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CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION
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Date: June 15, 2023

External Evaluation Report

University of Nicosia (Computer Science – Concentrations: 1. Cyber Security, 2. Mobile Systems, 3. Blockchain Technologies (MSc, 3 Semesters) – Distance Learning)

ΚΥΠΡΙΑΚΗ ΔΗΜΟΚΡΑΤΙΑ
REPUBLIC OF CYPRUS

- **Higher Education Institution: University of Nicosia**
- **Town: Nicosia**
- **School/Faculty (if applicable): School of Science and Engineering**
- **Department/ Sector: Computer Science**
- **Programme of study- Name (Duration, ECTS, Cycle)**
  In Greek: Μεταπτυχιακό Πρόγραμμα Σπουδών στην Πληροφορική
  In English: Master of Science in Computer Science
- **Language(s) of instruction: English**
- **Programme's status: Active**
- **Concentrations (if any):**
  In Greek: (i) Ασφάλεια Κυβερνοχώρου, (ii) Κινητά Συστήματα, (iii) Τεχνολογίες Blockchain – Εξ Αποστάσεως
  In English: (i) Cybersecurity, (ii) Mobile Systems, (iii) Blockchain Technology - Distance Learning

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 2021 [L.136(I)/2015 – L.132(I)/2021].

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A. Introduction

This part includes basic information regarding the onsite visit.

After an online briefing with the Cyprus Agency of Quality Assurance and Accreditation in Higher Education, the External Evaluation Committee (EEC) has been accompanied by Mrs. Natasa Kazakaiou to the University of Nicosia on June 14, 2023.

The EEC received a presentation from the Rector of the University about the structure and general strategy of the institution, as well as its history and academic structure. Updated information about the international ranking of the University of Nicosia and statistics on the scientific outputs of the University staff were presented. The centrality of Distance Learning (DL) programmes in the university's mission was also highlighted. The University offers 29 DL programmes, mainly at MSc level, to 7070 DL students (out of an overall population of 12,597). The members of the Internal Evaluation Committee for the MSc programme under consideration participated in this first part of the meeting.

Following this, the EEC received two presentations from the Head of the Computer Science Department, who is also the MSc Programme Coordinator. The first presentation was about the department's organisation, its mission and strategic planning, its connections with companies and society in general, and its development plans for the near future. The second presentation focused on the contents and management of the evaluated MSc programme, the adopted student-centred teaching methodology, and the defined procedures for student admission, progression, recognition, and certification.

The EEC used the last slot in the morning to meet the Director of the E-Learning Pedagogical Support Unit (EPSU) and some members of the EPSU team. This was the opportunity for the EEC to discuss and ask questions about the adopted e-Learning methodology, the characteristics of the employed E-Learning platform (and how plugins and additional tools have been integrated), and the programme study guides.

The EEC had the opportunity to ask questions throughout these presentations, and there was a constructive dialogue. Following this, in the afternoon, the EEC was able to have separate meetings with the Faculty (the three Concentration Leads and seven Faculty members), a selected set of students and graduates (one graduate and six students), and some members of the Administrative staff (including the Registrar, the Director of Library, and the Library Officer).

In addition, the EEC had the opportunity to visit the institution's premises, including the computer labs, in particular the Virtual Reality Lab, and the Robotics Lab. Information was given about how remote access to these facilities and hardware resources is possible for DL students (for example, the emulator for developing choreographies to be executed by the available Niki and Neo robots).

The EEC was also able to scrutinize the following documentation:

- the general University Guide;
- the Application for Evaluation - Accreditation Programme of Study;
- the Moodle portal with the full contents of one course of the MSc programme, i.e., COMP-513DL Cyber-Physical Systems and the Internet;
- Study Guides of the courses of the MSc programme.

The discussions during the on-site visit have allowed the EEC to clarify several aspects of the provided documentation with the Department and of the University members who have had a relation with the evaluated MSc programme. The EEC also took the opportunity during these interactions to ask for additional documents and information, which were promptly provided a few hours later. These additional documents required included:

- Credentials to access to the Virtual Learning Environment used by the MSc programme;
- Examples of interactive tools such as simulations, games, etc. used within the programme;
- Progression and retention data for the MSc in the last 2 years (years of real activity);
- Student evaluation data;
- Samples of exam papers;
- Recommendation to the students about the use of AI tools (recent Senate resolution, March 2023);
- Examples of course assessment;
- Student demographics statistics.

