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Date: 29-06-2021

External Evaluation Report (E-learning programme of study)

- **Higher Education Institution:**
Open University of Cyprus
- **Town:** Nicosia, Cyprus
- **School/Faculty (if applicable):** Faculty of Pure and Applied Sciences
- **Department/ Sector:** N/a
- **Programme of study-** MSc in Applied Health Informatics and Telemedicine (2 years FT, 100 ECTS)

In Greek:

Programme Name

In English:

MSc in Applied Health Informatics and Telemedicine

- **Language(s) of instruction:** Greek
- **Programme's status:** Currently Operating
- **Concentrations (if any):**

In Greek: Concentrations

In English: Concentrations



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 2019” [N. 136 (I)/2015 to N. 35(I)/2019].

A. Introduction

This part includes basic information regarding the onsite visit.

Following a preliminary meeting (Monday 7th June 2021) of the External Evaluation Committee (EEC) with Mr. Lefkios Neophytou (CYQAA), the visit took place on Thursday 10th June 2021. Because of the global Covid19 pandemic, an onsite visit was not possible: instead, an online visit took place using Zoom. A series of meetings was arranged between the EEC and members of staff from the Open University of Cyprus and a further meeting with three students (one current and two former students) from the MSc in Applied Health Informatics and Telemedicine programme. From the scheduled programme for the visit, it was intended that the visit also included a virtual visit of the premises of the institution (i.e., library, virtual computer labs). This did not take place, although it would have been relevant, given the nature of the programme, i.e., that it is a distance learning programme. However, the EEC received a guided tour of the eClass eLearning Platform used in all OUC programmes, which was helpful.

This report includes some overlap across the different sections, this was in some ways inevitable, but it also emphasises the importance of these points. We have summarised the key recommendations in the Conclusions section.

B. External Evaluation Committee (EEC)

<i>Name</i>	<i>Position</i>	<i>University</i>
Professor Peter Bath	Professor of Health Informatics and Health Data Analytics	University of Sheffield
Professor Uffe Kock Wiil	Professor of Health Informatics and Technology	University of Southern Denmark
Professor Carlo Combi	Professor	University of Verona
Panayiota Christodoulou	Medical student	University of Cyprus

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.**

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)*
 - *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*
 - *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 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.

1.1 Policy for quality assurance

The Open University of Cyprus (OUC) has an organizational unit devoted to the quality assurance of its programmes. The Quality Assurance Office manages the monitoring of the overall programmes and of the modules within them. OUC has explicit policies for quality assurance both at the University/School level and at the programme and modules levels. Different stakeholders are explicitly involved. External evaluations are considered.

1.2 Design, approval, on-going monitoring and review

According to the Open University of Cyprus (OUC) submission to the Cyprus Agency of Quality Assurance and Accreditation in Higher Education (CYQAA) and to the discussions with representatives of the University (the Rector, the vice-Rector, the staff member responsible of the internal quality assurance committee and the Academic Coordinator of the Master's programme under evaluation), there is a clear and formally defined process for the design and approval of new master courses. The different bodies of OUC (Schools, Senate, Studies and Scientific Committees, University Council) are suitably involved in the proposal and decision steps, before sending the proposal to the CYQAA.

Similar considerations may also be undertaken for the process related to relevant changes for programmes of study.

Ongoing monitoring and review are undertaken on a regular basis, both internally and externally, with yearly evaluations. Every three years a more extensive evaluation is undertaken.

Internal regulation documents about different aspects are available on the official web site of OUC both in Greek and in English.

1.3 Public information

As noted above, internal regulation documents about different aspects are available on the official web site of OUC, both in Greek and in English.

On the web site, the programmes of courses and information about teaching staff are provided.

1.4 Information Management

From the report and the discussions during the visit, it is evident that learning resources and student support are available. Students have access to many online resources from the main international publishers (e.g., Elsevier, Springer, IEEE, ACM, and others). Paper-based resources are also available at the library. The Moodle-based learning platform supports all the teaching and learning activities. Some laboratory activities are also supported.

