



Doc. 300.1.2

Higher Education Institution's Response

Date: Date.

- **Higher Education Institution:**
University of Cyprus Medical School

- **Town:** Nicosia

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

In Greek:

Programme Name

In English:

Precision Medicine in Clinical Practice

- **Language(s) of instruction:** English

- **Programme's status:** New



The present document has been prepared within the framework of the authority and competencies of the Cyprus Agency of Quality Assurance and Accreditation in Higher Education, according to the provisions of the “Quality Assurance and Accreditation of Higher Education and the Establishment and Operation of an Agency on Related Matters Laws of 2015 to 2019” [N. 136 (I)/2015 to N. 35(I)/2019].

A. Guidelines on content and structure of the report

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

We would like to thank the members of the External Evaluation Committee for their contribution, documenting their findings and acknowledging the strengths of the Master Programme ‘Precision Medicine in Clinical Practice’. Please find our responses to the comments/questions raised under the ‘Areas of improvement and recommendations’ of each section.

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

(ESG 1.1, 1.2, 1.8, 1.9)

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Findings

The Master’s study ‘Precision Medicine in Clinical Practice’ is timely and relevant in today’s healthcare systems. The study focusses on molecular diagnostics, pharmacology including pharmacogenomics, design and interpretation of clinical trials, statistics, medical ethics and on a research thesis.

The facilities for the Study are modern and sufficiently well equipped.

The topics of the Study are well outlined.

The workload is appropriate.

The study reflects the four purposes of higher education of the Council of Europe.

Strengths

Study covers timely and clinically relevant topics which are increasingly relevant for most disciplines of modern medicine, especially those related to diagnostics and drug treatment.

Focus will be on cancer, cardiology, infectious diseases and neurological/psychiatric diseases.

A strength is the interdisciplinary nature of the study involving clinicians, basic and translational scientists and bio-informatics experts.

Low number (aim: 10-15 per year, min 5 per year) of participants allows close interaction between teachers and students.

The study will enhance the international & loco-regional standing of Cyprus in medicine, bio-informatics and bio-technology.

Areas of improvement and recommendations

1. A strong focus of the clinical relevance and implementation of precision medicine is recommended.

Response 1: We thank the members of the External Evaluation Committee for their recommendation. As presented during our online evaluation discussions with the Committee,

the clinical impact and implementation of precision medicine is precisely the focus of this Programme. As part of our immediate next steps, we will ensure the strong relevance of precision medicine with different areas of clinical practice is accurately reflected in the content and highlighted in the promotion of the Programme.

2. The requirements for admission to the Master's study should be described in more detail.

Response 2: We thank the members of the External Evaluation Committee for the comment. The admission criteria have been defined based on 2 axes: (a) the intention of the Programme to attract both clinicians and basic scientists who are interested to expand their knowledge and/ or focus on precision medicine and (b) the general requirements for admission to a postgraduate programme as outlined by the University of Cyprus. The aim is to keep a balance between the numbers of health care professionals and basic scientists admitted to the Programme.

With the above in mind and in response to the External Evaluation Committee's comment, the admission criteria have been augmented and revised to be:

1. Present a Bachelor degree from an accredited university.
2. Have previous university education in a suitable and relevant field (academic background) and sufficient grades in the associated subjects.
 - Previous relevant and suitable background includes a degree in: medicine, nursery, biomedical sciences, biological sciences, pharmacological sciences, computational biology, biochemical sciences, molecular sciences, or other relevant fields.
 - A minimum Upper Second-Class Honours (>60%) degree is required
 - In associated subjects (within the previous degree) grades of >60% are required

3. Good knowledge of the English language
This is defined by the criteria set by CYQAA (September 2020)

4. Letters of recommendation

The letters of recommendation are to be provided by at least 2 referees, one of which should preferably be one of the candidate's professors at their previous degree(s)

5. Interview (if deemed necessary by the postgraduate programme committee)

If the postgraduate programme committee feels that the 4 aforementioned criteria do not allow the formulation of a clear opinion on the candidate's admission profile, then the candidate will be invited for an interview. This may be applicable to any number of candidates or all candidates shortlisted by the Medical School postgraduate studies committee.

