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CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION
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Doc. 300.1.2

Higher Education Institution's Response

Date: 11.3.2022

- **Higher Education Institution:**
  European University Cyprus
- **Town:** Nicosia
- **Programme of study**
  Name (Duration, ECTS, Cycle)

  In Greek:
  Pharmacy (5 Years/300ECTS, Integrated Master)

  In English:
  Φαρμακευτική (5 Έτη/300 ECTS, Ενιαίος Τίτλος Σπουδών Μεταπτυχιακού Επιπέδου)
- **Language(s) of instruction:** Greek and English
- **Programme's status:** Currently Operating
- **Concentrations (if any):** N/A

  In Greek: Concentrations
  In English: Concentrations

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

A. Guidelines on content and structure of the report

- *The Higher Education Institution (HEI) based on the External Evaluation Committee's (EEC's) evaluation report (Doc.300.1.1 or 300.1.1/2 or 300.1.1/3 or 300.1.1/4) must justify whether actions have been taken in improving the quality of the programme of study in each assessment area.*

- *In particular, under each assessment area, the HEI must respond on, without changing the format of the report:*

    - *the findings, strengths, areas of improvement and recommendations of the EEC*
    - *the conclusions and final remarks noted by the EEC*

- *The HEI's response must follow below the EEC's comments, which must be copied from the external evaluation report (Doc.300.1.1 or 300.1.1/2 or 300.1.1/3 or 300.1.1/4).*

- *In case of annexes, those should be attached and sent on a separate document.*

The Department of Life Sciences of the European University Cyprus wishes to express its sincere gratitude to the External Evaluation Committee (EEC) for the re-accreditation of the Integrated Master degree in Pharmacy (MPHA).

The collegial spirit created by the members of the EEC during the evaluation processes created an atmosphere of knowledge sharing and synergy, which allowed the members of the Department to support the programme to the best of their abilities. It is thus, with great pleasure that the Department of Life Sciences noted the positive feedback of the EEC and we appreciate its insightful recommendations, which provided us with the opportunity to further improve the quality and ensure the future implementation of the programme.

In the following pages, we respond in detail to all recommendations for improvement suggested by the EEC and we provide all relevant information to explain the actions taken to ensure that the newly accredited programme remains current and of high quality.

1. Study programme and study programme's design and development
(ESG 1.1, 1.2, 1.7, 1.8, 1.9)

The EEC has raised the following issues. The response for issue is shown below each point that is raised.

1. The ECTS units allocated for the introductory courses should be reduced in favour of the basic pharmaceutical subjects and patient-oriented courses. The course of Pharmaceutical Care should be compulsory and evidence-based medicine and critical literature assessment skills should also be introduced in the Programme as a compulsory course.

Response by EUC:

We agree with the EEC that the ECTS units allocated to the introductory courses could be reduced in favor of the basic pharmaceutical subjects and patient-oriented courses. For this reason, 18 ECTS units corresponding to introductory courses, have been deducted from the curriculum, as shown in Table 1.

Table 1: *List of the Introductory Courses that have been removed from the curriculum*

Courses	***ECTS Removed***
General Biology	6
Physics for Pharmacists	3
Basic Pathology and Symptomatology	6
First Aid	3
Total ECTS Units	**18**

Furthermore, for further reducing introductory content, we have merged the laboratory courses of Analytical Chemistry, Biochemistry and Organic Chemistry, with the corresponding theoretical courses, as shown in Table 2, thereby freeing another 9 ECTS units. Moreover, the Anatomy/Physiology I and II courses (12 ECTS) were merged into one course, HEA120-Anatomy/Physiology (6 ECTS). These merges led to a further reduction of 15 ECTS units.