Information about the students' progress and learning performances is mainly acquired through the periodic assignments and the final exams. The Academic Coordinator manages the monitoring of the overall programme and of the different modules, through data from the student progression and from students' evaluation questionnaires. Students have also online tools for discussions regarding both single modules and the overall programme. A continuous improvement of the programme is obtained through the interaction among the Academic Coordinator and the teaching staff. The numbers of students and teaching staff allow for an informal management of possible issues and good interaction and information exchange.

Strengths

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

- The policies for quality assurance are clearly stated and followed. It is clear from both the Application for accreditation and from the discussions during the visit, that all the different stakeholders are suitably involved in the quality assurance processes, both at the university level and at the Course level. Interaction with students is good, also given the small number of students and their continuous involvement in the programme.

- The content of the modules covers highly relevant topics in Health Informatics and modules are coherent and provide students with a sound knowledge about the main aspects of healthcare informatics and telemedicine with a mostly application-oriented point of view.
- The overall Programme is developed, managed, and monitored in an appropriate way, and this is clear from the involvement and coordinated actions both of teaching and administrative staff and of students.
- The support from administrative staff is good and allows students and teaching staff to have a successful interaction through the e-learning platform, in-presence meetings, access to online bibliographic sources, etc.
- The information available on the web site is complete and well-structured. Even though this is a Master's programme offered in Greek, clear information is provided in English.

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 does not offer optional courses. This way some possibly interesting topics are not considered and/or are only briefly mentioned. We **recommend** that OUC may consider adding some optional modules. Optional modules would also allow the academic staff to finely tune module contents according to the background of attending students. For example, it could be of interest to have modules on subjects such as 'Artificial Intelligence in Medicine', 'Computerized systems for Clinical guidelines and pathways', 'Information retrieval and natural language processing for Medicine and Healthcare'.
- Some modules appear to be too "packed". Optional modules would also allow to "unpack" some current modules that face different and partially disjointed topics (e.g., bioinformatics issues within the module 'Patient data management & decision support' or databases and research methods in the module 'Biomedical databases & Biomedical research methodology'). We **recommend** that modules 'Patient data management & decision support' and 'Biomedical databases & Biomedical research methodology' are considered for some cleaning and refinement in their content.
- Some modules, according to the students' comments, are considered heavier than the other ones (e.g., the technical modules related to medical image processing and biomedical databases). While this is fine and suitably understood by students and teaching staff, it could be that proposing some "technical" module in the first semester could help to better understand the technicalities in the following modules, for example, those on medical records and PDMSs. Thus, technical modules would be understood and appreciated in a different way. We **recommend** that the OUC considers such kinds of harmonic changes.
- Key performance indicators (average duration of studies, mean exam rates, number of exams made several times, mean rates from questionnaires, and so on), even because of the small number of students, are not explicitly reported and apparently, they are used partially, in an informal way. We **recommend** that OUC adopt in some more formal way some key performance indicators in monitoring the evolution of the Master course.
- Even though the students of this Master are not "standard" students, i.e., they mostly already have a job in the biomedical area and want to have further skills, some further efforts should be done to have information about the employment of the students after the Master's graduation and their coherence with the Master contents. We **recommend** that OUC tries to obtain some detailed information about the job of people who graduated in previous years. This would inform the curriculum development as well as marketing activities.



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

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

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

Sub-areas

- 2.1 Process of teaching and learning and student-centred teaching methodology
- 2.2 Practical training
- 2.3 Student assessment
- 2.4 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 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.

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

The M.Sc. in Applied Health Informatics and Telemedicine is offered in Greek and is accredited with 100 ECTS credits. The students need to complete eight (8) semestrial Thematic Units (i.e., modules, 10 ECTS each), and a Master's Thesis (20 ECTS). All the courses are compulsory and taught through distance learning, and there are no elective courses. The duration of the program is four semesters, spread over 2 years.