B. External Evaluation Committee (EEC)

Name	*Position*	*University*
Georgios Smaragdakis	Professor of Cybersecurity	Delft University of Technology (TU Delft)
Paolo Bellavista	Professor of Distributed and Mobile Systems	Alma Mater Studiorum - University of Bologna
Zhihan Lyu	Associate Professor of Computer Science	Uppsala University
Stylianos Hatzipanagos	Professor, Member (Expert E-Learning)	Centre for Online and Distance Education, University of London Worldwide
Stavrinos Kyriakou	Member (Student)	Open University of Cyprus

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C. Guidelines on content and structure of the report

- *The external evaluation report follows the structure of assessment areas.*
- *At the beginning of each assessment area there is a box presenting:*
  (a) *sub-areas*
  (b) *standards which are relevant to the European Standards and Guidelines (ESG)*
  (c) *some questions that EEC may find useful.*
- *The questions aim at facilitating the understanding of each assessment area and at illustrating the range of topics covered by the standards.*
- *Under each assessment area, it is important to provide information regarding the compliance with the requirements of each sub-area. In particular, the following must be included:*

Findings

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

Strengths

A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

- *The EEC should state the compliance for each sub-area (Non-compliant, Partially compliant, Compliant), which must be in agreement with everything stated in the report. It is pointed out that, in the case of standards that cannot be applied due to the status of the HEI and/or of the programme of study, N/A (= Not Applicable) should be noted.*
- *The EEC should state the conclusions and final remarks regarding the programme of study as a whole.*
- ***The report may also address other issues which the EEC finds relevant.***

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1. Study programme and study programme's design and development

(ESG 1.1, 1.2, 1.7, 1.8, 1.9)

Sub-areas

1.1 Policy for quality assurance
1.2 Design, approval, on-going monitoring and review
1.3 Public information
1.4 Information management

1.1 Policy for quality assurance

Standards

- *Policy for quality assurance of the programme of study:*
  - *has a formal status and is publicly available*
  - *supports the organisation of the quality assurance system through appropriate structures, regulations and processes*
  - *supports teaching, administrative staff and students to take on their responsibilities in quality assurance*
  - *ensures academic integrity and freedom and is vigilant against academic fraud*
  - *guards against intolerance of any kind or discrimination against the students or staff*
  - *supports the involvement of external stakeholders*

1.2 Design, approval, on-going monitoring and review

Standards

- *The programme of study:*
  - *is designed with overall programme objectives that are in line with the institutional strategy and have explicit intended learning outcomes*
  - *is designed by involving students and other stakeholders*
  - *benefits from external expertise*
  - *reflects the four purposes of higher education of the Council of Europe (preparation for sustainable employment, personal development, preparation for life as active citizens in democratic societies, the development and maintenance, through teaching, learning and research, of a broad, advanced knowledge base)*

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- *is designed so that it enables smooth student progression*
- *is designed so that the exams' and assignments' content corresponds to the level of the programme and the number of ECTS*
- *defines the expected student workload in ECTS*
- *includes well-structured placement opportunities where appropriate*
- *is subject to a formal institutional approval process*
- *results in a qualification that is clearly specified and communicated, and refers to the correct level of the National Qualifications Framework for Higher Education and, consequently, to the Framework for Qualifications of the European Higher Education Area*
- *is regularly monitored in the light of the latest research in the given discipline, thus ensuring that the programme is up-to-date*
- *is periodically reviewed so that it takes into account the changing needs of society, the students' workload, progression and completion, the effectiveness of procedures for assessment of students, student expectations, needs and satisfaction in relation to the programme*
- *is reviewed and revised regularly involving students and other stakeholders*

1.3 Public information

Standards

- *Regarding the programme of study, clear, accurate, up-to date and readily accessible information is published about:*
  - *selection criteria*
  - *intended learning outcomes*
  - *qualification awarded*
  - *teaching, learning and assessment procedures*
  - *pass rates*
  - *learning opportunities available to the students*
  - *graduate employment information*

1.4 Information management

Standards

- *Information for the effective management of the programme of study is collected, monitored and analysed:*
  - *key performance indicators*
  - *profile of the student population*
  - *student progression, success and drop-out rates*
  - *students' satisfaction with their programmes*
  - *learning resources and student support available*

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- *career paths of graduates*

- *Students and staff are involved in providing and analysing information and planning follow-up activities.*

You may also consider the following questions:

- *What is the procedure for quality assurance of the programme and who is involved?*
- *Who is involved in the study programme's design and development (launching, changing, internal evaluation) and what is taken into account (strategies, the needs of society, etc.)?*
- *How/to what extent are students themselves involved in the development of the content of their studies?*
- *Please evaluate a) whether the study programme remains current and consistent with developments in society (labour market, digital technologies, etc.), and b) whether the content and objectives of the study programme are in accordance with each other?*
- *Do the content and the delivery of the programme correspond to the European Qualifications Framework (EQF)?*
- *How is coherence of the study programme ensured, i.e., logical sequence and coherence of courses? How are substantial overlaps between courses avoided? How is it ensured that the teaching staff is aware of the content and outputs of their colleagues' work within the same study programme?*
- *How does the study programme support development of the learners' general competencies (including digital literacy, foreign language skills, entrepreneurship, communication and teamwork skills)?*
- *What are the scope and objectives of the foundation courses in the study programme (where appropriate)? What are the pass rates?*
- *How long does it take a student on average to graduate? Is the graduation rate for the study programme analogous to other European programmes with similar content? What is the pass rate per course/semester?*
- ***How is it ensured that the actual student workload is in accordance with the***

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workload expressed by ECTS?