3. Currently, the institute and researchers are not in frontline of 'Precision medicine' and alignment of the institute's research and clinical profile with the educational profile should be considered. This could be done through more investments and international collaborations.

Response 3: We thank the External Evaluation Committee for this comment. It is acknowledged that in terms of research, our young Medical School's academics are not yet at the frontline of Precision Medicine. However, many of them are closely linked with institutes

and medical schools abroad which lead research in this field and the Medical School itself is steadily establishing a network of collaborations with institutes and universities abroad in order to strengthen its research profile and outputs.

In this context:

1. The Medical School's efforts to expand its educational and research profile include the following agreements and partnerships:
 - (a) The Medical School holds a Memorandum of Understanding with the McGill University (Canada) since November 2019 (details Annex 1).
 - (b) The Medical School signed a Memorandum of Understanding with the University of Bern (Faculty of Medicine) in mid2020 (details in Annex 2).
 - (c) Moreover, the Medical School has interactions with the Medical Schools of Alfaisal University | Riyadh-Kingdom of Saudi Arabia, and the University of Edinburgh, Scotland, and is in the process of establishing official collaboration agreements with them.
 - (d) Finally, the University of Cyprus, participates in the universities alliance "Young Universities for the Future of Europe (YUFE)" alongside seven other young European universities, thereby joining forces to develop and implement the first models for a European University (Annex 3). In this context, the Medical School is seeking to explore research opportunities in relation to fields of interest such as interactions and establishing collaborations within the YUFE alliance.
2. Precision Medicine is already in the research interests of some of the academics involved in this postgraduate Programme particularly in the fields of oncology, psychiatry, neurology, genetics. In addition, elements of Precision Medicine in the undergraduate educational and clinical training Programme are currently provided through the delivery of relevant lectures to introduce undergraduate students to the concepts of this field. This alignment with the research and clinical areas is expected to further increase through the conduct of Precision Medicine research thesis projects as part of the Programme.
3. With regards to further expanding our international collaborations, this is a priority for this Programme as well as for the Medical School of the UCY. In the first instance an External Experts Advisory Committee on Precision Medicine will be established for the MSc, comprising clinicians/scientists/academics at the forefront of Precision Medicine in Europe and internationally. Their contribution is expected to include the development of collaborations with their and other institutions in this field abroad. Furthermore, the interactions of the postgraduate Programme with the Centres of Excellence within the UCY, CY-BioBank, CCRI and Kios (slide 19 and 23 power point presentation of the coordinator of the Programme in the evaluation process - Annex 4) and their international connections will further increase the options for enriching the Programme's outlook on Precision Medicine.
4. Co-operations with other Universities, especially with internationally well recognized ones, are recommended. These could include invitations of international scientists/doctors as lecturers or organizers of seminars or summer schools.

Response 4: Thank you for the helpful comments and recommendations. As described in Response 3, it is our intention to establish international collaborations through this Programme in order to support and expand our research profile in Precision Medicine. At the same time, we take on board the Committee's recommendation to invite international experts in Precision Medicine to deliver lectures as part of the Programme but also organize workshops and seminars in their field of expertise.

5. Co-operations with pharmaceutical companies are recommended.

Response 5: Thank you to the External Evaluation Committee for your recommendation. We are already in discussions with local branches of pharmaceutical companies with a view to decipher the various aspects of collaboration that can be developed as part of the postgraduate Programme. Examples of such aspects include: (a) to invite pharmaceutical companies to offer placements of students during their thesis in areas relevant to Precision Medicine (b) to encourage their employees to apply for the Programme by securing the required fees through their company, (c) to co organize seminars or educational sessions on specific areas of Precision Medicine with academics from the Programme.

6. We also suggest to focus on translational research as part of international multi-center phase 3 trials, whenever possible.

