Doc. 300.1.1

Date: 13 July 2023

External Evaluation Report

(Conventional-face-to-face programme of study)

- **Higher Education Institution: University of Nicosia (UNIC)**
- **Town: Nicosia**
- **School/Faculty (if applicable): School of Life and Health Sciences**
- **Department/ Sector: Department of Life Sciences**
- **Programme of study- Name (Duration, ECTS, Cycle)**

  In Greek:

  n.a.

  In English: M.Sc. Biomedical Sciences

  (1½ year, 90 ECTS, 2nd cycle)
- **Language(s) of instruction: English**
- **Programme's status:** Currently Operating
- **Concentrations (if any):**

  In Greek: n.a.
  In English: a) Immunology; b) Hematology

The present document has been prepared within the framework of the authority and competencies of the Cyprus Agency of Quality Assurance and Accreditation in Higher Education, according to the provisions of the "Quality Assurance and Accreditation of Higher Education and the Establishment and Operation of an Agency on Related Matters Laws" of 2015 to 2021 [L.136(I)/2015 – L.132(I)/2021].

A. Introduction

This part includes basic information regarding the onsite visit.

A site visit took place on 11 July 2023 at the University of Nicosia campus. A full-day schedule (09.00-17.15) had been prepared to allow ample interaction with the leadership, teachers, students and graduates as well as administrative staff involved in the M.Sc. in biomedical sciences 1½-year programme. This programme is organized by the Department of Life Sciences under the School of Life and Health Sciences. The Department of Life Sciences has 45 faculty members of whom five are Professors, six Assoc. Professors, five Assisting Professors, three Lecturers, one Visiting Professor and the remaining 25 are Adjunct faculty members. The Department is responsible for three B.Sc., four M.Sc. and two Ph.D. programmes, all conventional studies (as opposed to eLearning programmes).

All meetings took place in the main building of the University of Nicosia at the School of Life and Health Sciences. Prior to the visit, the external evaluation committee had received the Application for Evaluation (not dated) from the agency, as well as some other written background material. As further underlying documentation for the evaluation, the committee received the files corresponding to the presentations given during the meeting and also requested samples of final exams, assignments and theses.

After introductions of the external evaluation committee members, the first meeting of the day involved senior officials from the University, Quality Assurance Committee, School and Department leaderships. During this meeting, general overviews of these three levels was given. The coordinator of the programme under scrutiny was also present since he is also the Associate Dean of the School.

The second meeting of the day concerned the structure and status of the School of Life and Health Sciences and more specifically the Department of Life Sciences. A SWOT analysis regarding the School's/Department's mission and strategy planning was included in the agenda but was not presented. Following requests from the External Evaluation Committee, this was instead presented later during the day.

During the third meeting of the day, the committee was also given an overview presentation of the M.Sc. in Biomedical Sciences programme by the coordinator of the programme. Lively discussions regarding the programme and its content followed. Slides from all presentations were digitally shared with the committee.

The fourth meeting of the day featured five of the teachers involved in the M.Sc. programme. Detailed course parameters like learning outcomes and pedagogic models used etc were scrutinized and discussed. Since the programme coordinator was not present the committee could talk about these things with teaching staff only. The teachers showed a high degree of enthusiasm for the programme and its students, participated very actively in the conversation with the goal to improve the programme further.

Following a lunch break, the committee was given the opportunity to meet digitally with a group of students and graduates from the M.Sc. programme in question. Seven student participated, all via via Zoom. After a round of introductions, the students answered the questions from the committee. It was also very interesting to hear what their backgrounds and future plans were, based on the M.Sc. that they had just finished or are in the middle of. They shared their experiences from the M.Sc. programme and the reasons why they chose to enroll.

The committee was also given the possibility to follow two examples of live course pedagogic activities. This was done via digital links.

Thereafter, the committee withdrew for a short internal discussion to summarize and make a list of clarifications needed from the programme coordinator and leadership group, who would join the committee for the last meeting of the day.

The second last meeting of the day involved members of the administrative staff who support the teachers and the students in the M.Sc. programme. The committee was given short summaries of the work done by the Director of Academic Affairs, the Director of the Library and others. Dedicated reports on the importance of student support and their learning process in various ways were given, especially the work to make studies available to everybody independent of function variations and impairments. School policy on e-Books and conventional literature was also discussed.

Thereafter, the committee was offered a tour around the teaching premises including student laboratories, library, lecture halls, study rooms and also to some of the research facilities). The committee was duly impressed with most of the premises which appeared to be well suited for the purpose of the M.Sc. programme, although it was pointed out that the M.Sc. students do not spend very much practical time in the student laboratories.

The last meeting of the day was again with the Dean of the School, the Associate Dean (also course coordinator) and the Head of Department. Members from the Vice Rector's office also attended. Some apparent discrepancies or misunderstandings were sorted out and the committee thanked the university, school, department and course leaderships for their time and for a very interesting and informative evaluation visit.

Finally, the committee would like to make some notes regarding formalities of and apparent inconsistencies in the application. We noticed that the Application for Evaluation provided by the University is still not dated even if we were informed that it had been updated. Due to the delay between submitting the application and the actual site visit, many of the data points in the applications are not up-to-date, e.g. several of the teaching staff CVs appear to have no publications during later years (e.g. latest publication in 2014, 2016, 2019 or 2020 for four different teachers). The committee asked the teachers in one of the meetings and most had publications later than the indicated years. Thus, it has constituted a challenge for the committee to clarify if research activity has stopped or if the CVs have not been updated.

Similarly, we think the form used is suboptimal when it comes to publications since it asks the teachers to list "Other authors" in column 4 of the publication section of the CV. This causes two kinds of problems: a) it becomes impossible (without going to the databases) to judge what position (first, last etc) this scientist had on this publication; and b) it causes inconsistency since many teachers still included their names on some publications but not on others.

In brief, it would have been more helpful for the committee to obtain upfront an up-to-date Application for Evaluation document with the above improvements and that also included (i) up-to-date statistics on student numbers, including a specification of real drop-out numbers vs. numbers of transfer students, (ii) student feedback frequencies for different courses in the Programme and over timet, and (iii) a recent SWOT analysis of the Department and the programme to be evaluated. Having said that, we still found the majority of the information in the Application for Evaluation very useful and clearly laid out by those responsible for submitting it.