- *What are the opportunities for international students to participate in the study programme (courses/modules taught in a foreign language)?*
- *Is information related to the programme of study publicly available?*
- *How is the HEI evaluating the success of its graduates in the labor market? What is the feedback from graduates of the study programme on their employment and/or continuation of studies?*
- *Have the results of student feedback been analysed and taken into account, and how (e.g., when planning in-service training for the teaching staff)?*
- *What are the reasons for dropping out (voluntary withdrawal)? What has been done to reduce the number of such students?*

Findings

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

The policy for the programme's quality assurance has a formal status and is publicly available. The Computer Science department has established a quality assurance committee to oversee the quality of the MSc's programmes. Moreover, the faculty members of the programme take a thirty-six-hour training (three hours per week for twelve weeks) that covers topics related to effective teaching, assessment, and distance learning education that contributes to the program's quality assurance. There are mechanisms in place to ensure academic integrity against academic fraud. The department has established an academic integrity committee. Student programming assignments, project reports, and theses submitted for grading and evaluation are checked against plagiarism software (Turnitin). When the software detects possible violations of academic integrity, the committee investigates the case. Regulations regarding fraud and violation of academic integrity at the university level also apply to this programme. The university has a policy of non-discrimination against students and staff that also applies to this programme. The department of Computer Science is responsible for the programme consulates public organizations, as well as private companies in Cyprus and abroad, regarding the development, design and updates of the programme.

The programme has explicit learning objectives and outcomes in line with the policy of the University. There are also explicit learning objectives and outcomes for the three concentrations. Students provide feedback for each course after three-quarters of the lectures have been delivered. The input is taken into consideration for the update of the course in future semesters. The programme committee and faculty also interact with public and private organizations and high-tech companies for the topics covered in the MSc's courses and the academic materials, platforms, and software. The programme has established collaborations with IT giants such as Google, Amazon, and smaller cybersecurity and blockchain companies. There are two adjunct faculty members from the industry that teach courses of the programme in the areas of security,

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distributed systems, and blockchain. The programme prepares the students for employment. Alumni of the programme and current students have already secured jobs in the industry in Cyprus and abroad (based on discussions the EEC had with students and staff). The programme focuses on disruptive computer technologies that advance the students' learning and knowledge. The programme also prepares the students to be active citizens by learning cutting-edge technologies that can shape future societies. Opportunities are given for personal development and training, e.g., emphasis on critical thinking, studying scientific articles, employing scientific and ethical research methods, and engaging with presentation of research results. The students also have the chance to develop additional skills in entrepreneurship. The programme is designed to enable the students' progression within the programme. In the first semester, the students take courses to build their foundational knowledge. In the second semester, they take courses belonging to the programme's concentrations, and in the third semester, they take elective courses or a thesis. The design of the course assignments, exams, and students' workload corresponds to the number of ECTS per course and for the programme. There is typically one programming assignment per week per course, and a final exam. There is also an internal procedure that evaluates the study programme before changes in the programme take place for the next academic year. Updates in the programme are subject to the formal institutional approval process. There is also regular monitoring of the programme by the programme committee that suggests and implements updates in the programme. The Head and Faculty of the programme take into consideration the latest research developments in computer science, cybersecurity, mobile systems, and blockchain regularly to update the study programme. The programme follows the framework for Qualifications of the European Higher Education Area. The feedback from the students regarding the workload is considered to improve the learning experience and effectiveness. There are also mechanisms (based on Moodle analytics and additional information received re: student performance and attendance) to assess the progression of the students. The programme team faculty members regularly receive feedback from the industry about skills that are required. Society's digitalization needs are also considered in the programme's design and update.

Regarding the study programme, detailed information about the intended learning outcomes for the MSc's in computer science and the concentrations in cybersecurity, mobile systems, and blockchain technologies are available on the programme's official Website. The degree title and the concentration name that will be awarded are also clearly specified. The selection criteria for the candidates are also clear and transparent. The possible graduate employment information and opportunities are also clearly articulated on the programme's official website. The programme admits students from everywhere in the world with a first degree in computer science or engineering. The admission criteria are transparent. The teaching, learning, and assessment procedures are transparent and publicly available. Pass rates and statistics about the students' demographics were available to the evaluation committee.

The programme is managed efficiently. Key performance indicators are clearly stated. Information about the profile of the student population is collected and maintained. Student progression is monitored, and there is frequent interaction between the faculty members and students about their progress. Statistics about the success and the drop-out rates are maintained. Key reasons for

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dropping-out are lack of sufficient background in computer science and long-term health issues. The students typically graduate in three or four semesters. About half of the students are working during their studies. Regular course surveys are collected to assess the students' satisfaction with the programme. Learning resources via the library and computing resources via the programme teams's collaboration with high-tech companies are available to the students. Students also have the chance to work on research projects funded internally or by third parties (e.g., European Union) during their studies. The programme informs students about possible career paths. The programme also has agreements with companies (e.g., Bank of Cyprus) for scholarships that can cover part of the tuition and guarantee employment after graduation. The placement rate of alumni of the programme in the labor market is excellent.

