
1.1.6	The teaching personnel, for each course, provide timely and effective feedback to the students.						X
1.1.7	Statutory mechanisms, for the support of students and the communication with the teaching personnel, are effective.						X
1.1.8	Control mechanisms for student performance are effective.						X
1.1.9	Support mechanisms for students with problematic academic performance are effective.						X
1.1.10	Academic mentoring processes are transparent and effective for undergraduate and postgraduate programs and are taken into consideration for the calculation of academic work load.						X
1.1.11	The program of study applies an effective policy for the prevention and detection of plagiarism.					X	
1.1.12	The program of study provides satisfactory mechanisms for complaint management and for dispute resolution.						X

Justify the answer you have provided and note the additional comments you may have on each standard / indicator.

1.1.1: Admission regulations are not specific when it comes to non-Computer Science or Engineering graduates. The programme team explained that they are applying additional criteria in the case of such students. In particular, they indicated that they look for evidence of coverage of the following subjects: databases and data structures, programming, system analysis and design and networks. Such requirements should be clearly expressed in the admission criteria.

1.1.2: The institution confirmed that the national standard of a maximum of 30 students per section is adhered to and more sections will be introduced if certain courses exceed this number.

1.1.3.1: A detailed academic calendar is provided at the beginning of each semester to faculty and students.

1.1.3.2: Detailed guidelines are provided to the students via the Moodle platform.

1.1.3.3: All changes must be approved by the department's council and subsequently the senate before the academic affairs team updates the website.

1.1.3.4: Assessment settings is adequate. There is not however any process of mark moderation. Such a process should be introduced and be informed by a comparative analysis of general mark statistics at the module level (e.g., comparison of module average marks and their standard deviations) to detect significant deviations for particular student cohorts.

1.1.3.5 Students that decide not to take a thesis in the last semester have to be informed about any consequences according to their specialization of their degree and the effect on any future academic studies.

1.1.3.6: A detailed evaluation process includes a survey that allows students to provide their views on several aspects of the educational process.

1.1.4.1: An impressive range of facilities are available for students of the programme as well as across all programmes delivered by the institution.

1.1.4.2: A fully equipped library is available with online access to all necessary resources for the programme.

1.1.4.3: The infrastructure needed for the delivery of the distance learning programme is to the appropriate standard and state of the art facilities are provided.

1.1.4.4: There are certain structures and services addressing a range of student issues.

1.1.4.5: Although there is support towards new staff members from more experienced colleagues and the Head of Department, there is no formal procedure followed for staff mentoring. There is an orientation programme that lasts for six hours at institutional level at the beginning of the year but this focuses more on rules and regulations.

1.1.5: At least once a year, a Board of Studies provides the necessary opportunity for students to communicate their views to staff.

1.1.6: Students are provided with feedback within a period of two weeks from their midterms and a policy of 48 hours is enforced for answering to student emails.

1.1.7: There are student advisor roles within the team of administrative staff and certain staff members are assigned as personal tutors. Staff members also have certain office hours assigned. However, students tend to communicate their issues to the Head of Department and should be encouraged to choose the appropriate channels and procedures when seeking support.

1.1.8: There are diagnostic tests as a method of formative assessment. Quizzes are available for most of the modules to test the pulse of the students.

1.1.9: There is the student success centre providing language, maths and other support courses.

1.1.10: Teaching loads are assessed and faculty with more students will be given overtime. The maximum teaching load per week is 9 hours per week for associate professor across all courses of the institution and 6 hours per week for full

professors.

1.1.11: TurnItIn is widely used but apparently as a detecting mechanism. The same approach is used with code checking software. The programme team should consider how to introduce preventive mechanisms in order to educate students and avoid plagiarism.

1.1.12: Such issues are raised with the module leaders in the first instance and the Head of Department if necessary.

Note, additionally:

α) the expected number of Cypriot and International Students in the program of study.

Half of the student population is expected to be from Greece.

β) the countries of origin of the majority of students.

Greece and Cyprus

γ) the maximum planned number of students per class-section.