Response 6: Thank you for the useful recommendation which is indeed one of the aims of this Programme, i.e. to promote translational research which is much needed in our country. Bringing together clinicians and scientists in this postgraduate Programme will inevitably promote the building of translational projects. With regards to participation in multicenter phase 3 trials, we anticipate this to become feasible through: (a) the international collaborations of the Programme (Response 3, Response 4), (b) the collaboration with pharmaceutical companies locally and internationally and (c) the activation of the clinical trials unit at the Medical School linking different clinical fields of Precision Medicine.

7. Aspects of Precision Medicine including sufficient methodological skills, e.g. related statistics and sequencing technologies, may also be included in the future medical curricula and need alignment.

Response 7: Thank you very much to the External Evaluation Committee for this recommendation. We will strongly pursue the recommended inclusion of methodological expertise, including statistics and sequencing technologies, in the future curriculum. In fact, after the relevant discussions during the evaluation process we have already started internal discussion as to how we can incorporate such skills from the start of the Programme. Recognizing the changing needs of such a rapidly expanding field we aim to review and adjust the content of the Programme at regular intervals with the support of the External Experts Advisory Committee (see Response 3). This refers to all subjects taught in the Programme including the methodological skills.

8. It was not always clear how in the master's study deepening and specialisation of content will be reached as compared to the medicine curriculum, e.g. the statistics course seems rather basic and not focussing on data-analysis in Precision Medicine per-se.

Response 8: We thank the Committee for this comment and we appreciate the issue raised here. The content of each Module as outlined in Annex 2 of the application, presents the general context in which each Module will run. It is true that in this version of the application which was written in 2017 at the original submission of the Programme to the University of Cyprus for approval (slide 18, power point presentation - Annex 4), there is not always extensive explanation or justification of the level of specialisation in relation to the Precision Medicine focus. As discussed during the evaluation process, upon approval of the Programme, a meeting held by the Programme's coordinator and all involved academics, will focus on delineation of the content of each Module in relation to Precision Medicine, and the level of study (specialist vs basic) to ensure fulfilment of this requirement. For example, the statistics curriculum in particular - following the Committee's recommendations - will include lectures on data management of clinical registries, algorithms in clinical care, and big data analytics for precision medicine.

9. Quality assessment criteria for thesis acceptance should be set, e.g. in terms of accepted research papers.

Response 9: Thank you for this comment. A peer reviewed publication is not currently a requirement for an MSc thesis acceptance according to the rules/ regulations set by the University of Cyprus School of Postgraduate Studies, for any other postgraduate programme at the University of Cyprus, although it is acknowledged that such a requirement may indeed be critical in raising the level of research quality achieved through this postgraduate Programme. The quality assessment criteria for thesis set by the University of Cyprus will be followed in the first instance but the Programme's internal evaluation committee will closely review outcomes, keeping a low threshold in making necessary changes when/ if appropriate.

10. The master's study, in particular the thesis, should encourage participants to continue their research as a PhD study.

Response 10: We thank the Committee for the comment and recommendation. In fact, we have indicated in our application (Section 11, page 30) that this is one of the main aims of the Master Programme. We anticipate a number of our postgraduate students will be interested in proceeding with PhD studies in Precision Medicine related fields after their Master Studies.

2. Teaching, learning and student assessment (ESG 1.3)

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Findings

The Master's study is well prepared and organized as well as consistent with similar studies of other Universities.

Strengths

Interactive learning and case studies.
Use of Speedwell.

Areas of improvement and recommendations

1. The balance between lab-based research and clinical research should be provided.

Response 1: We thank the Committee for this comment. Opportunities for lab-based research and clinical research will be provided equally during the Programme as evidenced by the balanced expertise in basic and clinical research. Conduct of short self-led research projects will be offered through the Autonomous Modules of the Programme but primarily through the conduct of the thesis project. The students will have the opportunity to focus on areas of their own interest including wet laboratory research project, clinical research project, psychology practice research project, computer modelling research project, data analysis research project (slide 13 of Coordinator's presentation during the evaluation process - Annex 4). The number of available fields are expected to increase with time as the number of academics teaching in the Programme continues to increase.