The teaching methodology includes distance learning, live web lectures and also lectures that are recorded for offline viewing, interactive self-assessment exercises, laboratory exercises and group discussions during the online lectures, using the eClass forum, and during the Tutors' office hours. All the teaching material is provided to the students through an online learning platform (Moodle) and through access to the University's library. The training of

the students is completed with a six week visit to the Intense Care Unit (ICU) of Nicosia General Hospital during which the students can observe the knowledge they have gained being put into practice.

2.2 Practical training

There is no practical training in the programme's curriculum. However, students do have the opportunity to put their theoretical knowledge into action through interactive and online laboratory-based exercises.

2.3. Student assessment

Student assessment is clearly stated in the programme's description for each course. In particular, the final grade is calculated using the score of the final examination, the written assignments, and the weekly exercises if applicable.

2.4. Student guides structure, content, and interactive activities

There is a study guide for each course that is fully aligned with e-learning methodology and philosophy and with a clear schedule and structure for each course explained in detail in the application submitted by the university (ANNEX 2 – Course description). The study guide includes objectives and expected learning outcomes of the programme, the courses, and activities in a clear and organised manner. The guide describes the course material and students' activities on a weekly basis while providing information about the quantity of the weekly exercises where applicable. Mandatory as well as optional bibliographic references and a clear plan of the number of assignments and student assessments are included.

Strengths

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

- The programme is distance learning which makes it more convenient for students to have a flexible schedule. Students can study on their own pace and at the same time keep an organised schedule with the guidance of their professors and the study guide.
- All the material related to the courses is available online and can be accessed at anytime from anywhere. The online learning platform (Moodle) provides the ability to discuss and contact professors or fellow students, submit assignments, access bibliography etc. It is easy to use and available to all the students.
- It is evident that the teaching staff encourage participation, discussion, and cooperation among students through forums and by assigning group tasks and weekly exercises. This ensures the engagement of the students and results in students from different academic and professional backgrounds working together. The teaching staff are always available and in contact with the students to assist in anything that they might need during their studies.
- Students can track their progress and improve if they need to with self-assessment exercises, written assignments, the constant communication with the teaching staff, the collaboration with other students and the structure of the courses which provides a systematic evaluation.
- The final examination is conducted by a physical presence: however, this was not possible during the pandemic situation. Nevertheless, the university was able create a safe and credible examination environment remotely and, at same time, give their students the option to choose between oral or written examinations.
- During the programme, a variety of research examples are given to the students for further analysis and comprehension of the study objects. The bibliography and the study material appear up to date and match with reality. The study guide is coherent, organised and equipped with all the necessary information the students might need during their studies.

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.

- All the courses are compulsory. We **recommend** that the Programme team consider providing optional/elective courses for students to provide some choice, and to enable them to enhance their knowledge in an area in which they are particularly interested.
- The teaching staff are not permanent, they all work part-time on the programme and the breadth of expertise is relatively limited. We **recommend** that one or more posts are made to be permanent, and that the teaching faculty is expanded to provide stability to the programme and safety for the students.
- The programme is taught in Greek, but the bibliographies are mostly in English. We **recommend** that the Library provides access to databases with translated or Greek bibliographic materials, since most of the students on the current programme are Greek or Cypriot.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>
2.1	Process of teaching and learning and student-centred teaching methodology	Compliant
2.2	Practical training	Not applicable
2.3	Student assessment	Compliant
2.4	Study guides structure, content and interactive activities	Compliant

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.*

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.

3.1 Teaching staff recruitment and development

At present, the Open University of Cyprus does not have Faculty members teaching on the MSc programme, nor are there members within the Faculty in the areas of Applied Health Informatics and Telemedicine. The teaching is undertaken by Adjunct Faculty staff.