30

1.2	Teaching	1	2	3	4	5
1.2.1	The methodology utilized in each course is suitable for achieving the course's purpose and objectives and those of the individual modules.					X
1.2.2	The methodology of each course is suitable for adults.					X
1.2.3	Continuous-formative assessment and feedback are provided to the students regularly.					X
1.2.4	The assessment system and criteria regarding student course performance, are clear, adequate, and known to the students.					X
1.2.5	Educational activities which encourage students' active participation in the learning process, are implemented.					X
1.2.6	Teaching incorporates the use of modern educational technologies that are consistent with international standards, including a platform for the electronic support of learning.					X
1.2.7	Teaching materials (books, manuals, journals, databases, and teaching notes) meet the requirements set by the methodology of the program's individual courses, and are updated regularly.					X

Justify the answer you have provided and note the additional comments you may have on each standard / indicator.

1.2.1: Module teams discuss issues relating to the delivery of several sections of the same course.

1.2.2: There is no evidence to the contrary.

1.2.3: Quizzes and verbal assessment are the primary methods used by module leaders to assess student performance.

1.2.4: Each course has a detailed guideline providing indication for the criteria used in assessment.

1.2.5: Students are encouraged to participate in discussions and the same practice is applied to distance learning courses.

1.2.6: Moodle and WebEx are two of the technologies used for the delivery of the programme.

1.2.7: All the necessary resources specified are relevant and up to date.

1.3	Teaching Personnel	1	2	3	4	5
1.3.1	The number of full-time academic personnel, occupied exclusively at the institution, and their fields of expertise, adequately support the program of study.				X	
1.3.2	The members of teaching personnel for each course have the relevant formal and fundamental qualifications for teaching the course, as described by the legislation, including the following:					X
	1.3.2.1 Subject specialization, preferably with a doctorate, in the discipline.					X
	1.3.2.2 Publications within the discipline.				X	
1.3.3	The specializations of Visiting Professors adequately support the program of study.					X
1.3.4	Special Teaching Personnel and Special Scientists have the necessary qualifications, adequate work experience and specialization to teach a limited number of courses in the program of study.			N / A		
1.3.5	In every program of study the Special Teaching Personnel does not exceed 30% of the Teaching Research Personnel.			N / A		
1.3.6	The teaching personnel of each private institution of tertiary education, to a percentage of at least 70%, has					X

	recognized academic qualification, by one level higher than that of the program of study in which he/she teaches.					
1.3.7	In the program of study, the ratio of the number of courses taught by full-time personnel, occupied exclusively at the institution, to the number of courses taught by part-time personnel, ensures the quality of the program of study.				X	
1.3.8	The ratio of the number of students to the total number of teaching personnel is adequate for the support and safeguarding of the program's quality.					X
1.3.9	The academic personnel's teaching load does not limit the conduct of research, writing, and contribution to the society.				X	
1.3.10	Future redundancies / retirements, expected recruitment and promotions of academic personnel safeguard the unimpeded implementation of the program of study within a five-year span.					X
1.3.11	The program's Coordinator has the qualifications and experience to efficiently coordinate the program of study.					X

Justify the answer you have provided and note the additional comments you may have on each standard / indicator.

1.3.1: Although overall full-time and part time faculty numbers are adequate, there is not sufficient support for the specialization in Blockchain technologies. At least one full time faculty member should be appointed to provide adequate support for this area.

1.3.2.2: Most of faculty have recent peer reviewed publications in the subject areas where they teach.

1.3.7: The ratio of full-time over part-time personnel needs to be increased in the case of blockchain technologies.

1.3.8: The rating assumes 30 students per admission period, as it was communicated verbally during the visit. The current ratio that is deemed satisfactory should be maintained, following any changes in the student numbers in the future.

1.3.9: The contractual teaching load for full time faculty members is 6 hours per week for senior staff and 9 hours per week for junior staff, as the institution confirmed to the External Evaluation Committee. This provides sufficient time for research. The institution should ensure that no extra teaching should be given to full time faculty members through additional overtime teaching contracts, as this would have a detrimental effect on the faculty's research. This is particularly important given the fact that the programme of concern is delivered through distance learning and, therefore, creates additional demand upon faculty time (e.g., more hours of online student contact to address questions, content preparation and revision etc.).

1.3.10: The institution expressed verbally its intention to hire more faculty members if the programme's recruitment exceeds considerably the envisaged targets.