Strengths

A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

- Transparent quality assessment processes
- Selection criteria are transparent
- Transparent learning objective for the programme and the concentrations
- Regular course evaluation processes are in place
- Plenty of job opportunities for the alumni of the programme in the labor market

Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

- The student population of students in this programme is low (less than ten), which raises questions about the long term sustainability of the programme. It is recommended that the programme launches a campaign to attract students. The programme team might want to consider any of the following approaches:
    1. One option could be to offer a MSc in computer science to professionals of companies in Cyprus and abroad in the areas of cybersecurity, mobile systems, and blockchain and fintech companies.
    2. Another option is to admit students with a STEM background.
    3. A third option is to merge the computer science MSc's programme with the Data Science programme. The merged programme may have the same core courses in the first year, and then students can choose their concentration.

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Please select what is appropriate for each of the following sub-areas:

Sub-area		*Non-compliant/ Partially Compliant/Compliant*
1.1	Policy for quality assurance	Compliant
1.2	Design, approval, on-going monitoring and review	Compliant
1.3	Public information	Compliant
1.4	Information management	Compliant

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2. Student – centred learning, teaching and assessment *(ESG 1.3)*

Sub-areas

2.2 Process of teaching and learning and student-centred teaching methodology
2.3 Practical training
2.4 Student assessment
2.5 Study guides structure, content and interactive activities

2.1 Process of teaching and learning and student-centred teaching methodology

Standards

- *The e-learning methodology is appropriate for the particular programme of study.*
- *Expected teleconferences for presentations, discussion and question-answer sessions, and guidance are set.*
- *A specific plan is developed to safeguard and assess the interaction:*
  - *among students*
  - *between students and teaching staff*
  - *between students and study guides/material of study*
- *Training, guidance and support are provided to the students focusing on interaction and the specificities of e-learning.*
- *The process of teaching and learning supports students' individual and social development.*
- *The process of teaching and learning is flexible, considers different modes of e-learning delivery, where appropriate, uses a variety of pedagogical methods and facilitates the achievement of planned learning outcomes.*
- *Students are encouraged to take an active role in creating the e-learning process.*
- *The implementation of student-centered learning and teaching encourages a sense of autonomy in the learner, while ensuring adequate guidance and support from the teacher.*
- *Teaching methods, tools and material used in teaching are modern, effective, support the use of modern educational technologies and are regularly updated.*
- *Mutual respect within the learner-teacher relationship is promoted.*
- *The implementation of student-centred learning and teaching respects and attends to the*

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diversity of students and their needs, enabling flexible learning paths.

- *Appropriate procedures for dealing with students' complaints regarding the process of teaching and learning are set.*

2.2 **Practical training**

Standards

- *Practical and theoretical studies are interconnected.*
- *The organisation and the content of practical training, if applicable, support achievement of planned learning outcomes and meet the needs of the stakeholders.*

2.3 **Student assessment**

Standards

- *A complete assessment framework is designed, focusing on e-learning methodology, including clearly defined evaluation criteria for student assignments and the final examination.*
- *Assessment is consistent, fairly applied to all students and carried out in accordance with the stated procedures.*
- *Assessment is appropriate, transparent, objective and supports the development of the learner.*
- *The criteria for the method of assessment, as well as criteria for marking, are published in advance.*
- *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 e-learning process.*
- *Assessment, where possible, is carried out by more than one examiner.*
- *A formal procedure for student appeals is in place.*
- *Assessors are familiar with existing testing and examination methods and receive support in developing their own skills in this field.*
- *The regulations for assessment take into account mitigating circumstances.*

2.4 Study guides structure, content and interactive activities

Standards

- *A study guide for each course, fully aligned with e-learning philosophy and methodology and the need for student interaction with the material is developed. The study guide should include, for each course week / module, the following:*

- *Clearly defined objectives and expected learning outcomes of the programme, of the modules and activities in an organised and coherent manner*
- *Presentation of course material, and students' activities on a weekly basis, in a variety of ways and means (e.g. printed material, electronic material, teleconferencing, multimedia)*
- ***Weekly schedule of interactive activities and exercises (i.e. simulations, problem solving, scenarios, argumentation)***
- *Clear instructions for creating posts, discussion, and feedback*
- *Self-assessment exercises and self-correction guide*
- *Bibliographic references and suggestions for further study*
- *Number of assignments/papers and their topics, along with instructions and additional study material*
- *Synopsis*

- *Study guides, material and activities are appropriate for the level of the programme according to the EQF.*

You may also consider the following questions:

- *Is the nature of the programme compatible with e-learning delivery?*
- *How do the programme, the material, the facilities, and the guidelines safeguard the interaction between students, students and teaching staff, students and the material?*
- *How many students upload their work and discuss it in the platform during the semester?*
- *How is it monitored that the teaching staff base their teaching and assessment methods on objectives and intended learning outcomes? Provide samples of examination papers (if available).*
- *How are students' different abilities, learning needs and learning opportunities taken into consideration when conducting educational activities?*
- *How is the development of students' general competencies (including digital skills) supported in educational activities?*
- *How is it ensured that innovative teaching methods, learning environments and learning aids that support learning are diverse and used in educational activities?*
- *Is the teaching staff using new technology in order to make the teaching process more effective?*
- *How is it ensured that theory and practice are interconnected in teaching and learning?*
- *How is practical training organised (finding practical training positions, guidelines for practical training, supervision, reporting, feedback, etc.)? What role does practical training have in achieving the objectives of the study programme? What is student feedback on the content and arrangement of practical training?*
- ***Are students actively involved in research? How is student involvement in research set up?***
- *How is supervision of student research papers (seminar papers, projects, theses, etc.) organised?*

- ***Do students' assessments correspond to the European Qualifications Framework (EQF)?***
- *How are the assessment methods chosen and to what extent do students get supportive feedback on their academic progress during their studies?*
- *How is the objectivity and relevance of student assessment ensured (assessment of the degree of achievement of the intended learning outcomes)?*

Findings

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

There is a well-designed infrastructure that supports the design and implementations of online learning programmes at the University. All related initiatives are supported by the e-Learning Pedagogical Support Unit (e-PSU), using a pedagogical model of e-learning that takes current thinking on online pedagogies into account. Quality assurance seems to be functioning in a satisfactory fashion, maintaining standards and providing a consistent approach in the design of e-learning programmes.

The EEC had the opportunity to meet 6 students (1 graduate and 5 current students) and canvas for views about their student experience. All students were happy with the course and satisfied with the level of support they received (administrative and academic) in all courses, including the thesis. Feedback the students provided also focused on study workloads, student community and how this was achieved in the MSc cohorts and the use of interactive tools to support learning. (1) Some of the students felt that there was no strong sense of student community in the MSc cohort and no social interaction; this might have affected attitudes to learning and engagement in the programme. This had to do partly, according to them, with the lack of social interaction tools and activities on offer that students could engage with. (2) They also thought that tools that supported interactive activities such as the VLE forums and wikis were underused. (3) They would like to see more groupwork and more 'real life' experiments and events such as hackathons included in the curriculum (e.g. in the cybersecurity concentration).

The EEC reviewed the programme documentation and study guides for all courses. The study guides were well written and had the appropriate level of detail, providing a week-by-week description of content and activities, including formative and summative assessments. The learning outcomes were appropriate and corresponding to the postgraduate level of study, following current thinking about criticality and active learning approaches to designing course materials.

The EEC was given access to COMP-513DL Cyber-Physical Systems and the Internet course on the VLE. This was well designed and had an intuitive structure, though some of the sections, e.g. the course glossary was incomplete. The EEC had the opportunity to review a sample exam paper for the course above which seems to be well structured and at the right level. The programme team should think about reviewing all exam papers to make sure they employ an authentic

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assessment approach and that they take into account recent developments such as the proliferation of AI generative technologies like ChatGPT. Exams are taking place online, using a proctoring system (Proctorio) and there is no evidence of serious academic offenses or academic integrity issues. The MSc dissertation is optional.

Strengths

A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

- Quality of the course materials, inc. the study guides; there is appropriate level of detail and good emphasis on a range of activities to support summative assessment and formative assessment opportunities.
- Student satisfaction with the programme and positive evaluation of the student experience in student questionnaires (though participation in evaluation seems to be quite low).
- Support infrastructure for distance learning students in the programme and via the university support services, inc. those students with special needs.
- Adequate training and induction opportunities in e-learning for students and staff. Such activities support learning and help students to develop digital literacies and related skills.
- Internship opportunities were discussed by the programme team and this is a positive aspect of the programme, considering that the University has an excellent network of partnerships.

Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

- Thesis is optional in this program. This seems to reflect approaches in similar computing programmes in Cyprus. However, it contradicts established attitudes in HE toward the compulsory inclusion of a thesis in postgraduate programmes. The university should consider directing a bigger number of students towards the uptake of a thesis as they can benefit from the research experience of the members of the programme team and develop valuable professional skills.
- Internship opportunities should be publicised widely and linked to career advice the university provides.
- Establishing a student community would enhance the student experience and potentially have a positive impact on recruitment. The programme team should consider approaches and strategies in doing this, e.g. by engaging further students in events providing opportunities for social interaction. This led to partial compliance for 2.1.
- A bigger push on encouraging students to use interactive tools such as forums and wikis (in the VLE) and outside the VLE, e.g. including simulations, serious games etc.and (1) linking them to summative assessment and (2) structuring related activities to increase clarity about what students are expected to do and when. This resulted into partial compliance for 2.4.