B. External Evaluation Committee (EEC)

Name	*Position*	*University*
Prof. Dr. Martin L Olsson	Chair	Lund University
Prof. Dr. Helen Papadaki	Member	University of Crete
Prof. Dr. Leendert Hamoen	Member	University of Amsterdam
Mr. Stephanos Hilides	Student representative	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 M.Sc. Biomedical Sciences programme is a full-time or part-time 1.5 years / 90 ECTS / English language programme which is offered by the Department of Life Sciences of the School of Life and Health Sciences of the University of Nicosia. The programme started with one direction i.e. Immunology but it is now interested to offer two directions i.e. Immunology and Hematology. It corresponds to a level 7 Master's program according to the European Qualifications Framework (EQF).

The rationale for generating this program came from the fact that the training of Clinical Laboratory Specialists must align with the EU regulations and guidelines based on the European Federation of Clinical Chemistry & Laboratory Medicine (EFLM). According to the EFLM, Clinical Laboratory Specialists to be included in a professional register in their home country in EU including Cyprus, require as minimum standards at least at least 9 years of undergraduate and postgraduate study and for the licensing for directing a Clinical Laboratory a minimum of 4 years of post-graduate study to a level at least equivalent to that of the EFLM Syllabus in Immunology, Hematology, Miocrobiology and Clinical Biochemistry. Completion of this program is considered as part of the 9-year minimum undergraduate and postgraduate study required for registration as a European Clinical Specialist. Therefore, the University has set up, as a start, an M.Sc. course in Immunology and Hematology, with the intention to expand the course in the future by including Microbiology and Clinical Biochemistry.

It is clear that the rationale of the program is to offer the students the education, training and qualification in compliance with the EFLM syllabus, the Regulations of UK Quality Assurance Agency for Higher Education and EQF requirements. The program is also in line with the policies for quality assurance according to the Cyprus Agency of Quality Assurance and Accreditation in Higher Education (CYQAA) that ensures quality, academic integrity and freedom and support of teaching and administrative staff, students and external stakeholders. The policy is not included in the University's website but it is described in the documents the committee received before and during this evaluation. It is not clear who are the members of the Internal Quality Committee but according to what is written in the document describing the Internal Programme Evaluation Process (IPEP) the University Mangers, the Faculty Members, the Administrative Staff, the Students and Alumni as well as invited external experts have been involved. Although the IPEP document is complete the committee has observed that some cv of the staff are not updated whereas some numerical data were provided during the evaluation process.

1.2 Design, approval, on-going monitoring and review

It is clear as was also emphasized during the programme's coordinator presentation that the main aim of the current M.Sc. program is to qualify Clinical Laboratory Specialists in order to offer high-quality public health services. The specific aims and the learning objectives of the programme are largely based on the EFLM recommendations.

In general, a number of required courses of 30 ECTS total as a common trunk for both directions i.e. Immunology and Hematology, a number of concentration courses of 22.5 ECTS for each direction, a Clinical Practicum of 7.5 ECTS and a Thesis I/II of 30 ECTS are included in the programme. The rationale of starting with a common trunk for Immunology and Hematology is reasonable given that shared content of these both disciplines. The Immunology courses have been offered since 2017, and they are more mature and clearly laid out. The Haematology direction is

new, and some of the respective objectives and learning outcomes are unrealistic, insufficient or not up-to-date. Some characteristics examples are the following but many more can be identified in the courses' description: *"Discuss the clinical importance and categorize **all blood groups** with regard to genetics and biochemical characteristics" (IMMU-543 Immunohematology), "Describe the symptoms, pathogenesis, and laboratory investigation of **anemia** and **hemato-oncological** abnormalities"* (HEMA-542 Blood Disorders), "training on *Cytochemical staining including detection of **MPO, FAG, PAS, Sudan black, acid phosphatase, esterase**, iron*" (HEMA-544 Hemostasis and HEMA-541 Introduction to Hematology). A required common course on Immunotherapy is not included.

A Clinical Practicum (Immunology/Hematology) of 7.5 ECTS (4 periods/week, 48 total periods during the 3rd semester) is included. According to the syllabus, this internship can be performed in clinical and/or research laboratories that do diagnostic testing based on immunological techniques/methods. According to the students' interviews many opportunities exist given the collaborations of the University of Nicosia with private laboratories. Given, however, that the programme recruits students who are interested to continue with research, the committee recommends the Clinical Practicum to be performed in Research Laboratories. Some further recommendations for the improvement of the content of the programme are given below.

The Thesis consists of part I (2nd semester, 7.5 ECTS) that aims educate students how formulate research hypotheses and make literature search and part II (3rd semester, 22.5 ECTS) which may be lab- or literature-based. The committee recommends that a 3-month full time experimental, laboratory-based research project should be implemented for those students who enter the program without previous laboratory experience.

Teaching is based on the permanent staff but also it benefits from external experts that largely contribute to the teaching courses as well as supervisors or co-supervisors in the Thesis. The programme committee should examine whether the ratio between the permanent staff and part-time staff is in accordance with the national regulations.

It is clear that the general structure of the programme has been built and being developed to mainly cover the needs of the professional from the field of Life and Health Sciences to become registered Specialist in Clinical Chemistry and Laboratory Medicine according to the European regulations. To ensure quality, a continuous evaluation process is needed with students being an active component of this process. According to the staff and the student interviews, a percentage of 30-40% of students are actively implicated in this procedure. This percentage can be increased if the academic staff takes into account the students' expectations, needs and satisfaction in relation to the programme, for the improvement of the quality of their studies. The students seem to have an involvement in the development of the content of their studies by selecting places and topics of their Clinical Practicum and Thesis. Apart from the IPEP document, the committee does not have an information regarding previous external evaluation reports. It is also unclear if the program launched in 2013 (according to the coordinator's presentation) or in 2017 (according to the provided numerical data on students registration).

1.3 Public information

Public information related to the programme is available in the University's website. Given that the programme has not been accredited for the Hematology content, the information given is correctly based on the Immunology components of the courses. An overview is given regarding the structure, learning outcomes, qualifications awarded, teaching, learning and career opportunities, but a more detailed information on the selection criteria should be included in the webpage.

The programme, in collaboration with the Association of Clinical Laboratory Directors, Biomedical and Clinical Laboratory Scientists organizes annually a conference/workshop on novel topics within the field, a fact that gives visibility of the Program to the public.