2. PROGRAM OF STUDY AND HIGHER EDUCATION QUALIFICATIONS						
2.1	Purpose and Objectives and learning outcomes of the Program of Study	1	2	3	4	5
2.1.1	The purpose and objectives of the program of study are formulated in terms of expected learning outcomes and are consistent with the mission and the strategy of the institution.				X	
2.1.2	The purpose and objectives of the program and the learning outcomes are utilized as a guide for the design of the program of study.					X
2.1.3	The higher education qualification and the program of study, conform to the provisions of their corresponding Professional and Vocational Bodies for the purpose of registration to these bodies.					X
2.1.4	The program's content, the methods of assessment, the teaching materials and the equipment, lead to the achievement of the program's purpose and objectives and ensure the expected learning outcomes.				X	
2.1.5	The expected learning outcomes of the program are known to the students and to the members of the academic and teaching personnel.					X
2.1.6	The learning process is properly designed to achieve the expected learning outcomes.					X
2.1.7	The higher education qualification awarded to the students, corresponds to the purpose and objectives and the learning outcomes of the program.					X
<p>Justify the answer you have provided and note the additional comments you may have on each standard / indicator.</p> <p>2.1.1: There are detailed learning outcomes for the entire programme, each concentration and every individual course. These are discussed in detail as part of the learning guides for each course. However, the team must consider the adoption of a more suitable use of words when describing the work that is to be carried out, in order to reflect level 7 learning descriptors. There are appropriate guidelines the institution can follow, as it is aligned to the Bologna process and the three cycles. At this level students are expected to provide evidence of evaluation, synthesis, critical evaluation, construction of knowledge and critical thinking. It is important for the programme team to revisit the learning outcomes in order to ensure that all of them are phrased appropriately.</p> <p>2.1.2: The programme of study is aligned to the learning outcomes. Each course is</p>						

aligned to the programme's learning outcomes and a detailed learning outcome was presented to the External Evaluation Committee during the meeting with the programme team.

2.1.3: The programme team confirmed that the requirements for ETEK and the Computer Society are met.

2.1.4: The documentation provided for each course in the form of a learning guide included a detailed breakdown of assessment components. It also provided an outline of the different assessment methods used for each course. However, it would be good practice to provide at this stage evidence of specific assessment examples as they would be carried out during the programme's run.

2.1.5: All stakeholders of the programme have access to the learning outcomes as they appear in the programme's space on Moodle. Course leaders also provide them at the beginning of each course as part of the course guidelines.

2.1.6: Appropriate learning activities are organized as part of each course in line with the course learning outcomes.

2.1.7: The programme title is fully aligned to the learning outcomes of the programme.

2.2	Structure and Content of the Program of Study	1	2	3	4	5
2.2.1	The course curricula clearly define the expected learning outcomes, the content, the teaching and learning approaches and the method of assessing student performance.					X
2.2.2	The European Credit Transfer System (ECTS) is applied and there is true correspondence between credits and workload per course and per semester for the student either he / she studies in a specific program or he/she is registered and studies simultaneously in additional programs of studies according to the European practice in higher education institutions.					X
2.2.3	The program of study is structured in a consistent manner and in sequence, so that concepts operating as preconditions precede the teaching of other, more complex and cognitively more demanding, concepts.			X		
2.2.4	The higher education qualification awarded, the learning outcomes and the content of the program are consistent.					X
2.2.5	The program, in addition to the courses focusing on the specific discipline, includes an adequate number of general education courses.					X
2.2.6	The content of courses and modules, and the				X	

	corresponding educational activities are suitable for achieving the desired learning outcomes with regards to the knowledge, skills, and abilities which should be acquired by students.					
2.2.7	The number and the content of the program's courses are sufficient for the achievement of learning outcomes.				X	
2.2.8	The content of the program's courses reflects the latest achievements / developments in science, arts, research and technology.				X	
2.2.9	Flexible options / adaptable to the personal needs or to the needs of students with special needs, are provided.					X

Justify the answer you have provided and note the additional comments you may have on each standard / indicator.

2.2.3: Whilst the programme includes interesting and coherently structured specializations, it does not require the students to select one of them and leaves too many credits accrued through electives (up to 54, i.e., more than half of the total ECTS for the programme). Some advice should be offered to students, who do not select one of the three concentrations, regarding meaningful combinations of electives. More, importantly however, we suggest that the final thesis module (i.e., COMP-599DL) should become compulsory for any student taking the programme. This would be necessary to ensure that students develop skills in combining knowledge from different modules (notably research methodology, literature study, programming, system evaluation) and apply it in solving some large scale computing problem independently.