Table 2: *List of merged courses*

Old Laboratory Course	***Old Theory Course***	***Total ECTS***	***New Merged Course***	***ECTS***
Laboratory Techniques in Analytical Chemistry	Analytical Chemistry	3 + 6 = 9	PHA235- Analytical Chemistry	6
Laboratory Techniques in Biochemistry	Biochemistry	3 + 6 = 9	PHA255- Biochemistry	6
Laboratory Techniques in Organic Chemistry	Organic Chemistry II	3 + 6 = 9	PHA205-Organic Chemistry II	6
Total ECTS		27		18
Reducted ECTS Units		27 - 18		**9**

Correspondingly, in order to address the EEC's recommendation to increase the basic pharmaceutical and patient-oriented courses, we added four (4) compulsory courses of 21 ECTS units in total and four (4) elective courses of 24 ECTS units in total, as shown in Table 3. We have also increased the ECTS units of the course Drug Design and Development from 3 to 6. The curriculum and syllabi of all the above-mentioned courses have been developed and/or revised accordingly (*please see the revised curriculum and syllabi in APPENDIXES I:Table 2 Course Distribution per Semester and II:Syllabi, respectively).*

Table 3: *List of the the basic pharmaceutical and patient-oriented courses*

Course	ECTS	Course Type
HEA200-English Medical Terminology and Literacy	6	Compulsory
PHA420-Evidence-Based Medicine and Critical Literature Assessment Skills	3	Compulsory
PHA435-Pharmacology III	6	Compulsory
PHA450-Pharmaceutical Care and Communication	6	Compulsory
Total ECTS	**21**	
PHA270-Pharmaceutical Regulatory Affairs	6	Elective
PHA280-Principles of Nuclear Pharmacy/Radiopharmaceuticals	6	Elective
PHA285-Nutrition and Disease	6	Elective
PHA290-Pharmacoepidemiology and Pharmacovigilance	6	Elective
Total ECTS	**24**	

2. The ECTS units allocated to the Thesis are low and it is recommended to be increased from 6 to 30 units and should be completed after the practical training. In certain cases, it would be advantageous for the students to integrate the thesis work with practical training, for example in hospital pharmacies or the pharmaceutical industry.

Response by EUC:

We align with the EEC that the number of ECTS units assigned to the Thesis is insufficient, hence the course ECTS units have now been increased in line with the recommendation from 6 to 30. The course has also been renamed as "PHA500-Integrated Master Thesis." The course will begin in the ninth semester and conclude at the end of the tenth semester. As a result, students will be able to combine their Thesis work with practical training that takes place in the tenth semester.The syllabus and Integrated Master Thesis Guide have been revised (*please see the revised syllabus and Thesis Guide in APPENDIXES III: Syllabus of Integrated Master Thesis and IV: Integrated Master Thesis Guide, respectively).*

3. The ECTS allocated to English (12) should be reduced substantially and the course should be focused on medical terminology and literature reading.

Response by EUC:

We are in favor of the EEC's recommendation that English courses should be allocated fewer ECTS and focus on medical terminology and literature reading. As a result, we have removed the two compulsory English courses (12 ECTS in total) and added the HEA200-English Medical Terminology and Literacy course (6 ECTS units) (*please see the revised curriculum and syllabi in APPENDIXES I:Table 2 Course Distribution per Semester and II:Syllabi, respectively).*

4. In order to justify the integrated Master degree, a number of basic pharmaceutical subjects should be at a very high level and include all the recent scientific findings on the subject.

Response by EUC:

In addressing the EEC insightful recommendation we have now updated the Program's curriculum which leads to EQF level 7 learning outcomes (EU Recommendation 2008/C 111/01; https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008H0506(01)&from=EN), and warrants the award of a Pharmacy (Integrated Master) degree, as follows:

• The establishment of a 30 ECTS Master's thesis (PHA500-Integrated Master Thesis), which offers students the opportunity to study, interpret and critically report recent scientific findings in the field of Pharmacy, and to generate new knowledge through conducting primary research.

• The development of the following new practical laboratory courses, which promote active engagement in some of the basic pharmaceutical subjects: Pharmacology (PHA330, PHA405, PHA435) & PHA300-Biopharmaceutics and Pharmacokinetics. The integration of theory and lab work requires intellectual rigor and makes learning and teaching more challenging, fostering all the while knowledge scaffolding and the acquisition of specialised professional skills.

• The offering of the following compulsory courses that go beyond the typical Pharmacy textbooks, thus training students in becoming capable of using state-of-the-art scientific evidence and professional responsibility in their day-to-day practice: PHA420-Evidence-based Medicine and Critical Literature Assessment Skills, PHA450-Pharmaceutical Care and Communication, and the two courses PHA430 / PHA445-Law & Ethics in Pharmacy.

• The introduction of basic concepts of Biopharmaceutical analysis, TDM, Bioanalysis for personalized medicine and biomarker analysis have been added as part of the curriculum of the course PHA400-Pharmaceutical Analysis and Quality Control II.