1.4 Information management

In addition to the content of the IPEP document, data regarding the profile and number of students, drop-out rates, learning resources and career paths were provided by the Coordinator of the programme and the interviewed students, teaching and administration staff. It seems that the majority of students are graduates from the field Life and Health Sciences who wanted to become registered Clinical Chemists or other Clinical Laboratory Specialists. A smaller proportion of students intend to continue their studies in other specializations in the field of Biomedical Sciences or to follow further post-graduate studies (Ph.D., or other M.Sc.). According to the provided data since 2017, there is a slightly increasing number of registered students but there was a decrease in the new admission in 2022 (12) compared to 2021 (30). Although the drop-out rate is 16% it is mostly related to 2 drop-outs once (2017); therefore, the completion rate is high. According to the Coordinator's presentation, the graduates of the program work as Clinical Laboratory Specialists, direct Clinical Laboratories, continue their studies in other specializations in the field of Biomedical Sciences or follow further post-graduate studies. An Alumni society could potentially give more precise information in the long-term.

Strengths

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

The programme covers the needs for postgraduate training of scientists from deferent disciplines of the field of Life and Health Sciences to become registered Specialist in Clinical Chemistry and Laboratory Medicine according to the European regulations.

The rationale to combine Immunology and Hematology is reasonable since both disciplines share a common trunk that can form the basis of the programme.

The programme gives opportunities for laboratory-based Clinical Practicum and Thesis and the students have the opportunity to make their choice among a number of collaborating laboratories.

The drop-out rate is low and the completion rate is relatively high meaning that the programme fulfils the expectations of the students.

The organization of an annual conference in collaboration with the Association of Clinical Laboratory Directors, Biomedical and Clinical Laboratory Scientists increases the visibility of the Program to the public and gives further training and employment opportunities to the students.

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 course objectives and learning outcomes described in the syllabus are often unrealistic in scope, either insufficient or much too detailed. An update of the learning outcomes is highly recommended.

The implementation of a common required course on Immunotherapy is highly recommended. The reason for this suggestion is that many modern concepts that are now moving quickly from the lab bench to the clinic appear to be missing in the syllabus. Also, hematological disorders are often among the first ones to be targeted by these novel treatments. This would be an excellent way to let the Immunology students interact with the Hematology students so that both groups can better understand how one field is dependent on the other.

There are two group of students who are interested to enter the program, i.e. those who are mostly interested to obtain the European qualifications and those who want to continue with post-graduate studies. The programme could implement a clinical laboratory diagnostic track and a research-oriented track as follows:

- Clinical laboratory diagnostic track: the students who have the admission criterion of 1 year lab experience could select a clinical practicum in either a research lab or a clinical lab that performs research and continue with a Thesis II of 3 months in a research project which can be either research laboratory based or literature-based.

- Research track: the students could perform clinical practicum in a research lab and continue with a Thesis II of 3 months with a full time experimental laboratory-based research project.

It should be clear that students cannot be trained for their Clinical Practicum in their current or previous work environment.

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

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

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

Standards

- *The process of teaching and learning supports students' individual and social development.*
- *The process of teaching and learning is flexible, considers different modes of 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 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

- *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 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.*

You may also consider the following questions:

- *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 European Federation of Clinical Chemistry & Laboratory Medicine (EFLM) has established a Common Training Framework for the training of Clinical Laboratory Specialists in Europe. Registration as a ‘‘European Specialist in Clinical Chemistry and Laboratory Medicine’’ gives the right to be called a Specialist in the language of the member state, which is "Clinical Chemistry" for Cyprus. For the licensing for directing a clinical laboratory, a minimum of 4 years of postgraduate study at the M.Sc. level in the disciplines Immunology, Hematology, Microbiology and Clinical Biochemistry is therefore required. The University of Nicosia recognized the need for such a Master programme and has developed a M.Sc. in Biomedical Sciences centered around Immunology and Hematology. This one and a half year programme appears to serve its initial goal as most students that attend and have attended this course have already clinical test laboratory experience and some run their own clinical laboratories. Thus, the programme supports the students’ individual and social development. This is facilitated by the fact that the programme can be followed parttime and since the practical lab-based training courses can be limited to a Placement (Clinical Practicum course) of around 48 h in total. In that sense the programme fulfills the criteria of a flexible teaching and learning process. However, here also lies a problem and that is the lack of actual research training. The reason why this is a problem is that not all students join the programme because of their wish to become a certified ‘‘European Specialist in Clinical Chemistry and Laboratory Medicine’’, some are interested in this M.Sc. programme because they would like to pursue a research career. The committee refers to these different needs throughout this evaluation and provides concrete recommendations to mitigate this challenge.

The course structure of the programme has been well documented in the Application for Evaluation document. From its inception the programme was primarily focused on Immunology but in the new programme proposal a Hematology track has been included. The committee has some reservations concerning the weight of the hematology part and provides suggestions for improvement elsewhere in this evaluation.

The courses cover the theory of many disciplines in-depth and the students are generally impressed by what they learn and consider this M.Sc. programme as more demanding compared to other M.Sc. programmes. There was some discussion among students how relevant the Placement was, e.g. since some had already worked in clinical laboratories for years. However, the committee does not agree with this attitude, since it is important to see how things are run at other places, and learn from this. The committee was happy to learn that the official rule is that a Placement is performed not in the same lab where the student has been working before. However, from the interview with the students it appeared that actually one of the students had done just that, and another student was of the assumption that she could get around this rule. Apparently, this rule needs to be made clearer and properly implemented.

The teaching staff employs modern pedagogic methods including blended learning and case-based learning, and on occasion they experiment with other forms such as flipped classroom. The University provides the training and needs for these modern pedagogic methods. It was encouraging to learn that the effectivity of the methods are stringently evaluated, such that the results might even be publishable.

An interesting aspect of teaching senior students, many of them with several years of work experience, is that the relationship between teacher and student becomes more even level, which facilitates serious and relevant feedback

and exchange in a peer-to-peer manner. This was acknowledged during the interviews by both the teaching staff as well as the students. In fact, students could bring in cases that subsequently were discussed in the relevant courses, a clear and encouraging example of student-centered learning.

Students are encouraged to evaluate the courses, but the turnout seems to be low. The Programme leadership was unable to provide actual numbers, and the committee considers this a weakness, as it hampers evaluation of courses and thus improvements.

The University is very well aware of the wellbeing of students, their needs and rights, and appropriate procedures for dealing with students' complaints regarding the process of teaching and learning seem present.