Staff on the programme therefore include Adjunct Faculty staff, who comprise Tutors on the programme, and the Academic Coordinator of the MSc Applied Health Informatics and Telemedicine. In accordance with the regulations of the Open University of Cyprus, the current Adjunct Faculty members have PhDs in relevant areas, e.g., Biomedical Engineering, Health Informatics, Medical Informatics and Digital Systems, from a recognised Higher Education Institution.

There appears to be a fair, transparent and clear process for the recruitment of the teaching staff. Applicants for Tutors on the programme are assessed according to clear criteria based on relevant teaching and research experience and their experience in teaching via distance learning. The process of reappointing or appointing new teaching staff is undertaken each year, based on the above criteria and on the candidate's evaluations as Tutor at the Open University of Cyprus over the previous five years (where applicable). Current Tutors are evaluated by the Module Co-ordinator and the Programme Academic Co-ordinator: these evaluations are submitted to the School and to the University Senate. Following these assessments, the contracts of the Adjunct Tutors are renewed, or otherwise, for the following academic year.

The current teaching staff are all employed part-time and also have employment in other organisations and are actively engaged in projects relating to the development and implementation of health and medical informatics. One of the teaching staff has a particularly strong academic research record. None of the teaching staff appears to have a teaching qualification and it is not clear whether they are regularly engaged in professional and teaching-skills training and development. It was not clear from the documentation, or from discussion in the online visit, as to what training, guidance and support are provided to the teaching staff, particularly in relation to e-learning.

In addition to the Adjunct Faculty staff teaching on the programme, a number of guest lecturers from external organisations contribute to the teaching on modules.

3.2 Teaching staff number and status

Four Adjunct Faculty members teach the Thematic Units of the MSc in Applied Health Informatics and Telemedicine, and a further Adjunct Faculty member is the Academic Co-ordinator. The Academic Co-ordinator does not teach on the programme, although this is his personal choice. These Adjunct Faculty members are all part-time, which means that there is effectively two full-time equivalent (FTE) teaching staff for the programme and a 0.5 FTE Academic Co-ordinator. The teaching staff appear (from Table 4 in the Application) to be teaching three periods per week (two staff) and six periods per week (two staff). One of these staff is an Associate Professor and the other three are Special Teaching Personnel.

From meetings with staff and students during the online site visit, the teaching staff and Academic Co-ordinator are very enthusiastic and dedicated to teaching and supporting the programme and, even though they are employed part-time, they are prepared to respond to student queries etc. throughout the week, and this is not limited to specific working hours. The students were very enthusiastic about the teaching staff, particularly how well they work as a team, and that they felt like a family, and individuals acting like “father figures” to them in the support and advice they gave.

The teaching staff have been employed within the programme for a range of periods including from the start of the programme in 2015-16 (two staff), to 2-3 years (two staff) to one year (two staff). The programme appears to be responsive to student feedback in the recruitment and retention of the teaching staff: following a poor evaluation by students a year ago, a number of teaching staff’s contracts were not renewed, and new staff were recruited.

3.3 Synergies of teaching and research

From the documentation provided, and from discussions with staff during the visit, the teaching staff are actively engaged in relevant research and development work in health and medical informatics in their employment outside of the Open University of Cyprus. This appears to feed into the curriculum and helps to keep the learning material up to date and relevant. The majority of the staff appear to have development and management roles in health and medical informatics, although one staff member appears to have a more traditional active research profile.

Strengths

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

- As noted above, the teaching staff are very enthusiastic and dedicated to teaching and supporting the programme. This is very much appreciated by the students, and there appears to be a very good relationship between the staff and students.
- Although the staff are employed part-time, they are prepared to respond to student queries etc. throughout the week, and this is not limited to specific working hours. They also provide useful and effective feedback for students to understand how they are progressing and how they can improve their work. This was affirmed by our discussion with the student representatives.
- The part-time nature of the teaching staff means that they have been recruited according to the relevance of their other non-OUC work, and this is a major strength of the programme. Their work clearly feeds into the curriculum.
- The programme has good links with external collaborators and industry to inform the development of the curriculum.
- The programme appears to make good use of external speakers and lecturers contributing to the teaching of modules.
- Two years ago there was an opportunity for students to visit a hospital / laboratory for up to six months to undertake work relevant to the programme.