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Please select what is appropriate for each of the following sub-areas:

Sub-area		*Non-compliant/ Partially Compliant/Compliant*
2.1	Process of teaching and learning and student-centred teaching methodology	partially compliant
2.2	Practical training	compliant
2.3	Student assessment	compliant
2.4	Study guides structure, content and interactive activities	partially compliant

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3. Teaching staff *(ESG 1.5)*

Sub-areas

3.1 **Teaching staff recruitment and development**
3.2 **Teaching staff number and status**
3.3 **Synergies of teaching and research**

3.1 Teaching staff recruitment and development

Standards

- *Institutions ensure the competence of their teaching staff.*
- *Fair, transparent and clear processes for the recruitment and development of the teaching staff are set up.*
- *Teaching staff qualifications are adequate to achieve the objectives and planned learning outcomes of the study programme, and to ensure quality and sustainability of the teaching and learning.*
- *The teaching staff is regularly engaged in professional and teaching-skills training and development.*
- *Training, guidance and support are provided to the teaching staff focusing on interaction and the specificities of e-learning.*
- *Promotion of the teaching staff takes into account the quality of their teaching, their research activity, the development of their teaching skills and their mobility.*
- *Innovation in teaching methods and the use of new technologies is encouraged.*
- *Conditions of employment that recognise the importance of teaching are followed.*
- *Recognised visiting teaching staff participates in teaching the study programme.*

3. 2 Teaching staff number and status

Standards

- *The number of the teaching staff is adequate to support the programme of study.*
- *The teaching staff status (rank, full/part time) is appropriate to offer a quality programme of study.*
- *Visiting staff number does not exceed the number of the permanent staff.*

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3.3 Synergies of teaching and research

Standards

- *The teaching staff collaborate in the fields of teaching and research within the HEI and with partners outside (practitioners in their fields, employers, and staff members at other HEIs in Cyprus or abroad).*
- *Scholarly activity to strengthen the link between education and research is encouraged.*
- *The teaching staff publications are within the discipline.*
- *Teaching staff studies and publications are closely related to the programme's courses.*
- *The allocation of teaching hours compared to the time for research activity is appropriate.*

You may also consider the following questions:

- *Is the teaching staff qualified to teach in the e-learning programme of study?*
- *How are the members of the teaching staff supported with regard to the development of their teaching skills? How is feedback given to members of the teaching staff regarding their teaching results and teaching skills?*
- *How is the teaching performance assessed? How does their teaching performance affect their remuneration, evaluation and/or selection?*
- *Is teaching connected with research?*
- *Does the HEI involve visiting teaching staff from other HEIs in Cyprus and abroad?*
- *What is the number, workload, qualifications and status of the teaching staff (rank, full/part timers)?*
- *Is student evaluation conducted on the teaching staff? If yes, have the results of student feedback been analysed and taken into account, and how (e.g., when planning in-service training for the teaching staff)?*

Findings

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

The EEC met with the teaching staff considering the submission of the documentation to assess the clarity and fairness of the approach to how the University recruits, appoints, inducts, and supports academic staff in delivering high-quality teaching research and student experience.

The recruitment and selection procedure has been described in detail and is fair and transparent. In the first two years of their appointment, staff must undergo a probation process, while all staff during the employment period must undergo an annual performance evaluation review. New

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academic staff are assigned a mentor. There are clear criteria for different teaching ranks (professor, associate professor etc.) and clear guidelines for progression and promotion.

The University has central procedures to support staff induction and development, such as teaching training. The EEC felt that an international university of this scale should have career paths for staff development.

There are currently 18 tenured academic staff in which 7 of them are full professors, 5 of them are International staff. Some staff are joint faculty members. There are also 3 non-tenured adjunct staff.

The existing staff's CVs demonstrate good evidence of appointed academic staff having prior and relevant teaching and research experience in higher education institutions and are members of professional organizations. Research expertise and publication records are relevant and consistent to the programmes of study. Each staff has published a few academic papers indexed by Scopus with some citations.

The staff are encouraged to teach students by using devices in a few labs with emerging technologies, e.g., VR lab, Robotic lab with the robot called "Niki".

Strengths

A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

- Staff expertise and relevance to the programme of study.

Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

- The EEC recommends the development of systematic central support with regards to staff induction and development.

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Please select what is appropriate for each of the following sub-areas:

Sub-area		*Non-compliant/ Partially Compliant/Compliant*
3.1	Teaching staff recruitment and development	compliant
3.2	Teaching staff number and status	compliant
3.3	Synergies of teaching and research	compliant

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4. Student admission, progression, recognition and certification *(ESG 1.4)*

Sub-areas

4.1 **Student admission, processes and criteria**
4.2 **Student progression**
4.3 **Student recognition**
4.4 **Student certification**

4.1 Student admission, processes and criteria

Standards

- *Pre-defined and published regulations regarding student admission are in place.*
- *Access policies, admission processes and criteria are implemented consistently and in a transparent manner.*

4.2 Student progression

Standards

- *Pre-defined and published regulations regarding student progression are in place.*
- *Processes and tools to collect, monitor and act on information on student progression, are in place.*

4.3 Student recognition

Standards

- *Pre-defined and published regulations regarding student recognition are in place.*
- *Fair recognition of higher education qualifications, periods of study and prior learning, including the recognition of non-formal and informal learning, are essential components for ensuring the students' progress in their studies, while promoting mobility.*
- *Appropriate recognition procedures are in place that rely on:*
  - *institutional practice for recognition being in line with the principles of the Lisbon Recognition Convention*
  - *cooperation with other institutions, quality assurance agencies and the national ENIC/NARIC centre with a view to ensuring coherent recognition across the country*