2.2 Practical training

The practical training in this M.Sc. course is rather limited, and can be reduced to only the Placement (Clinical Practicum) that comprises around 48 h in total. If a student wishes that, it is possible to execute a lab-based research project during the Thesis II slot. However, during the interview it became clear that some students would have liked more experimental training. The committee is of the opinion that training in the latest developments in analytical methods relevant for the Immunology and Hematology concentrations, e.g. flow cytometry/FACS, would be a good addition to the programme in order to train the next generation of clinical lab leaders (and researchers).

2.3 Student assessment

During the evaluation, the committee did not come across any issues regarding unfair or problematic assessments of students. The drop-out numbers were low, but there was some confusion during the interviews because some staff mentioned 1 student whereas others suggested 15%. For the evaluation of such programmes it is important that these numbers are present upfront and specified by the reason of drop out, to enable a relevant assessment.

Strengths

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

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

The Thesis II can be either a lab-based research project or literature review, this allows for more flexibility, which is important for older students with full time jobs or other responsibilities.

This one and half year programme fits the 9 year of training experience outlined in the Common Training Framework for the training of Clinical Laboratory Specialists in Europe.

There is a good communication and relationship between teaching staff and students

The students can provided and discuss actual cases in courses.

The teaching staff is enthusiastic about the students.

The students feel that they learn a lot in this M.Sc.

Student feedback mechanisms are in place.

2.2 Practical training

There are sufficient Placements available.

The lab space and equipment are in place.

The teaching staff is still doing research themselves and are therefore up-to-date when it comes to practical training.

2.3 Student assessment

There were no serious complains from students or issues raised during the interview with other members of the course and the university, indicating that adequate measures are in place to deal with this.

Areas of improvement and recommendations

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

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

The course is catered to students who would like to become a certified ‘‘European Specialist in Clinical Chemistry and Laboratory Medicine’’, but not sufficiently towards students who would like to go into research. The committee recommends to focus the M.Sc. programme either on students with clinical diagnostic laboratory training that would like to become certified "Clinical Chemists" or develop a two track system; a clinical diagnostic laboratory track (concentration) and a research oriented training track (concentration), with some overlap between the tracks when it comes to core theoretical courses. Of note, in such research oriented track the Thesis II project should entail at least 3 months full-time lab-based research work.

The committee has some reservations concerning the weight of the hematology part and provides suggestions for improvement elsewhere in this evaluation.

Make it very clear to the students that the placements (Clinical Practicum) can not be performed in the laboratory where they have been working before. Not only is it important to learn from other work environments, such situation can also compromise an effective supervisor-student relationship. It is also important that students do not enter the program with the ambition to skip as many parts as possible just because they have experience since before from a certain clinical laboratory. Such voices were raised during the interviews so this also needs to be made clear.

Try to encourage the students to provide course feedback and register this for future evaluations. Maybe the evaluation process can be made easier online and/or by showing the students a short online tutorial.

Provide drop-out numbers or % in the Application for evaluation document, including some specification as to why the student dropped out.

2.2 Practical training

As mentioned above, make it very clear that placements (Clinical Practicum) cannot be performed in the laboratory where they have been working before.

If the University also wants to cater to students that would like to go into research, and e.g. continue with a PhD, proper practical training, including a laboratory-based research project of minimally 3 months full time, should be in place.

2.3 Student assessment

The committee has no specific recommendation concerning student assessment.

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

Sub-area		*Non-compliant/ Partially Compliant/Compliant*
2.1	Process of teaching and learning and student-centred teaching methodology	Compliant
2.2	Practical training	Partially compliant
2.3	Student assessment	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.*
- *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:

- *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.

During the site visit, the evaluation committee was informed that a newly formed Teaching and Assessment committee will start its work in the autumn of 2023, having three main pillars; teaching, assessment and professional development. By announcing its formation in advance, the School demonstrates its commitment to fostering a supportive and effective educational environment that both aims to develop its students and teaching staff capacity. The committee applauds this initiative but also recommends collaboration with the School of Medicine in building up this committee.

3.1 Teaching staff recruitment and development

The current teaching team is enthusiastic, engaged and appropriately merited for the job to run the M.Sc. programme, at least in its current form. The expansion towards hematology highlights a need for teachers with experience and training in various aspects of clinical hematology, experimental hematology (partially covered), transfusion medicine/blood banking and transplantation immunology. This kind of expertise is difficult to find and is unlikely to be easily employed at the School of Life and Health Sciences.

The procedures for announcing new positions and recruiting new members of staff appear clear and transparent. This applies also when part-time staff is recruited externally to support the program with teachers on temporary contracts.

In general, staff qualifications are adequate to achieve the objectives and learning outcomes of the M.Sc. programme in its current form, and to ensure that quality and sustainability of the teaching and learning are

maintained or even developed. However, much of this is not only up to formal qualifications but rather personal interest, ambition and drive towards improvement. There is a system in place for competence development of the staff when it comes to pedagogic skills and techniques and everyone is encouraged to go regularly to such seminars and workshops but it was a bit unclear how this is followed up if somebody actually do not take part. It was also a bit unclear how important teaching and pedagogic development is for promotion. The consensus seemed to be that research is more important for promotion but teaching is certainly part of the evaluation done.

Much of the pedagogical development work done by teachers appears to be on their own initiative for single courses. More encouragement of the whole team behind the M.Sc. programme could improve this further so that it becomes a natural thing to try new, innovative and student-centered learning techniques. The committee met with some of the part-time teachers involved in the program, often responsible for certain elements of the program/courses. They appeared to be an appreciated and well-integrated part of the teaching staff and also try and take part in pedagogic and other competence development which is also offered for them. It was not obvious to this committee that visiting teachers are used for this programme. However, as is discussed further below, the committee see a big need for a clearer medical presence in a M.Sc. programme like this, particularly if it expands towards clinical fields like Hematology, even if the focus is partially on science. This could hopefully be solved quite easily by involving guest teachers with full-time positions at the School of Medicine. This would help the current School of Science teachers to focus on their main areas of expertise while the course would gain in credibility if "real" clinicians who see the patients with the disease that the programme students will later discuss the diagnostic tools for.