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 recruitment and use of part-time staff mean that they bring a wealth of relevant project and industrial experience, as well as some academic research experience, to the programme. There are currently 26 full-time Faculty staff and 260 Adjunct Faculty staff within the OUC. The limited number of permanent full-time

academic staff within the OUC and the lack of permanent full-time academic staff on the programme is an area for improvement. The rankings of the current teaching staff (three Special Teaching Personnel and one Associate Professor) and the apparent lack of teaching qualifications is a limitation.

- We understand that the OUC is seeking permission to recruit a number of full-time Faculty staff and that at least one of these posts (if approved) will be appointed to the MSc in Applied Health Informatics and Telemedicine.
- We **recommend** that the OUC appoint a permanent full-time member of Faculty staff for the programme, and that they consider making this appointment in a developing area, e.g., health data science or other cognate area, to strengthen and broaden the programme. The successful candidate should be an active researcher with a strong publication record and experience in teaching (preferably with some e-learning / distance learning experience). Ideally, the appointment should be made at Associate Professor level, as a minimum.
- We also **recommend** that the OUC consider that this post has a role in both the teaching and co-ordination of the programme, as well as ensuring that there are appropriate opportunities for the post-holder to engage in research in their chosen field.
- We **recommend** that the OUC / Faculty explore opportunities for the post-holder to engage in the supervision of PhD students.
- There appear to be limited opportunities for the development of teaching skills, particularly in relation to e-learning within the OUC. We **recommend** that the OUC provides this support for new staff, and ongoing support and development for continuing staff.
- Although the programme appears to make good informal use of collaborators from external organisations and industry, we **recommend** that the programme develops an Advisory Panel, that meets on a regular basis (e.g., at least annually) to provide advice on the curriculum of the programme.

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

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

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*

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.

4.1 Student admission, processes and criteria

There appear to be pre-defined and published regulations regarding student admission for the MSc in Applied Health Informatics and Telemedicine programme. Students accepted on to the programme require a Bachelor degree from an accredited university: normally these are in a health sciences or computer science, although students from other disciplines, e.g., Law, Engineering, Management, may be admitted if they are prepared to acquire additional knowledge needed so that they can understand and utilise the relevant basic concepts. Students are also expected to have a good enough use of English in order to be able to access and utilise appropriate reference material.

The requirements for Admission for the Masters Programme in Applied Health Informatics and Telemedicine, are available on the programme webpage on the University website. The documentation states that student admission criteria are based on the OUC Internal Study regulations.

4.2 Student progression

The examination procedures are specified in the Internal Examinations Regulations, which are which are made available to the students and are posted on the University's website.

A document entitled "Grading Criteria of Written Assignments" defines the four criteria for the assessment of the compulsory written and lab assignments. These criteria relate to the structure and presentation of the text, the formulation of ideas and the relevance of the arguments, the use of bibliographic sources and the quality of ideas. The "Grade Analysis Form" is used to apply and justify these criteria and to summarise the comments and observations made in the paper are summarised.

Students are informed about the format and procedures for assessment and the format of examinations at the start of their studies. Assessment is a continuous process within each course and is based on two compulsory assignments (contributing 50% of the final grade) and examinations (contributing 50% of the final grade).

4.3 Student recognition

The admission requirements for the programme appear to be appropriate, given that the programme is aimed at students with a background in Health Sciences or Computer Science, although there is some flexibility to enable students from other disciplines to study the programme, as noted above.

Students are also expected to have sufficient level of English, because most of the bibliographic material that the students are required and expected to access is in English. This is entirely appropriate.