2.2.6: The COMP-500DL module should cover basic statistical analysis and quantitative methods and user-centric system evaluation techniques.

2.2.7: See earlier comment under 2.2.3. The syllabus of some practical development modules (COMP-528DL, COMP-523DL and COMP-521DL) is too ambitious and might not be possible to deliver and assess it effectively through distance learning (DL). Our suggestion would be to scope these modules down to ensure their adequacy for DL.

2.2.8: Overall the content of individual modules is adequate, except that it does not cover privacy (this is important for the concentration on cyber security), and statistical analysis, quantitative methods and user-centric system evaluation techniques (see also comment 2.2.6 above). The required textbooks of some modules appear to be outdated (e.g., COMP-522DL, COMP-524DL, COMP-528DL, COMP-525DL).

Note the expected number of students who will be studying simultaneously at another academic institution, based on your experience so far, regarding students who study simultaneously in the programs of your institution.

No such students.

2.3	Quality Assurance of the Program of Study	1	2	3	4	5
2.3.1	The arrangements regarding the program's quality assurance define clear competencies and procedures.					X
2.3.2	Participation in the processes of the system of quality assurance of the program, is ensured for					X
	2.3.2.1 the members of the academic personnel					X
	2.3.2.2 the members of the administrative personnel					X
	2.3.2.3 the students.					X
2.3.3	The guide and / or the regulations for quality assurance, provide detailed information and data for the support and management of the program of study.					X
2.3.4	The quality assurance process constitutes an academic process and it is not restricted by non-academic factors.					X
<p>Justify the answer you have provided and note the additional comments you may have on each standard / indicator.</p> <p>The quality assurance programme operated by the institution is fully satisfactory and follows good international practice in all respects.</p>						
2.4	Management of the Program of Study	1	2	3	4	5
2.4.1	Effective management of the program of study with regard to its design, its approval, its monitoring and its review, is in place.					X
2.4.2	It is ensured that learning outcomes may be achieved within the specified timeframe.				X	
2.4.3	It is ensured that the program's management and development process is an academic process which operates without any non-academic interventions.					X
2.4.4	The academic hierarchy of the institution, (Rector, Vice-Rectors, Deans, Chairs and Programs' Coordinators, academic personnel) have the sole responsibility for academic excellence and the development of the programs of study.					X
2.4.5	Information relating to the program of study are posted publicly and include:			N /		

					A	
2.4.5.1	The provisions regarding unit credits				N / A	
2.4.5.2	The expected learning outcomes				N / A	
2.4.5.3	The methodology				N / A	
2.4.5.4	Course descriptions				N / A	
2.4.5.5	The program's structure				N / A	
2.4.5.6	The admission requirements				N / A	
2.4.5.7	The format and the procedures for student assessment				N / A	
2.4.6	The award of the higher education qualification is accompanied by the Diploma Supplement which is in line with the European and international standards.				N / A	
2.4.7	The effectiveness of the program's evaluation mechanism, by the students, is ensured.					X
2.4.8	The recognition and transfer of credit units from previous studies is regulated by procedures and regulations which ensure that the majority of credit units is awarded by the institution which awards the higher education qualification.					X

Justify the answer you have provided and note the additional comments you may have on each standard / indicator.

2.4.2: The syllabus of some practical development modules (COMP-528DL, COMP-523DL and COMP-521DL) is too ambitious and their learning outcomes might not be achievable in the available timeframe (see also comment under 2.2.7).

2.4.5: This information is to be provided subject to programme approval.