3.2 Teaching staff number and status

According to the application, at least nine faculty members are actively involved in the program as teachers. Even if the CVs of all of them were not fully up-to-date and even if we did not meet with all of them (but the most influential and involved in the programme), the committee's impression is that teachers have been recruited/retained in a way which is very favourable for many aspects of this M.Sc. programme. The programme coordinator also has other demanding administrative positions (e.g. Associate Dean of the School) and has taken over this role from another teacher who is still involved in the programme. It is the opinion of the committee that the number of teaching staff is adequate in principle to support the quality of the M.Sc. programme in its current format (with a concentration in Immunology only). However, as discussed above, other teachers with more clinical and hands-on experience from the new concentration Hematology will be necessary to recruit/co-opt. For instance, none of the teachers currently involved have worked in a blood bank, which will be important to be able to teach immunohematology, blood groups and other transfusion-related topics.

We noted that only four of the nine faculty members teaching on the programme currently are employed as full-time staff. This corresponds to 44% compared to the fraction required for education offered by private universities. It is realized that this is quite a big task to fix but unless the committee has interpreted this rule, which is not new either, in a wrong way, this is something that the Department will have to remedy as soon as possible. The current teacher panel appears not to be in accordance with CYQAA guidelines, where it is deemed essential to maintain a composition of the teacher staff so that it consists of at least 70% full-time teachers, while it is possible to incorporate a 30% proportion of equally competent part-time professionals.

3.3 Synergies of teaching and research

In general, the committee was satisfied with the level and degree of research activities of the teachers active in this programme, even if it appeared as if some of them had stopped publishing research, something that was found

mainly due to poor updating of the application for evaluation. It was apparent that the financial incentive (1000 euros per article!) to publish in Scopus-registered journals contributed towards staff being keen to publish. However, the plans to expand the number of students may interfere with and threaten the teachers' time to do research so this must be guarded.

Whilst there is a lot of research published by the teacher team, not much can be said to represent immunological research. The same goes for hematology, even if there are exceptions in the group. This alludes to the need discussed above for hematologically focussed teachers or visiting staff. We also noted that some of the teachers are more active than others and help pull in fairly substantial research grants and have a continuous flow of research production. This is of course good for the whole Department and School.

More could probably be done when it comes to fruitful collaborations between other parts of the School or other Schools (mainly medicine) at the local University. If the Hematology concentration is approved and started, more collaborations with clinical researchers focussing on blood disorders is expected and necessary.

Strengths

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

The School/Department should be very happy to have such an engaged and positive teacher team.

Some teachers have tried to implement newer pedagogic models to take advantage of the mature student group and their experience. More can be done to involve them even more, e.g. the flipped classroom approach.

Involvement of students in the teaching and assessment committee as the end receivers and upgrade of the peer review in a way that is fairer and more transparent is a strength to note.

Teachers have time and resources to engage in research.

Joint efforts between the university/school management and individual teachers/investigators have resulted in high standards of premises for both research and educational activities. By sharing up-to-date research infrastructure between research and teaching (to some degree; not completely), the biomedical field becomes more cost-efficient locally. With this as a model, the committee sees a potential for further sharing within the university so that the different Schools work closer together. This applies both to research infrastructure and teachers. The M.Sc. programme would benefit if an exchange could be introduced by which clinically active teachers from the School of Medicine could be part of certain courses to increase understanding of the patient/symptom/therapy perspective on the biomedical science studied, especially since much focus is put on mechanisms that can lead to discovery of therapeutic targets with the long-term purpose to develop pharmaceutical interventions.

Finally, it was noted that teachers were very proud that single students had been highlighted as one of the best at the university.

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.

3.1 Teaching staff recruitment and development

*There is a need to recruit teachers with experience and training in clinical hematology, transfusion medicine/blood banking and transplantation immunology.

*A system to follow up and award competence development within the pedagogic field should be considered in order to encourage systematic and continuous improvement of teaching for the students.

* Create incentives to test and implement new pedagogic models in the M.Sc. programme. This also has the potential to lead to scientific publications within the field of pedagogic development in biomedical education.

3.2 Teaching staff number and status

* The Dean of the School and Department Head must work together with the Program Coordinator to ensure that the University follows the regulations regarding full-time vs. part-time teaching staff. At this point, it appears to this committee that this is not the case for this M.Sc. programme. If this is indeed the case, this must be dealt with swiftly and effectively. A suggestion could be to employ a dedicated bioinformatics teacher as this part needs to be expanded to meet the requirements on scientists of the future.

*Another firm recommendation is to involve teaching staff from other parts of the university, especially from the School of Medicine (for clinical background) to broaden the scope covered by the teachers' team.

3.3 Synergies of teaching and research

* Teaching skills and pedagogic merits should be as important as research when it comes to promotions and annual reviews. It is not enough to write about this in documents. It also has to be practice in reality.

* Now that the publication numbers appear to be increasing for the university it is time to turn the focus from quantity to the quality/impact/citations of the studies published by the teaching staff. This will be in line with changing recommendations in the ranking systems of the future. The committee strongly believe it to be important for the credibility of the M.Sc. program that the teaching staff continues to improve the level at which they perform competitive research in the field of biomedical science but also try and develop research within the immunology and hematology fields to fit the new M.Sc. programme profile.

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

Sub-area		***Non-compliant/ Partially Compliant/Compliant***
3.1	Teaching staff recruitment and development	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 **Student admission, processes and criteria, student progression, recognition and certification**

The M.Sc. Biomedical Sciences programme is a full-time or part-time 1.5 years / 90 ECTS / English language programme which is offered by the Department of Life Sciences of the School of Life and Health Sciences of the University of Nicosia. The programme started with one direction i.e. Immunology but it is now interested to offer two directions i.e. Immunology and Hematology. The programme mainly intents to cover the needs for postgraduate training of scientists from deferent disciplines of the field of Life and Health Sciences to become registered Specialist in Clinical Chemistry and Laboratory Medicine according to the European regulations.