2. We have not seen examples of thesis projects. An overview of ongoing research projects on Precision Medicine for students could be helpful.

Response 2: Unfortunately, there are no examples of thesis projects yet, as this is the very first Postgraduate Programme of the Medical School of the University of Cyprus. However, the potential areas of research include wet laboratory research project, clinical research project, psychology practice research project, computer modelling research project, data analysis research project, based project). (slide 13 of Coordinator's presentation during the evaluation process - Annex 4).

3. Implementation of selected practical courses would be beneficial for method evaluation competencies.

Response 3: Thank you to the Committee for this recommendation; in response to your suggestion, practical courses have been added to the Pharmacology Module, to the Molecular Diagnostics Module and to the Genetics Module, in the first instance. Upon review of the content and methodologies used in the first few years of the programme and feedback received by students and teachers, further adjustments may be introduced.

4. It should be considered to plan PhD trajectories in Precision Medicine for excellent students as a follow-up of their master thesis.

Response 4: Thanks very much for your recommendation. As indicated in Section 1, Response 10, we are interested in encouraging high achievers moving towards PhD studies after the completion of the Master Degree. However, there is no PhD programme running at the Medical School yet. When this is established, creating PhD trajectories in Precision Medicine will be reviewed by the postgraduate committee and the Council of the Medical School to define a relevant policy.

5. It was not completely clear how well the Institute is prepared towards distant learning and what the impact would be on this curriculum.

Response 5: We thank the Committee for this comment. The University of Cyprus has established a fully functional remote learning system for both the undergraduate and the postgraduate programmes in response to the pandemic challenges during 2020. The University of Cyprus management team monitors and reviews the developments that emerge and constantly informs the community regarding the decisions that affect the operation of the University of Cyprus. UCY's priority is the safety and health of its community as well as the organisation's contribution to better addressing this worldwide challenge. Given that the Precision Medicine postgraduate Programme is essentially based on lectures during year 1, its running between Sept 2021 -2022 should not be affected if the teaching had to be switched to a distant mode.

3. Teaching Staff (ESG 1.5)

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Findings

The professors and teachers are well experienced and fully devoted to the Master's study.

Strengths

Courses and seminars to guarantee educational quality of teachers are organised and an evaluation procedure of teachers is in place.

A good complementation of clinically active staff by basic scientists is established.

Areas of improvement and recommendations

1. Mandatory educational training and certification of teachers should be considered.

Response 1: In response to the requirements of the 2019 accreditation of the University of Cyprus Medical School, several actions have been taken regarding the staff activity and staff development of the School, including mandatory introductory training and certification of all faculty members. Specifically, the School invites/asks all faculty members at the beginning of each academic year, to attend a session that includes a series of presentations on the School's curriculum and syllabus. In addition, before the end of each academic year, the faculty members with common teaching areas have an interactive discussion to identify any gaps in the curriculum. Furthermore, at the beginning of each academic year, the clinical teachers have to attend a session of presentations regarding the overall curriculum (evidence: Annex 5.1 - Part of the minutes of the 10th/2020 meeting of the Medical School Council - Decision 9.11).

In addition to the above, the new faculty members of the Medical School are invited to attend orientation and induction seminars at the beginning of each academic year which are organized by the Centre of Teaching and Learning of the University of Cyprus (CTL) (evidence: Annex 5.2 - Invitation to new Academic staff to attend orientation and induction seminars for the academic year 2020-2021, Annex 5.2.1 - Programme of the seminars (duration: 3 days beginning from 31 August 2020)). The activities of CTL are part of the University of Cyprus Policy for Quality Assurance (QA) in Teaching (Annex 5.3 - University of Cyprus Policy for QA in Teaching).

To improve the knowledge of the academic staff of the School regarding the digital examination system of the School, the UCY Medical School offered in May 2020 a relevant educational seminar (Annex 5.4 - Invitation to the academic staff of School to attend educational seminar regarding the digital examination system of the School). The seminar included among others, training in the digital examination process and in the use of the system.