2.4.8: A maximum of 30 CTS may be transferred. The programme involves no practical training.						
2.5	International Dimension of the Program of Study	1	2	3	4	5
2.5.1	The program's collaborations with other institutions are compared positively with corresponding collaborations of other departments / programs of study in Europe and internationally.					X
2.5.2	The program attracts Visiting professors of recognized academic standing.					X
2.5.3	Students participate in exchange programs.				N / A	
2.5.4	The academic profile of the program of study is compatible with corresponding programs of study in Cyprus and internationally.					X
<p>Justify the answer you have provided and note the additional comments you may have on each standard / indicator.</p> <p>2.5.2: The evaluated programme of study has currently no students. Nevertheless, the owning department (Computer Science) has received students through the Erasmus program for its MSc in CS (the conventional programme).</p> <p>2.5.4: The academic profile of the program of study is compatible with corresponding programs of study in Cyprus and internationally.</p>						
2.6	Connection with the labor market and the society	1	2	3	4	5
2.6.1	The procedures applied, so that the program conforms to the scientific and professional activities of the graduates, are adequate and effective.					X
2.6.2	According to the feasibility study, indicators for the employability of graduates are satisfactory.					
2.6.3	Benefits, for the society, deriving from the program are significant.					X
<p>Justify the answer you have provided and note the additional comments you may have on each standard / indicator.</p>						

A feasibility study has been received and gives promising evidence towards employability of the graduates.

3. RESEARCH WORK AND SYNERGIES WITH TEACHING						
3.1	Research - Teaching Synergies	1	2	3	4	5
3.1.1	It is ensured that teaching and learning have been adequately enlightened by research.				X	
3.1.2	New research results are embodied in the content of the program of study.				X	
3.1.3	Adequate and sufficient facilities and equipment are provided to support the research component of the program of study, which are available and accessible to the personnel and the students.			X		
3.1.4	The results of the academic personnel's research activity are published in international journals with the peer-reviewing system, in international conferences, conference minutes, publications etc.			X		
3.1.5	External, non-governmental, funding for the academic personnel's research activities, is compared positively to the funding of other institutions in Cyprus and abroad.		X			
3.1.6	Internal funding, of the academic personnel's research activities, is compared positively to the funding of other institutions in Cyprus and abroad.					X
3.1.7	The policy for, indirect or direct, internal funding of the academic personnel's research activity is satisfactory.					X
3.1.8	The participation of students, academic, teaching and administrative personnel of the program in research activities and projects is satisfactory.			X		
3.1.9	Student training in the research process is sufficient.			X		
<p>Justify the answer you have provided and note the additional comments you may have on each standard / indicator.</p> <p>3.1.1/2: Research of faculty members appears to have informed teaching in specific areas, notably blockchain technologies and mobile systems research (assisted living projects).</p> <p>3.1.3: Whilst no evident factor with a deteriorating effect upon the ability of the staff was identified, research appears to have been organised around individual members of the faculty rather than specialised research laboratories.</p> <p>3.1.4: Most of staff appear to have international peer reviewed publications. However, there are no annual or longer-term targets regarding this at either</p>						

individual or group/subject area level.

3.1.5: There is no track record of long term and sustained research funding. This is in line with other private Universities but somehow lower than the state Universities in Cyprus.

3.1.6: The university provides up to 2,000 Euros per year to faculty members for travel to present papers in international conferences. It also has an annual budget (endowment fund) of 100K Euro for funding up to five research projects per year to a maximum of 20K Euro each.

3.1.7: The selection of internal research projects is well established and involves peer reviewing by external experts.

3.1.9: The training that students receive in research could be enhanced. As commented earlier students receive no training in statistical, quantitative and user-centric evaluation methods. Also, as they are not required to do a thesis, they may end up having limited exposure to research.

4. ADMINISTRATION SERVICES, STUDENT WELFARE AND SUPPORT OF TEACHING WORK

4.1	Administrative Mechanisms	1	2	3	4	5
4.1.1	There is a Student Welfare Service that supports students with regards to academic and personal problems and difficulties.					X
4.1.2	Statutory administrative mechanisms for monitoring and supporting students are sufficient.					X
4.1.3	The efficiency of these mechanisms is assessed on the basis of specific criteria.					X

Justify the answer you have provided and note the additional comments you may have on each standard / indicator.

Students are supported by on-line environments and specialized personnel, which have been demonstrated to be adequate and robust in existing DL courses provided by the Institution.

4.2	Infrastructure / Support	1	2	3	4	5
4.2.1	There are suitable books and reputable journals supporting the program.					X
4.2.2	There is a supportive internal communication platform.					X
4.2.3	The facilities are adequate in number and size.					X
4.2.4	The equipment used in teaching and learning (laboratory and electronic equipment, consumables etc.) are quantitatively and qualitatively adequate.					X
4.2.5	Teaching materials (books, manuals, scientific journals, databases) are adequate and accessible to students.					X
4.2.6	Teaching materials (books, manuals, scientific journals, databases) are updated regularly with the most recent publications.			X		
4.2.7	The teaching personnel are provided with training opportunities in teaching method, in adult education, and in new technologies on the basis of a structured learning framework.					X

Justify the answer you have provided and note the additional comments you

may have on each standard / indicator.