All the procedures regarding processes and criteria for student admission, progression, recognition and evaluation are generally clear and well described and presented. The minimum standard to enter specialty training is a University degree in medicine, chemistry, biochemistry, pharmacy, or another relevant basic science subject. Graduates from an accredited College or University with a B.Sc. degree with certification in Medical Technology/Medical Laboratory Science or a B.Sc. with minimum credits of 30 ECTS in Chemistry/Biochemistry, 30 ECTS in Biological science or an M.Sc. degree in related science fields such as hematology, human/cell biology, biochemistry, microbiology, pharmacology can be accepted. A matching regarding the cumulative point average (CPA) between different pre-graduate environments is well defined. Given that the programme is offered only in English, a very good working knowledge of English is required and applicants must demonstrate proficiency in English. All candidates fulfilling the admission criteria are also giving an interview before the final decision is made by the programme's staff. According to what was presented by the Coordinator and what was seen by the committee

following the student interviews, the majority of candidate students are scientists and professionals from the field of Life and Health Sciences who wish to improve themselves and obtain the European qualifications to start or continue working as experts of clinical diagnostic services. A minority of candidate students are those who wish to perform M.Sc. studies as a step for Ph.D research. In any case, final admission decisions weigh any previous laboratory and research experience, and relevant postgraduate qualifications as well as undergraduate degree-related clinical laboratory training program or 12 months of work experience at a registered medical laboratory or at the clinical laboratories of National Hospital(s).

The official language of the Biomedical Sciences Program is English and was clear that the English language is kept even if the only students are Cypriots or Greeks. Thus, high level of English fluency is needed for admission.

Policies for regular and effective communication between the teaching personnel and the students were described. Students' progress is continuously assessed throughout the semester using various methods and techniques designed based on the aims and learning outcomes of the courses. The assessment methods include final written exams, written assignments, PBL cases/ase studies, tests, short essays, quizzes, and written reports from the clinical practicum and Thesis. The committee had the chance to evaluate examples of students' assignments, exams and Thesis documents and found them to correspond with what is described in the syllabus and in the IPEP document.

The relatively small number of students but also the dedication of the academic staff in the teaching gives an excellent opportunity for close communication and collaboration between students and tutors and gives space for an increase in the implication of students in the evacuation procedure which has been relatively low so far.

The committee was informed by the interviewed academic staff that a Teaching and Assessment committee is going to be established in the School of Life and Health Sciences in the upcoming academic year having three main pillars, i.e. teaching, assessment and professional development, with the commitment to foster a supportive and effective educational environment for the staff and the students.

The programme has developed collaborations with diagnostic, clinic and research laboratories to support the clinical practicum and lab-based Thesis of the students.

The University of Nicosia has been awarded the ECTS and the diploma supplement labels; thus, upon accreditation the current programme is anticipated to accompany the certification with the diploma supplement in line with European and international standards.

Strengths

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

The strength of the programme is the success in recruitment of scientists and professionals from the field of Life and Health Sciences who wish to obtain the European qualifications as experts of clinical diagnostic services according to the requirements of the European Federation of Clinical Chemistry and Laboratory Medicine. This was the main aim and the main target group of candidates following the initial feasibility study of the School of Life and Health Sciences that revealed a massive increase in inquiries for postgraduate training in the different disciplines of Biomedical Sciences due to the changes of the European regulations.

The sustainability of the program during these years indicates that the programme fulfils the students' expectations, at least in the field of Immunology which had been the main direction until now.

The recognition of previous laboratory and research experience in the admission process gives opportunities to scientists and professionals from the field of Life and Health Sciences who represent the programme's main target group to be recruited.

The programme has developed collaborations with diagnostic, clinic and research laboratories to support the clinical practicum and lab-based Thesis of the students.

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.

So far, the main direction of this programme was Immunology alone. In the current application, the programme aims to add Hematology in parallel with Immunology given that both disciplines share a common trunk that can form the basis of the programme. Despite the existing experience, a number of issues described in various parts of this evaluation regarding, among others, the content of the courses and the learning objectives, the competence of the teaching staff in Hematology, would be critical for the credibility of the programme. A closer collaboration with the School of Medicine could accommodate part of this needs.

The hands-on experience should be increased with work related to novel methods in Immunology and Hematology. There are novel methods and techniques relevant for the rapidly moving fields of diagnostics in Immunology and Hematology and even students with previous lab experience may be educated and trained in novel fields. Such training in modern fields will increase the qualification of the students.

As mentioned above, there are two group of students who are interested to enter the program, i.e. those who are mostly interested to obtain the European qualifications and those who want to continue with post-graduate studies. The programme could implement a clinical laboratory diagnostic track and a research-oriented track as follows:

- Clinical laboratory diagnostic track: the students who have the admission criterion of 1 year lab experience could select a clinical practicum in either a research lab or a clinical lab that performs research and continue with a Thesis II of 3 months in a research project which can be either research laboratory based or literature-based.

- Research-oriented track: the students could perform clinical practicum in a research lab and continue with a Thesis II of 3 months with a full time experimental laboratory-based research project.

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

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

- *Adequate and readily accessible teaching and learning resources (teaching and learning environments, materials, aids and equipment) are provided to students and support the achievement of objectives in the study programme.*
- *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 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

From the interviews and the tour through the department buildings the committee gained the impression that all teaching and learning resources are available. Also under challenging circumstances. The university has ample experience with setting up modern e-learning/remote-courses, especially after the pandemic.

Some teaching staff showed a clear interest in implementing and assessing different pedagogic forms of training, and they are monitoring and evaluating the outcomes thoroughly. The committee has the impression that the university provides technical and educational support for present-day pedagogic forms, including Flipped classroom and Team-based learning.

The university has the intention to increase the number of students. One of the strengths of the current programme is the advantageous ratio of students versus staff that ensures an intense contact between them. When more students are taken on, the course leaders should make sure that this is not at the expense of the good staff-student interactions.

5.2 Physical resources

During the physical tour, the committee has seen lecture rooms, study rooms, teaching laboratories, and research laboratories. The buildings look clean and the lecture and study rooms were spacious and numerous. Both the teaching and research laboratories were adequately equipped and also spacious.

The research labs are sufficiently equipped to perform the core molecular biological experiments including Western blotting, tissue culture work and (fluorescence light) microscopy, and soon a flow cytometer. High-end, analytical immunology/hematology equipment, such as FACS, are not present but available under agreements for a minimal fee at either the Institute of Neurology and Genetics or the Karaiskakio Foundation, both located in close proximity to the campus.

5.3 Human support resources

From the interviews with administrators, teaching and support staff, and information from the Application for evaluation document, the committee gained the impression of a well-organized university that is fully aware of the needs of students, and the difficulties students and staff, can occasionally encounter. Mentoring schemes are in place, but also psychological support. In addition, the university tries to make life at the campus pleasant and inclusive.

5.4 Student support

The impression of the committee is that the student support is excellent. Firstly, all 7 students that joined the interview were positive about the course and the teaching staff, and there were no complains related to other areas of student support. Secondly, the Application for evaluation document and the presentations/explanations provided by the support staff indicated that there is adequate support for students with needs.

