

Doc. 300.1.2

Date: 21/09/2021

## Higher Education Institution's Response

- **Higher Education Institution:**  
Open University of Cyprus

- **Town:** Nicosia

- **Programme of study**  
**Name (Duration, ECTS, Cycle)**

**In Greek:**

Μεταπτυχιακό Πρόγραμμα Σπουδών (Master of Science) «ΕΦΑΡΜΟΣΜΕΝΗ ΠΛΗΡΟΦΟΡΙΚΗ ΤΗΣ ΥΓΕΙΑΣ ΚΑΙ ΤΗΛΕΪΑΤΡΙΚΗ»

**In English:**

MSc in APPLIED HEALTH INFORMATICS AND  
TELEMEDICINE (100 ECTS)

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



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. Guidelines on content and structure of the report

- *The Higher Education Institution (HEI) based on the External Evaluation Committee's (EEC's) evaluation report (Doc.300.1.1 or 300.1.1/2 or 300.1.1/3 or 300.1.1/4) must justify whether actions have been taken in improving the quality of the programme of study in each assessment area.*
- *In particular, under each assessment area, the HEI must respond on, without changing the format of the report:*
  - *the findings, strengths, areas of improvement and recommendations of the EEC*
  - *the conclusions and final remarks noted by the EEC*
- *The HEI's response must follow below the EEC's comments, which must be copied from the external evaluation report (Doc.300.1.1 or 300.1.1/2 or 300.1.1/3 or 300.1.1/4).*
- *In case of annexes, those should be attached and sent on a separate document.*

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

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

### Findings

#### 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

- 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

- 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.

## OUC RESPONSE

In response to the **1st recommendation** to include optional courses, the EEC and the CyQAA should note that the decision to add Elective Modules to this Programme is strongly related to the number of students. Given that we must have at least 5 students enrolled in a course to be able to offer it, the current enrollments do not allow for elective courses. This is a suggestion that we do consider, but for the future.

As per the **2nd comment** that “some modules appear to be too ‘packed’”, we consider that, for the time being, modules could stay as designed and offered. The suggested two modules, i.e. Patient data management & decision support’ and ‘Biomedical databases & Biomedical research methodology’ could be ‘unpacked’ in the future with the inclusion of elective modules that will give students alternative learning pathways as well. Thus, both courses will be considered for some “cleaning” and refinement in their content in the future.

In response to the **3rd recommendation** to move the more technical modules to the first semester, the EEC and the CyQAA should note that the 1st semester contains modules that, although not mandatory for other modules, are fundamental in concepts and knowledge for the Programme. Although there is no strong argument in this suggestion, we believe that Technical Modules should remain in the 2nd semester following Theoretical modules. In this way, the students could focus on obtaining in-depth knowledge on the theoretical part and be more prepared for the Technical ones.

Concerning the comment made by the Committee regarding Key Performance Indicators (**4th recommendation**), some indicators such as average duration of studies, mean exam scores, mean scores from questionnaires, etc. which concern the effective operation and management of the MSc Programme do exist, are monitored by the Programme’s Academic Coordinator, and are considered in the context of the internal quality assurance mechanisms of the Open University of Cyprus.

As far as the **5th recommendation** is concerned, the diversity of background of students applying and/or enrolling in the MSc Programme is recorded in the Student Information System (SIS) used by the University. More specifically, when people apply for enrolment, they give information on past educational experience, employment status, etc. The University's Alumni Office, which is currently understaffed, is currently considering specific surveys to monitor our graduates' employment status and utility of their degree title awarded by the OUC.

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

### **Findings**

#### **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

- 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

- 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.



## OUC RESPONSE

In response to the **1st recommendation** regarding optional courses, the EEC and the CyQAA could note our response in the previous section. The decision to add Elective Modules to this Programme is strongly related to the number of students. The suggestion to include elective modules that will give students alternative learning pathways will be considered in the future.