4.2.6: The supportive material (books, presentations, webinars, exercises, teaching notes) are mainly provided to the students through the Moodle learning environment. Additional access to online books and journals is provided through digital library accounts given to the students upon registration. However, studying the course syllabus, a more updated list of suggested books and a more recent bibliography needs to be described in almost every course.

Special attention is need for providing to the students a distant access to a laboratory infrastructure for specialized practical assignments or additional simulation software enabling students testing the correctness of any program written for security, mobile or blockchain applications.

4.3	Financial Resources	1	2	3	4	5
4.3.1	The management and allocation of the financial resources of the program of study, allow for the development of the program and of the academic / teaching personnel.					X
4.3.2	The allocation of financial resources as regards to academic matters, is the responsibility of the relevant academic departments.					X
4.3.3	The remuneration of academic and other personnel is analogous to the remuneration of academic and other personnel of the respective institutions in Cyprus.			X		
4.3.4	Student tuition and fees are consistent to the tuition and fees of other respective institutions.					X

Justify the answer you have provided and note the additional comments you may have on each standard / indicator.

4.3.3: The remuneration of the academic personnel is lower (about 60%) compared to the state Universities and in parity with private Universities. Additional income for the personnel can be achieved through additional and overtime workload but this can reduce the teaching quality and the research activity of the academic members. It is positive that additional funds for research purposes and conferences fees are allocated annually to each academic member.

4.3.4: Fees are capped by the Government at the level of 9160 Euros for Master level onsite education programme; and 6000 Euros for Master level DL education programme as the one reviewed. Where students failed a module examination, the second examination attempt is charged by a small fee. A module retake incurs a fee of about 300 Euros.

The following criterion applies additionally for distance learning programs of study.

5.	DISTANCE LEARNING PROGRAMS	1	2	3	4	5
5.1	Feedback processes for teaching personnel with regards to the evaluation of their teaching work, by the students, are satisfactory.					X
5.2	The process and the conditions for the recruitment of academic / teaching personnel, ensure that candidates have the necessary skills and experience for long distance education.				X	
5.3	Through established procedures, appropriate training, guidance and support, are provided to teaching personnel, to enable it to efficiently support the educational process.					X
5.4	Student performance monitoring mechanisms are satisfactory.				X	
5.5	Adequate mentoring by the teaching personnel, is provided to students, through established procedures.					X
5.6	The unimpeded long-distance communication between the teaching personnel and the students, is ensured to a satisfactory degree.					X
5.7	Assessment consistency, its equivalent application to all students, and the compliance with predefined procedures, are ensured.					X
5.8	Teaching materials (books, manuals, scientific journals, databases) comply with the requirements provided by the long-distance education methodology and are updated regularly.			X		
5.9	The program of study has the appropriate and adequate infrastructure for the support of learning.					X
5.10	The supporting infrastructures are easily accessible.					X
5.11	Students are informed and trained with regards to the available educational infrastructure.					X
5.12	The procedures for systematic control and improvement of the supportive services are regular and effective.					X
5.13	Infrastructure for distance education is comparable to					X

	university infrastructure in the European Union and internationally.					
5.14	Electronic library services are provided according to international practice in order to support the needs of the students and of the teaching personnel.					X
5.15	The students and the teaching personnel have access to the necessary electronic sources of information, relevant to the program, the level, and the method of teaching.					X
5.16	The percentage of teaching personnel who holds a doctorate, in a program of study which is offered long distance, is not less than 75%.					X

Justify the answer you have provided and note the additional comments you may have on each standard / indicator.

5.1: A survey is used offering the chance to students to evaluate the learning experience, the ability of faculty to deliver distance learning programmes, the infrastructure and the technology used.

5.2: The institution aims at recruiting individuals with experience in distance learning but there is no evidence of a specialised recruiting process with emphasis on distance education.

5.3: There is a well-structured and organised distance learning unit with almost 50 staff members, a range of services and impressive training provision and support mechanisms.