Students are also expected to have work and or clinical experience in an appropriate context, e.g., health services or an appropriate industrial environment. Details of how the level of experience is assessed are not provided, but presumably this takes place by reviewing the application from the prospective student.

4.4 Student certification

The only level of certification for the programme is for the final MSc award, there are no intermediate certifications available, e.g., at Diploma level, or for individual modules. When discussed with staff during the visit, it was explained that this is the policy within the OUC and similar to other Universities within Cyprus and may be the result of a national policy in this regard.

Strengths

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

- The programme has clear entry requirements for educational qualification, English language requirements and work experience.
- The entry requirements are clearly presented on the programme web-site.
- There is some flexibility in enabling students from other disciplines to study on the programme.
- There appears to be clear guidance provided to students on the requirements for assessment and what is required to complete the degree.

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 only level of certification for the programme is for the final MSc award, there are no intermediate certifications available, e.g., at Diploma level, or for individual modules. This is a limitation of the programme, but, according to our discussion with the staff, this limitation is not restricted to this programme, or to the OUC, and may be a result of national policy. We **recommend** that the OUC and the Faculty of Pure and Applied Sciences explore the possibility of awarding intermediate certifications available, e.g., at Diploma level, or for individual modules.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>
4.1	Student admission, processes and criteria	Compliant

4.2	Student progression	Compliant
4.3	Student recognition	Compliant
4.4	Student certification	Partially 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.*

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 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.

5.1 Teaching and Learning resources

The External Evaluation Committee (EEC) met with the academic coordinator, with current tutors and with support staff during the online visit on 10th June 2021. Due to Covid-19, it was not possible to have an onsite evaluation.

The EEC did not have access to, nor did it review the actual teaching material for the Master of Applied Health Informatics and Telemedicine programme.

There was no virtual visit of the premises (i.e., library, virtual computer labs) even though it was scheduled in the program for the evaluation day. It would have been very relevant with such a virtual visit.

However, the EEC received a guided tour of the eClass eLearning Platform used in all OUC educations.

In terms of support staff, the EEC met with staff from student services, library, eLearning platform and laboratories. Except for the laboratory support (which only interacts with the tutors), all other had direct interaction with and provided support to the students. Naturally, the EEC can only evaluate and comment upon the insights that were provided.

5.2 Physical resources

Given that the Master of Applied Health Informatics and Telemedicine programme is delivered entirely online, apart from end-of-course examinations, there were no physical resources to view.

5.3 Human support resources

The tutors and support staff were passionate about and dedicated to providing quality education and support to students.

5.4 Student support

As noted under 5.3, the tutors and support staff were passionate about and dedicated to providing high quality education for the students and to support their learning. This was clearly appreciated by the students who attended the meeting with the EEC.

Strengths

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

- The EEC found that the tutors and support staff were passionate about and dedicated to providing quality education and support to students. There appeared to be very positive relationships between the staff and students.
- The support staff claimed to have adequate resources to give students timely responses and support. This was a unanimous statement from participating support areas with direct student interaction (library, eLearning platform, student support).
- The library staff mentioned that they had recently acquired access to additional online research publication resources to better support the educational activities in this programme.
- The eClass eLearning Platform used for the programme appears to provide effective support for distance education.

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.