During the interview of the students some of them struggled a bit with their English. The committee cannot be sure that the students are presentative for the cohort that follow/have followed the programme, however, they can imagine that this is because the cohort of students is older compared to most M.Sc. programmes, and the experience is that the comprehension of the English language increases with every generation. However, should a student wishes to further improve their English skills, the committee assumes that this can be organized within the University.

Strengths

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

5.1 Teaching and Learning resources

Problem/case-based learning appears to be an appreciated learning method for the students.

All the necessary teaching and learning resources are available.

The university is proficient in making and providing online courses/e-learning.

Experience and support for new pedagogic teaching forms is available.

There is ample qualified teaching staff available for the number of students. The relatively small classes assure a good and intensive contact between students and teaching staff, which is highly appreciated by the students.

The teaching staff is involved in actual research.

5.2 Physical resources

The lecture and study rooms, teaching and research laboratories are spacious and clean.

The laboratories contain the right equipment to perform basic biomedical research, including immunology and hematology related research (DNA, protein gels, western blot equipment, centrifuges, modern pipettes, tissue culturing, incubators, fluorescence microscopy and more).

The library appears well equipped and provides access to the necessary research and teaching material.

5.3 Human support resources

The support staff seems clearly "involved" in trying to provide the students a good learning and living experience.

The teaching staff is very enthusiastic and they are active in research.

5.4 Student support

The support for students at all levels, including extracurricular, social and sport activities are available. Importantly, support for students with needs is available and appears to be well organized.

Students appreciated the quick transition from on-site training to online training during the Covid pandemic.

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.

5.1 Teaching and Learning resources

Some students requested more experimental training and as outlined at several places in this document, the University should decide whether to properly train research-oriented students. If that is the case, more experimental training should be include in the courses.

Hands-on exposure to high-end and advanced analytical equipment, such as FACS, is recommended.

An important strength is the ease with which students can contact and interact with the teaching staff. This should be cherished and maintained when student numbers are increasing.

5.2 Physical resources

The laboratories are sufficiently equipped to perform the main molecular biological experiments and analyses, including the more immunology and hematology oriented experiments and analyses. Experience with advanced equipment such as FACS can be obtain by means of collaborations with either the Institute of Neurology and Genetics or the Karaiskakio Foundation, both of which are relatively close by.

5.3 Human support resources

The human support resources appear to be excellent and the committee has no specific recommendations.

5.4 Student support

The student support appears to be excellent and the committee has no specific recommendations.

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

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

6. Additional for doctoral programmes *(ALL ESG)*

Sub-areas

6.1 Selection criteria and requirements
6.2 Proposal and dissertation
6.3 Supervision and committees

6.1 Selection criteria and requirements

Standards

- *Specific criteria that the potential students need to meet for admission in the programme, as well as how the selection procedures are made, are defined.*
- *The following requirements of the doctoral degree programme are analysed and published:*
  - *the stages of completion*
  - *the minimum and maximum time of completing the programme*
  - *the examinations*
  - *the procedures for supporting and accepting the student's proposal*
  - *the criteria for obtaining the Ph.D. degree*

6.2 Proposal and dissertation

Standards

- *Specific and clear guidelines for the writing of the proposal and the dissertation are set regarding:*
  - *the chapters that are contained*
  - *the system used for the presentation of each chapter, sub-chapters and bibliography*
  - *the minimum word limit*
  - *the binding, the cover page and the prologue pages, including the pages supporting the authenticity, originality and importance of the dissertation, as well as the reference to the committee for the final evaluation*
- *There is a plagiarism check system. Information is provided on the detection of plagiarism and the consequences in case of such misconduct.*
- *The process of submitting the dissertation to the university library is set.*

6.3 Supervision and committees

Standards

- *The composition, the procedure and the criteria for the formation of the advisory committee (to whom the doctoral student submits the research proposal) are determined.*
- *The composition, the procedure and the criteria for the formation of the examining committee (to whom the doctoral student defends his/her dissertation), are determined.*
- *The duties of the supervisor-chairperson and the other members of the advisory committee towards the student are determined and include:*
  - *regular meetings*
  - *reports per semester and feedback from supervisors*

- *support for writing research papers*
- *participation in conferences*

- *The number of doctoral students that each chairperson supervises at the same time are determined.*

You may also consider the following questions:

- *How is the scientific quality of the PhD thesis ensured?*
- *Is there a link between the doctoral programmes of study and the society? What is the value of the obtained degree outside academia and in the labour market?*
- *Can you please provide us with some dissertation samples?*

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.

Not applicable.

Strengths

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

Not applicable.

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.

Not applicable.

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

Sub-area		***Non-compliant/ Partially Compliant/Compliant***
6.1	Selection criteria and requirements	Not applicable
6.2	Proposal and dissertation	Not applicable
6.3	Supervision and committees	Not applicable

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 University of Nicosia presented the feasibility study performed after they noticed a potential need for an M.Sc. programme in Cyprus that corresponds to the requirements in the European Federation of Clinical Chemistry and Laboratory Medicine syllabus for postgraduate education and training for Specialists in Laboratory Medicine from 2018 (version 5). This applies to the management level of clinical laboratory staff in the EU. The conclusion drawn by the School of Life and Health Sciences based on the feasibility study was that there is a need for a dedicated M.Sc. programme in Cyprus that would attract clinical laboratory managers and also others interested in the topic.

Part of the stipulated postgraduate education and training needs are M.Sc. courses in Immunology, Hematology, Microbiology and Clinical Biochemistry. Therefore, the University developed an M.Sc. course in biomedical science about ten years ago, according to information on a slide describing the programme. The committee has access to student data dating back to 2017 showing that between 16 and 33 students have been registered for the M.Sc. programme until now. So far, the concentration/focus of this programme has been on Immunology alone. In the current application to expand the scope of the M.Sc. programme with yet another concentration, they have now developed a proposal to add Hematology in parallel with Immunology. The long-term plan is to also add concentrations on Microbiology and Clinical Biochemistry.

The rational to start with Immunology and Hematology is the fact that both disciplines share a common trunk that can form the basis of the programme. **The committee agrees with this in principle** but will argue below that the joint potential can be increased further. **A possible red flag** is that the committee noted that the European Federation of Clinical Chemistry and Laboratory Medicine syllabus categorizes Immunology together with Clinical chemistry (group B1), and not hematology. Hematology is instead grouped with blood transfusion including hemostasis and cellular immunology etc (B2).