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4.4 Student certification

Standards

- *Pre-defined and published regulations regarding student certification are in place.*
- *Students receive certification explaining the qualification gained, including achieved learning outcomes and the context, level, content and status of the studies that were pursued and successfully completed.*

You may also consider the following questions:

- *Are the admission requirements for the study programme appropriate? How is the students' prior preparation/education assessed (including the level of international students, for example)?*
- *How is the procedure of recognition for prior learning and work experience ensured, including recognition of study results acquired at foreign higher education institutions?*
- *Is the certification of the HEI accompanied by a diploma supplement, which is in line with European and international standards?*

Findings

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

The procedures for student admission, progression, recognition, and certification are clearly defined and well organized.

In particular, the admission requirements are specific and strict (Bachelor Degree in Computer Science, Computer Engineering, or any other related field from a recognized University, with a CPA of at least 2.0; No candidates have been admitted so far after taking the preparatory foundation courses specified in the study guide: this would potentially limit the number of candidates to the MSc programme and affect recruitment, but guarantees a good uniformity in the cohort and the full capability of the students of dealing the advanced content of this MSc. It is the intention of UNIC to differentiate between the Data Science programme, and this one. Both programmes are open to students without a Bachelor in Computer Science/Engineering.

In relation to student progression and recognition, clearly defined and published regulations are in place. They are appropriate and quite standard, well organized and integrated with the administration support of the course programme. In particular, the recognition of prior learning (APEL) procedure respects the standard limitation of maximum 10% of credits accepted from prior learning and work experience; however , the recognition procedure has not been used yet for any students registered in this MSc.

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At the end of their studies, students receive certification explaining the qualification gained and, in the case of a concentration selected, an explicit indication of that concentration included in the certification.

Strengths

A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

- All the admission, progression, recognition and certification procedures are clearly articulated and communicated to the students in the student guide and on the Master course Website.
- The strict admission requirements generate a uniform student class, by giving the possibility to focus only on advanced concepts and technologies that are part of this MSc programme.
- In addition to the formal procedure for student progression, which is clearly indicated, the MSc programme has put in place appropriate procedures for academic advising. For example, students are contacted when they are inactive for a sufficiently long period of time, in order to stimulate their active participation in the Master activities and to encourage their progression. This is particularly important for Distance Learning programmes like this.

Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

- The programme team should consider an enhancement of the current student recruitment strategy to attract more students in the programme. See specific recommendation in section 1.

Please select what is appropriate for each of the following sub-areas:

Sub-area		*Non-compliant/ Partially Compliant/Compliant*
4.1	Student admission, processes and criteria	Compliant
4.2	Student progression	Compliant
4.3	Student recognition	Compliant
4.4	Student certification	Compliant

5. Learning resources and student support *(ESG 1.6)*

Sub-areas

5.1 **Teaching and Learning resources**
5.2 **Physical resources**
5.3 **Human support resources**
5.4 **Student support**

5.1 Teaching and Learning resources

Standards

- *Weekly interactive activities per each course are set.*
- *The e-learning material and activities take advantage of the capabilities offered by the virtual and audio-visual environment and the following are applied:*
  - *Simulations in virtual environments*
  - *Problem solving scenarios*
  - *Interactive learning and formative assessment games*
  - *Interactive weekly activities with image, sound and unlimited possibilities for reality reconstruction and further processing based on hypotheses*
  - *They have the ability to transfer students to real-life situations, make decisions, and study the consequences of their decisions*
  - *They help in building skills both in experiences and attitudes like in real life and also in experiencing - not just memorizing knowledge*
- *A pedagogical planning unit for e-learning, which is responsible for the support of the e-learning unit and addresses the requirements for study materials, interactive activities and formative assessment in accordance to international standards, is established.*
- *Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).*
- *All resources are fit for purpose.*
- *Student-centred learning and flexible modes of e-learning and teaching, are taken into account when allocating, planning and providing the learning resources.*

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5.2 Physical resources

Standards

- *Physical resources, i.e. premises, libraries, study facilities, IT infrastructure, are adequate to support the study programme.*
- *Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).*
- *All resources are fit for purpose and students are informed about the services available to them.*

5.3 Human support resources

Standards

- *Human support resources, i.e. tutors/mentors, counsellors, other advisers, qualified administrative staff, are adequate to support the study programme.*
- *Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).*
- *All resources are fit for purpose and students are informed about the services available to them.*

5.4 Student support

Standards

- *Student support is provided covering the needs of a diverse student population, such as mature, part-time, employed and international students and students with special needs.*
- *Students are informed about the services available to them.*
- *Student-centred learning and flexible modes of learning and teaching, are taken into account when allocating, planning and providing student support.*
- *Students' mobility within and across higher education systems is encouraged and supported.*

You may also consider the following questions:

- *Evaluate the supply of teaching materials and equipment (including teaching labs, expendable materials, etc.), the condition of classrooms, adequacy of financial resources to conduct the study programme and achieve its objectives. What needs to be supplemented/ improved?*
- *What is the feedback from the teaching staff on the availability of teaching*

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materials, classrooms, etc.?