2. The team is small and, therefore, vulnerable the teaching teams should be broadened in order to avoid potential problems, e.g. if a teacher moves to another country or retires.

Response 2: Thank you very much for this comment which reflects a very realistic problem. We acknowledge and we are fully aware of the risks mentioned by the External Evaluation Committee. To this end, the teaching staff will be systematically reviewed with regards to their needs and obligations as well as their plans in relation to participating in the Programme delivery. As the Medical School grows in terms of numbers, the teaching staff of the MSc Programme will also be broadened. There has already been planning (in terms of funding) for ad hoc invitation of additional teaching staff, from Cyprus or abroad, to cover unexpected teaching problems in the Programme, should the need arise.

4. Students

(ESG 1.4, 1.6, 1.7)

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Findings

Admission criteria appear to be too broad.

[Refer to Response 2, Section 1, Areas of improvement and recommendations.](#)

Strengths

The low number of participants of the Master's study should guarantee excellent interaction between teachers and students as well as among students.

Areas of improvement and recommendations

1. The requirements for the admission of students to the Master's study should be defined in more detail because currently it is only stated 'suitable and relevant field'.

Response 1: [Refer to Response 2, Section 1, Areas of improvement and recommendations.](#)

2. Participants should reflect the interdisciplinary nature of the study.

Response 2: [Thank you very much for your recommendation. Attention will be paid during the admission process to ensure that the background of the students remains multisource. Both basic scientists and health professionals will be encouraged to join the Programme.](#)

5. Resources

(ESG 1.6)

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Findings

Students and doctors of the University of Cyprus greatly appreciated the excellent support and mentorship by their professors and teachers. The students reported easy and fast access to their teachers throughout the whole study period.

The teaching facilities are modern and sufficiently well equipped.

Access to a library and, thereby, to medical and scientific literature is guaranteed.

Students will have support by IT staff.

Strengths

Strengths of the Master's study include modern facilities, devoted teachers and low number of students.

Areas of improvement and recommendations

1. An increased focus on participation of students from other countries, in particular locoregional ones, is recommended.

Response 1: We are already in the process of exploring the participation of students from other countries including locoregional ones. The Medical School's interactions with the surrounding countries will be specifically explored regarding this issue as we regularly receive enquiries about our postgraduate programmes from surrounding countries. At the same time the Programme is advertised in the European School of Oncology (ESO) Courses, particularly in Southern countries and Europe one, which takes place in Cyprus every year with participation from surrounding countries including Egypt, Lebanon, Morocco, Tunisia and others.



6. Additional for distance learning programmes (ALL ESG)

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7. Additional for doctoral programmes (ALL ESG)

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8. Additional for joint programmes (ALL ESG)

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B. Conclusions and final remarks

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1. The Master's study is timely and of medical relevance for Cyprus and other countries.

Response 1: Thank you for this remark. We strongly feel this is a postgraduate Programme at the right time, with the right content, at the right place and for the right students! We are grateful to the Expert Evaluation Committee for their recommendations and overall contribution in this process.

2. Co-operations with other Universities are recommended.

Response 2: Please see response 3 in Section 1. Study programme and study programme's design and development - Areas of improvement and recommendations.

3. Regular assessments of the study and appropriate adaptations are recommended because of the rapid dynamics of this field.

Response 3: Recognizing the changing needs of such a rapidly expanding field we aim to review and adjust the content of the Programme at regular intervals with the support of the External Experts Advisory Committee. Upon review of the content and methodologies used in the first few years of the Programme and feedback received by students and teachers, further adjustments may be introduced. This refers to all subjects taught in the Programme. The External Experts Advisory Committee on Precision Medicine will be established comprising clinicians/scientists/academics at the forefront of Precision Medicine in Europe and internationally.

C. Higher Education Institution academic representatives

<i>Name</i>	<i>Position</i>	<i>Signature</i>
Anastasia Constantinidou	Coordinator of the MSc	
Georgios Hadjigeorgiou	Ass Dean of Medical School	
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Click to enter Name	Click to enter Position	
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Date: 07 January 2021