We do share the EEC's **2nd comment** that all Programmes of Study should have an adequate number of permanent academic staff, and not rely so heavily on adjunct faculty members, i.e. Tutors. For the time being, however, the Open University of Cyprus does not have a Faculty position for Applied Health Informatics and it will be decided by the Council and the Senate of the University whether a faculty position will be allocated to this Programme given the scarcity of academic positions. As the OUC is a public University, all faculty positions (Lecturers, Assistant Professors, Associate Professors and Professors) need to be approved by the relevant Ministries of Education and Finance. This is the reason why the University is highly depending on Adjunct Tutors for teaching in the majority of student cohorts. In any case, since OUC is a member of the European Association of Distance Teaching Universities (EADTU), as far as we are aware of, this is actually the case in other Open Universities as well. For these reasons, the Programme and the University overall, are meticulous in hiring Adjunct Faculty members based on a fair point system that balances experience and motivation. Adjunct Faculty members of the highest caliber are hired every year, and depending on their evaluation, their contracts are renewed. In this Programme of Study our Tutors teach also in high quality Universities and participate in EU projects. Some of them are decision makers in National committees.

In response to the **3rd recommendation** for the bibliographical references of the Programme, which is offered in Greek, yet most bibliography is in English, please note that the Programme already provides bibliography references from the Greek literature. Given the nature and content of its Modules, however, Greek bibliography is rather limited and in many cases not of high quality.

### 3. Teaching staff (ESG 1.5)

#### Findings

##### 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 Coordinator.

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

- 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

- 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 fulltime 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.

## OUC RESPONSE

We do share the EEC's **opinion** that all Programmes of Study should have an adequate number of permanent academic staff, and not rely so heavily on adjunct faculty members, i.e. Tutors. However, this is the case for the OUC as a public University. All faculty positions (Lecturers, Assistant Professors, Associate Professors and Professors) need to be approved by the competent Ministries of Education and Finance. Thus, the University is highly depending on Adjunct Tutors for teaching in the majority of student cohorts, and has already requested officially additional faculty positions. The needs of the University for new academic positions are aligned to its strategic plans and the introduction of new programmes of study. The strategy is as follows: If the University does not employ faculty members in a particular scientific field, and it aspires to offer a new programme of study in that direction, it will ask the Council of Ministers for a new tenured academic position.

Incentives provided to academics include the following: competitive remuneration, health insurance, start-up funds for research, high-quality working environment, etc. The selection process for permanent Faculty members in the ranks of Lecturer, Assistant Professor, Associate Professor and Professor follow the Regulations [“Οι Περί Ανοικτού Πανεπιστημίου Κύπρου \(Εκλογή, Αξιολόγηση και Ανέλιξη Διδακτικού Ερευνητικού Προσωπικού\) Κανονισμοί του 2010”](#) are approved by the Parliament. Strong publication record and experience in teaching are some of the appointment criteria for Associate Professors and Professors.

Concerning the **5th bullet point** regarding the supervision of PhD students, as per the University's Internal Regulations for Doctoral Studies, by decision of the Faculty, the supervision of the doctoral candidates is assigned to a tenured faculty member of the Open University of Cyprus, referred to as “the Supervisor”. The Supervisor has the main academic responsibility for the academic

supervision of each doctoral candidate. A tenured faculty member of the Open University of Cyprus of any rank may be appointed as Supervisor, on the condition that the Three-Member Advisory Committee comprise of at least one tenured faculty member at the rank of Associate Professor or Professor.

Regarding the **6th area for improvement** noted by the EEC, which concerns continuous professional development of academic staff, please note that OUC is offering various training opportunities, although this can be further enhanced once dedicated funds can be secured by the State. For instance, permanent faculty members can use internal funds for research activities and participation in conferences, workshops, training, etc. Moreover, they can apply on an annual basis for internally-funded research projects. Training programmes on eLearning tools, instructional design, etc. are offered to all adjunct and permanent teaching staff by the University's competent Units, i.e. Information and Communication Technologies (ICT) Unit and the Laboratory of Educational Methodology and Educational Material Lab (LEMM). All adjunct and permanent staff can also apply in the annual calls of the University's Mobility Office to secure funding for teaching or training purposes in the context of the Erasmus+ Mobility Programme. Permanent faculty members also have sabbatical leaves, which provide faculty members with the opportunity for further professional growth and development.