- There is currently no permanent faculty member associated with the Master’s programme in Applied Health Informatics and Telemedicine. This appears to be the only educational programme (out of eight programmes) at the Faculty of Pure and Applied Sciences that does not have a permanent faculty member. We **recommend** that the OUC and make it a high priority to hire a permanent faculty member within the MSc in Applied Health Informatics and Telemedicine programme.
- The students, with whom the EEC met online, were very positive about the educational programme including how it has affected their current job situation. The student services (or other support functions) do not seem to follow the students closely after their graduation. When they were asked about this, the EEC did not hear of any procedures in place for this. Former students are potentially a valuable resource to use for various purposes: (1) to argue for the job prospects of the educational programmes, i.e., on the website; (2) to act as role models for potential future as well as already enrolled students; and (3) to give guest lectures in relevant courses. We **recommend** that the Faculty/ programme team set up procedures to maintain contact with former graduates and work with them for the benefit of the educational programme (e.g., marketing and advertising, guest lectures, etc.). This will need to be in compliance with General Data Protection Regulations (GDPR).
- While the recent addition of new research resources relevant to the educational programme (handled by the library) is a good step in the right direction, there still seems to be some relevant scientific resources that the enrolled students do not have free access to. We **recommend** that the Programme team work with the library to continue to expand the set of scientific resources for this educational programme to give the students optimal conditions and resources to enable them to complete the programme successfully.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>
5.1	Teaching and Learning resources	Partially compliant
5.2	Physical resources	Not applicable
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 MSc in Applied Health Informatics and Telemedicine programme at the Open University of Cyprus commenced in the academic year 2015-2016 and, up to 2018-2019, 25 students had successfully completed the programme. The programme is distance learning and students taking the programme study over a 2-year period: it is accredited with 100 ECTS credits.

Students are required to have a first degree in a relevant health or computer science subject, and relevant work experience in the health or related sector, although there is appropriate flexibility in these requirements. The only level of certification for the programme is for the final MSc award, there are no intermediate certifications available, e.g., at Diploma level, or for individual modules.

The programme is taught in Greek, although many of the additional learning materials, e.g., recommended reading, are in English. The programme is delivered via a Moodle-based learning platform and student learning is supported online resources from the main international publishers. The programme covers a range of relevant topics in Health Informatics and Telemedicine and, together, the modules form a coherent and cohesive curriculum. Students are able to develop a sound knowledge about the main aspects of healthcare informatics and telemedicine with a clear application-oriented point of view. The teaching staff encourage participation, discussion, and collaboration among students through forums and by assigning group tasks and weekly exercises.

Staff comprise Adjunct Faculty staff employed part-time on the programme: these include the Academic Coordinator of the MSc Applied Health Informatics and Telemedicine and the Tutors on the programme. The lack of permanent full-time academic staff on the programme is an area for improvement. The teaching staff are all employed in other organisations and are actively engaged in projects relating to the development and implementation of health and medical informatics. The teaching staff and Academic Co-ordinator are very enthusiastic and dedicated to teaching and supporting the programme. Current Tutors are evaluated by the Module Co-ordinator and the Programme Academic Co-ordinator and contracts are renewed (or otherwise) on an annual basis following these evaluations.

Summary of key recommendations (please see sections above for the full list and further details):

We **recommend** that the OUC appoint a permanent full-time member of Faculty staff for the programme to support the co-ordination of, and teaching on, the programme. The OUC should consider making this appointment in a developing area, e.g., health data science or another upcoming field, to strengthen and broaden the programme.

We **recommend** that the OUC provides opportunities for the development of teaching skills, particularly in relation to e-learning for new staff, and ongoing support and development for continuing staff.

We **recommend** that OUC reviews the curriculum considers adding one or more optional modules to the programme.

We **recommend** that the Library provides access to databases with translated or Greek bibliographic materials and continues to expand the set of scientific resources, in consultation with the teaching staff on the programme.

We **recommend** that the OUC and the Faculty of Pure and Applied Sciences explore the possibility of awarding intermediate certifications available, e.g., at Diploma level, or for individual modules.

We **recommend** that the programme develops an Advisory Panel, that meets on a regular basis (e.g., annually) to provide advice on the programme curriculum.



E. Signatures of the EEC

<i>Name</i>	<i>Signature</i>
Professor Peter Bath	
Professor Uffe Kock Wiil	
Professor Carlo Combi	
Panayiota Christodoulou	
Click to enter Name	
Click to enter Name	

Date: 29th June 2021