The Immunology concentration has been offered for several years already and is therefore more mature and more clearly laid out. The Hematology concentration on the other hand is new, which is reflected in several ways that the committee noted:
1) The number of teachers with hematology experience and training is very limited in the Department and the committee finds it **crucial that experts, MDs as well as non-MDs, in clinical hematology, transfusion medicine/blood banking and transplantation immunology become involved in the programme**. This is critical for the credibility of the programme and to reach relevant and reasonable learning outcomes. A closer collaboration with the School of Medicines could accommodate part of these needs.
2) In the list of research areas and projects shown as part of the presentation of the School of Life and Health Sciences, **Hematology (and in fact also Immunology) research is essentially lacking**, although it was pointed out that hematological parameters and the immune response of young and elite soccer players are included in a current project in sports medicine at the Department of Life Science. Since an M.Sc. programme should consist of research-based education, this is a worry. The committee acknowledges that both topics can be "hidden" as part of other projects (particularly immunology) but it is a clear sign that especially hematology is not (so far) a focus area at the Department or School.
3) The **course objectives, and particularly the learning outcomes, proposed for the new Hematology and Immunohematology courses in the syllabus are either insufficient, not up-to-date and/or too extensive, i.e.**

thereby unrealistic in scope. **This needs to be dealt with by updating/revising most of the learning outcomes.** The committee thinks that also the immunology-related learning outcomes need an update because the content is no longer current. In this way, new methodology, concepts and therapies based on immunological approaches can be included. Having said this, the committee realizes that the syllabus needs to take into account the fact that the European Federation document from 2018 mentions many antiquated methods, but one can foresee a need of revision to future-proof also this document within the next few years.

A specific recommendation is to introduce another joint required course, one that will appeal to both students who have chosen the Immunology and Hematology concentrations, namely the expansive and very "hot" field of **Immunotherapy**. The reason for this suggestion is that many modern concepts that are now moving quickly from the lab bench to the clinic appear to be missing in the syllabus. Also, hematological disorders are often among the first ones to be targeted by these novel treatments. This would be an excellent way to let the Immunology students interact with the Hematology students so that both groups can better understand how one field is dependent on the other. For clinical laboratory professionals, Advanced Therapy Medicinal Products (ATMP, i.e. novel treatments based on cell, gene or tissue therapies) is also a very current, related topic that can be included here. Those laboratory medicine specialists working in blood banks or other cell therapy centers in the future will certainly have to deal with many of these new modalities.

Another recommendation is based on the relative lack of new methods and techniques relevant for the rapidly moving fields of diagnostics in Immunology and Hematology. The committee thinks **there should ideally be room for more hands-on practical course work related to such methods, or at least demonstrations**. A good example of this was brought up during the site visits, when it was announced that a flow cytometer will be acquired later this year. It is actually surprising that it has been possible to run an immunology-heavy course at M.Sc. level without a flow cytometer close at hand. Having said that, the committee acknowledges the expertise of one of the teachers in this area and assume that visits have been arranged to labs that have the capacity to run flow cytometric applications including cell sorting etc.

The committe found **the low fraction of full-time teachers to be a clear threat** to the future of the programme. Currently, only four of nine teachers (44%) listed in the application as involved in the programme are full-time employees at the University. This needs to be increased significantly to comply with the regulations for education offered by private universities.

The University finds research, measured in grants and peer-reviewed, Scopus-listed, publications important and even provides financial incentives for publications. The committee **advices to shift the focus from quantity to quality (impact/citations) of publications**, in line with current world-wide developments to measure research impact.

Importantly, the **research interest and focus seem almost absent in the current M.Sc. programme**, as it is e.g. possible to go through the programme without performing any research project. Furthermore, research was completely lacking in the programme's purpose and aims which were presented on a slide during the site visit. Related to this, a major problem for the course at large (even if Hematology would not be added as a concentration) is that it targets two very different groups:
1) those that simply need to upgrade their merits by obtaining the European qualifications to start or continue working as managers of clinical diagnostic services, and
2) others that would like to go into research and need a M.Sc. degree in a relevant biomedical subject to be able to follow up with a Ph.D. as the next step.

This dichotomy poses a serious challenge for the current programme, which the committee feels would be helpful to **address in one of two ways before the new programme can start**: Either go for a more homogenous student group and cater specifically for them (in that case 1 year clinical lab experience should be obligatory for enrolment to the programme and result in a group of students who are there to obtain European level merits for a career in clinical diagnostics). This appears to have been the most common target student group so far.

The alternative would be to create an additional track that is focused on students that are interested in and good at research and would like to pursue a Ph.D. In the guidelines of the European Federation of Clinical Chemistry and Laboratory Medicine syllabus it is clearly mentioned that a competence in research is of importance. This would imply that all students should do a research project during their M.Sc. training but this is currently not the case. The tension between students who want more hands-on lab experience and more research-oriented M.Sc. and those who do not see this as the most important was obvious during the site visit, both when talking to teachers and students.

Of the two alternatives above, the committee favours to create a clinical diagnostics track and a research-oriented track that would differ as follows:

1) **A Clinical diagnostics track:** one year lab experience required for enrolment + Placement in either a research lab or a clinical lab that does research + Thesis II of 3 months research project which can be either experimental laboratory based or a 3 months literature based research study.
2) **A research-oriented track:** no requirement of clinical lab experience (but of course practical experience with molecular biomedical/biological analyses) + Placement in a research lab + Thesis II comprising a 3 months full-time experimental laboratory-based research project (Again, for this track the student must come from a B.Sc. programme that included sufficient practical training since this M.Sc. course does not include much practical training).

If the School/Department/teacher staff think that the above proposal is not practically possible, then we strongly recommend to go for only the Clinical diagnostics track and optimize this M.Sc. for clinical diagnostic specialists, especially when/if further topics expansion may occur towards Microbiology and Clinical biochemistry as planned.

Following the above improvements, the committee believes that the proposed M.Sc. programme will increase its chances of being successful also in the coming years.

E. Signatures of the EEC

Name	*Signature*
Prof. Dr. Martin L Olsson	
Prof. Dr. Helen Papadaki	
Prof. Dr. Leendert Hamoen	
Mr. Stephanos Hilides	

Date: 13 July 2023