- *Are the resources in accordance with actual (changing) needs and contemporary requirements? How is the effectiveness of using resources ensured?*
- *What are the resource-related trends and future risks (risks arising from changing numbers of students, obsolescence of teaching equipment, etc.)? How are these trends taken into account and how are the risks mitigated?*
- *Evaluate student feedback on support services. Based on student feedback, which support services (including information flow, counselling) need further development?*
- *How is student learning within the standard period of study supported (student counselling, flexibility of the study programme, etc.)?*
- *How students' special needs are considered (different capabilities, different levels of academic preparation, special needs due to physical disabilities, etc.)?*
- *How is student mobility being supported?*

Findings

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

The University of Nicosia has a well-placed, efficient, and reliable infrastructure when it comes to providing learning tools and support services to students. The University offers learning resources and support services to enable students to succeed academically and have a good student journey. During the onsite visit, the University staff demonstrated access to those systems (for example, the University's VLE, Moodle and the specifics of a course on the VLE). Also, students have confirmed their positive experience with the University's systems and available resources.

The University offers library resources, both online and physical; the latter that can be accessed by e-learning students by visiting local libraries taking advantage of collaborations that the university has in Cyprus and internationally). There is an excellent infrastructure and well equipped labs on campus that could also be accessed by e-learning students.

Staff have explained processes and available infrastructure to support students with special needs, including those in the e-learning cohort. The students the EEC has talked to have also confirmed that they get adequate support in academic advising and counseling. In addition accessibility needs seem to also be accommodated.

Strengths

A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

- Latest technology systems include programmable robots, and in house developed technologies and well-equipped labs with equipment relevant to the course focus. However these are mainly used for the benefit of the students on campus.
- Utilisation of industry experts as guest speakers to enhance the learning experience. Facilitation of a positive community culture among students and teaching staff.

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Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

- Student communities are organised and run by the students themselves. It would be good to see the utilisation of technologies and initiatives catered by the university to enable communication and knowledge transfer among students. Moodle plugins on the upcoming new version that the university will adopt in the near future could be utilised to this purpose.

Please select what is appropriate for each of the following sub-areas:

Sub-area		*Non-compliant/ Partially Compliant/Compliant*
5.1	Teaching and Learning resources	Compliant
5.2	Physical resources	Compliant
5.3	Human support resources	Compliant
5.4	Student support	Compliant

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D. Conclusions and final remarks

Please provide constructive conclusions and final remarks which may form the basis upon which improvements of the quality of the programme of study under review may be achieved, with emphasis on the correspondence with the EQF.

The EEC is overall satisfied with the programme organisation and implementation. The distance learning platforms in place and support are efficient. Quality assurance and student progression procedures are in place. Teaching staff and students are satisfied with their teaching positions and learning experience, respectively.

The EEC has a number of recommendations which would enhance the programme's structure and efficacy.

Programme sustainability

The student population of students in this programme is low (less than ten), which raises questions about the long term sustainability of the programme. The programme team should consider an enhancement of the current student recruitment strategy to attract more students in the programme. The programme team might want to consider any of the following approaches:

1. One option could be to offer a MSc in computer science to professionals of companies in Cyprus and abroad in the areas of cybersecurity, mobile systems, and blockchain and fintech companies.
2. Another option is to admit students with a STEM background.
3. A third option is to merge the computer science MSc's programme with the Data Science programme. The merged programme may have the same core courses in the first year, and then students can choose their concentration.

Learning, teaching, assessment, and student experience

- Thesis is optional in this program. This seems to reflect approaches in similar computing programmes in Cyprus. However, it contradicts established attitudes in HE toward the compulsory inclusion of a thesis in postgraduate programmes. The university should consider directing a bigger number of students towards the uptake of a thesis as they can benefit from the research experience of the members of the programme team and develop valuable professional skills.
- Internship opportunities should be publicised widely and linked to career advice the university provides.
- Establishing a student community would enhance the student experience and potentially have a positive impact on recruitment. The programme team should consider approaches and strategies in doing this, e.g. by engaging further students in events providing opportunities for social interaction.
- A bigger push on encouraging students to use interactive tools such as forums and wikis (in the VLE) and outside the VLE, e.g. simulations, serious games etc., e.g. by linking them to

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summative assessment and by structuring related activities to increase clarity about what students are expected to do and when.

- Student communities are organised and run by the students themselves. It would be good to see the utilisation of technologies and initiatives catered by the university to enable communication and knowledge transfer among students. Moodle plugins on the upcoming new version that the university will adopt in the near future could be utilised to this purpose.

Teaching staff

- The EEC recommends the development of systematic central support with regards to staff induction and development.

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E. Signatures of the EEC

Name	Signature
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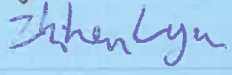
Zhihan Lyu	
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Date: June 15, 2023