The following two training courses already offered to faculty members and adjunct tutors will be mandatory:

#### 1. Use of the University's eLearning Platform

This course is offered asynchronously throughout the academic year and it is provided and supported by the University's ICT Unit. Its content includes: asynchronous platform, synchronous platform, video platform, plagiarism detection tools, and collaboration tools for teachers-staff interaction.

#### 2. Distance teaching, learning and assessment

This course is provided by the University's Lab for Educational Material and Methodology (LEMM) and has a 12-weeks duration. Its objective is to educate OUC's teaching staff on the latest methods and practices regarding online teaching, learning and assessment. Moreover, it allows teaching staff to become familiarized with the synchronous and asynchronous collaboration and communication tools provided in the eLearning Platform and procedures to develop interactive activities and suitable multi-format educational. Its content includes: theoretical models of adult learning and methods to design and measure learning outcomes, distance learning interactive assignments, how to create successful video lectures, methods and techniques to engage students in the learning process, and strategies to design suitable assessment methods and provide constructive feedback to students.

Concerning the **last recommendation** to set up an Advisory Panel for the MSc Programme, it should be noted that there is actually in place an Academic Council which comprises of Dr. Nicolas Stylianides (Academic Coordinator), Professor Stavros Stavrou (Dean of the Faculty of Pure and

Applied Sciences), and Dr. Theodoros Kyprianou (Consultant in Respiratory Medicine at King's College Hospital NHS Foundation Trust). The Academic Council is the collective academic administrative body of interuniversity study programs. It is responsible for the academic organization of the Program and all matters related to the Program, which do not fall explicitly under the jurisdiction of other University bodies. In any case, in the context of its Strategic Plan 2021-2024, the OUC is currently considering ways to engage more actively with the business world, and thus might take additional actions towards this Advisory Panel in the near future.

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

##### **Findings**

##### **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

- 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

- 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.

### OUC RESPONSE

All Modules (Thematic Units) of the MSc Programme are offered as stand-alone modules as well, thus facilitating enrollment of students interested in one or two courses in the context of lifelong learning and continuous professional development. For the time being, the University's Strategic Plan does not include offering of Diplomas (1-year programmes).

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

### Findings

#### 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

- 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

- 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 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.

## OUC RESPONSE

The **1st recommendation** concerning permanent faculty members has been addressed previously.

With regards to the **2nd comment** made by the Committee to have closer links with our alumni community, we fully agree with it and it is one of the University's strategic priorities for the near future. The University's Alumni Office [<https://www.ouc.ac.cy/index.php/el/the-university-4/alumni>], which is currently understaffed, is considering surveys to monitor our graduates' employment status and utility of their degree title awarded by the OUC. Graduates who have already signed for the OUC Alumni Card and are included in the University's mailing lists have signed an agreement that these University efforts comply with the General Data Protection Regulations (GDPR). The idea to use the experiences of alumni in a more organized manner, is considered by the University's Communications Unit, and every year during the admissions period, all OUC programmes use the experiences of a number of alumni to promote the Programmes.

With regards to the **3rd comment** made by the Committee, we agree with it and we have close collaboration with the OUC Library to continue expanding our offered set of scientific resources. Furthermore, we will initiate a procedure to include a specific section in the Student Questionnaires to enable Students propose specific scientific resources they believe are important. The proposed



list will then be assessed by the Academic Council and the approved list, based on Programme's Curriculum and available funding, will be send to the Library.

## **6. Additional for doctoral programmes**

*(ALL ESG)*

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## **7. Eligibility (Joint programme)**

*(ALL ESG)*

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## B. Conclusions and final remarks

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 Coordinator 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.

## OUC RESPONSE

First and foremost, we would like to express our gratitude to the External Evaluation Committee (EEC), both for providing their constructive comments during our online meeting, and for the detailed written feedback and recommendations in this evaluation report. Our response is structured as follows: under the separate headings identified in the external evaluation report, the EEC's comments (findings, strengths, areas of improvement and recommendations) are reported; these are followed by our responses to all points identified.

We do appreciate the fact that the EEC has identified the strengths of the MSc Programme, and that the Committee has highlighted that “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”, and that “the overall Programme is developed, managed and monitored in an appropriate way”.