5.4: Moodle reports are combined with academic performance. There is also attendance monitoring and the institution checks on students who do not access the Moodle environment. However, more advanced learning analytics should be used to ensure students receive personalised feedback, learning progress is monitored and student performance is based on more accurate indicators such as the participation in discussions and the contribution to specific learning activities.

5.5: Students are provided with sufficient training on the use of the distance learning platform and there is a well-organised supporting unit to ensure there are no technical difficulties that affect the students' learning process.

5.6: Webinars are used to ensure that students attend synchronous lectures but also participate in discussions with their lecturers and peers.

5.7: The course guidelines are based on a consistent method of teaching and assessment.

5.8: Most of the teaching/learning materials for the proposed programme was not developed yet. The available sample material that was shown to the committee was of adequate quality and compliant with international good practice.

5.9: There is a significant infrastructure based on the use of Moodle and Webinars which is sufficient for this programme.

5.10: The infrastructure seems to work effectively with both faculty and students. There is also evidence that there are sufficient support mechanisms in place to ensure that the distance learning programme will not be affected by failing infrastructure.

5.11: Students are supported from the distance learning unit with a range of training sessions.

5.12: There seems to be an impressive level of investment on distance learning and how the corresponding unit can provide support to academics and students. This includes project funding, research work and dissemination of scholarly activity.

5.13: The institution has sufficient distance learning infrastructure. It could consider adoption of innovative practices in the fields of learning analytics, e-pedagogies as well as various e-assessment practices and feedback mechanisms.

5.14: There is a very good list of e-resources available to the students of this programme.

5.15: All resources are available to both staff and students of the programme.

5.16: The programme is supported by skilled staff. Most of them have a PhD.

If the following apply, note “√” in the appropriate space next to each statement. In case the following statements do not apply, note what is applicable:

The maximum number of students per class-section, should not exceed 30 students.	√
The conduct of written examinations with the physical presence of the students, under the supervision of the institution or under the supervision of reliable agencies which operate in the countries of the students, is compulsory.	√
The number of long distance classes taught by the academic personnel does not exceed the number of courses taught by the teaching personnel in conventional programs of study.	√

The following criterion applies additionally for doctoral programs of study.

6.	DOCTORAL PROGRAMS OF STUDY	1	2	3	4	5
6.1	The provision of quality doctoral studies is ensured through Doctoral Studies Regulations.			N / A		
6.2	The structure and the content of a doctoral program of study are satisfactory and they ensure the quality provision of doctoral studies.			N / A		
6.3	The number of academic personnel, which is going to support the doctoral program of study, is adequate.			N / A		
6.4	The doctoral studies' supervisors have the necessary academic qualifications and experience for the supervision of the specific dissertations.			N / A		
6.5	The degree of accessibility of all interested parties to the Doctoral Studies Regulations is satisfactory.			N / A		
6.6	The number of doctoral students, under the supervision of a member of the academic personnel, is apt for the continuous and effective feedback provided to the students and it complies with the European and international standards.			N / A		
6.7	The research interests of academic advisors and supervisors are satisfactory and they adequately cover the thematic areas of research conducted by the doctoral students of the program.			N / A		

Justify the answer you have provided and note the additional comments you may have on each standard / indicator.

None of the questions in this section are applicable to the programme that was the subject of the evaluation.

Note the number of doctoral students under the supervision of each member of the academic personnel of the program and the academic rank of the supervisor.

Not applicable.

FINAL REMARKS – SUGGESTIONS

The Department of Computer Science of the University of Nicosia has developed a programme addressing important and emerging areas within the wider field of Computer Science. The three specializations (concentrations) of the programme are well thought.

This programme appears to be adequately supported by the full time and part time faculty members of the University of Nicosia and the overall infrastructure of the institution. The latter provides adequate support for offering distance learning programmes as the one that has been reviewed.

Our view is that the reviewed Master programme is comparable to national and international programmes of the same level. Nevertheless, it would benefit from some key improvements. These improvements have been summarised in pages 11 and 12 of this report.

Names and Signatures of the Chair and the Members of the External Evaluation Committee:

Name:	Signature:
George Spanoudakis	
Costas Mourlas	
George Dafoulas	
Georgia Kouti	
Andreas Kyprianou	

Date: Saturday, June 10, 2017.