Concerning the Committee's summarized key recommendations, please refer to our responses above in the previous sections, and note the following:

- We do recognize the need to appoint a permanent academic staff member to this MSc Programme, however, such a decision rests upon approvals of faculty positions by the relevant Ministries of Education and Finance, and prioritization of such positions by the University's Council and Senate.
- Academic staff's professional development is safeguarded by training courses offered by the University's ICT Unit and the Educational Material and Methodology Lab (LEMM). Faculty members also receive internal funding for research activities (including conference participation), while both faculty and adjunct faculty have opportunities to develop their competences through their participation in the Erasmus+ Mobility Programme (exchanges for Staff Teaching Assignments and Staff Training mobility actions).

- In response to the recommendation to include optional courses, the EEC and the CyQAA should note that the decision to add Elective Modules to this Programme is strongly related to the number of students. Given that we must have at least five (5) students enrolled in a course to be able to offer it, the current enrollments do not allow for elective courses. This is a suggestion that the Academic Council of the Programme will certainly consider in the future.
- Regarding the Programme's bibliography, please note that Greek bibliographic materials are currently available, and in close cooperation with the University's Library, mandatory and optional bibliography is revised at the end of each academic year. Online scientific resources are also available to students through MyAthens (e.g. Cochrane databases, The official journal of The Royal Pharmaceutical Society, [AHFS Consumer Medication Information](#), [MEDLINE](#), [MEDLINE Complete](#), [CINAHL Plus with Full Text](#)). All Master's thesis are also available to students and staff through 'Kypseli', the University's Institutional Repository. Furthermore, as the Programme's students are mostly people employed in the healthcare sector, the Programme will initiate a procedure to gather students' feedback on any scientific resources they believe are important. The proposed list will then be assessed by the Academic Council and the approved list, based on Programme's Curriculum and available funding, will be send to the Library.
- All Modules (Thematic Units) of the MSc Programme are offered as stand-alone modules as well, thus facilitating enrollment of students interested in one or two courses in the context of lifelong learning and continuous professional development. For the time being, the University's Strategic Plan does not include offering of Diplomas (1-year programmes).
- Concerning the last recommendation to set up an Advisory Panel for the MSc Programme, it should be noted that there is actually an Academic Council in place, which comprises of Dr. Nicolas Stylianides (Academic Coordinator), Professor Stavros Stavrou (Dean of the Faculty of Pure and Applied Sciences), and Dr. Theodoros Kyprianou (Consultant in Respiratory Medicine at King's College Hospital NHS Foundation Trust). The Academic Council is the collective academic administrative body of interuniversity study programs. It is responsible for the academic organization of the Programme and all matters related to the Programme, which do not fall explicitly under the jurisdiction of other University bodies. In any case, in the context of its Strategic Plan 2021-2024, the OUC is currently considering ways to engage more actively with the business world, and thus might take additional actions towards this Advisory Panel in the near future.

In closing, the Open University of Cyprus and the Academic Team of the MSc in "Applied Health Informatics and Telemedicine" would like to thank the external evaluation committee (EEC) for the very positive reception of our postgraduate degree. The remarks, suggestions and recommendations of the EEC were very constructive and thoughtful, significantly supporting our efforts to restructure the Programme in the best possible way. We are looking forward to a positive



decision by the CYQAA regarding the accreditation of the programme that is being offered since the 2015-2016 academic year, with regular revisions, as per the recommendations of the EEC. Furthermore, the Academic Council will review the curriculum and, if needed, it will create a set of contemporary optional modules based on Greece and Cyprus educational needs. The Academy Council will also initiate a procedure to include Student's input regarding Greek research databases and education materials.



### C. Higher Education Institution academic representatives

<i>Name</i>	<i>Position</i>	<i>Signature</i>
<b>Dr. Nicholas Stylianides</b>	Academic Coordinator of the MSc Programme in Applied Health Informatics and Telemedicine	
<b>Prof. Stavros Stavros</b>	Dean of the Faculty of Pure and Applied Sciences	
<b>Professor Yannis Manolopoulos</b>	Chair of the Internal Quality Assurance Committee	
<b>Erato Ioanna Sarri</b>	Coordinating Officer of the Quality Assurance Office	

Date: 21/09/2021

*[Handwritten signature]*