Thus, the revised curriculum offers a variety of experience-based learning opportunities, which are designed to develop the knowledge, skills, and professional attitude of our students to a level that is compatible with the award of an integrated Master's degree (*please see the revised syllabi in APPENDIX II:Syllabi).*

5. The number of elective subjects should be increased and diversified to include for example, radiopharmacy, hospital pharmacy, Therapeutic Drug Monitoring (TDM) and regulatory affairs (e.g. GxP Standards).

Response by EUC:

We have adressed the suggestion of the EEC to increase the number of elective subjects as follows: a. the number of elective courses has been increased from two to four; b. we have expanded the list of elective courses from four to seven. PHA270-Pharmaceutical Regulatory Affairs, PHA280-Principles of Nuclear Pharmacy/Radiopharmaceuticals, PHA285-Nutrition and Disease, and PHA290-Pharmacoepidemiology and Pharmacovigilance are among the newly included elective courses. The syllabi of all the above-mentioned elective courses have been created (*please see the revised curriculum and syllabi in APPENDIXES I:Table 2 Course Distribution per Semester and II:Syllabi, respectively).*

6. The proportion of pharmacists in the teaching staff should be substantially increased in order to meet the recommendations for the Programme mentioned above.

Response by EUC:

In response to the EEC's critical recommendation to substantially increase the proportion of pharmacists in the teaching staff, the Department is recruiting two new faculty members in the disciplines of Pharmaceutical Technology, and Pharmacy with orientation in Clinical Pharmacy and/or Pharmaceutical care and/or Pharmacology. The two new faculty members will help meet the needs of the revised curriculum. The positions are currently open for candidates' applications (deadline for submission of applications: 31st of March 2022). The URLs for the positions can be found below:

Pharmaceutical Technology:

https://galileo.wd3.myworkdayjobs.com/en-US/european_university_cyprus_career_site/job/Engomi/Academic-position--Pharmaceutical-Technology--Lecturer-or-Assistant-Professor-_R-03060-1

Pharmacy:

https://galileo.wd3.myworkdayjobs.com/en-US/european_university_cyprus_career_site/job/Engomi/Academic-position-in-Pharmacy--Any-Rank-_R-08788

7. The practical laboratory work in certain pharmaceutical subjects such as biopharmaceutics/pharmacokinetics and pharmacodynamics should be strengthened. The industrial pharmacy edge in pharmaceutical technology (e.g. pharmaceutical processing and dosage form design) courses should be further strengthened as well.

Response by EUC:

We agree with the EEC that practical laboratory work in certain pharmaceutical subjects should be strengthened. Thus, the practical laboratory aspects of PHA300-Biopharmaceutics/Pharmacokinetics and Pharmacodynamics have been strengthened in the following ways:

- For PHA300-Biopharmaceutics and Pharmacokinetics, additional laboratory sessions have been added to the course. For Biopharmaceutics, these include wet-lab practicals for the quantification of partition co-efficient values, as well as dissolution testing sessions for comparing the performance of different oral dosage forms. For Pharmacokinetics, the extensive compartmental modelling work that is already taking place in EUC has been complemented by training in computational ADME, using tools that have been developed by the Swiss Institute of Bioinformatics.
- For Pharmacodynamics, EUC is investing in a refurbished cell harvester, which will now onwards be used to teach the basic principles of the discipline, in a hands-on manner. Practical courses that allow students to actively engage with the concepts of drug-receptor interaction and drug mode of action have now been included in the Pharmacology curriculum. In the lab practical's of PHA330-Pharmacology I & PHA405-Pharmacology II, students will now perform equilibrium binding, association kinetics, and functional, cell-based studies. In PHA435-Pharmacology III, students will now be asked to apply this knowledge in designing experiments

for drug discrimination & drug screening purposes (*please see the revised syllabi in APPENDIX II:Syllabi).*

With regards to Pharmaceutical Technology courses, additional content has been added to strengthen the industrial Pharmacy edge. In more particular:

- The introductory lectures of PHA315-Pharmaceutical Technology I now provides basic theoretical knowledge on the design and operation of pharmaceutical industry. Furthermore, the design and manufacturing process of drug dosage forms, as well as drug development issues (i.e., biopharmaceutical, therapeutic and other aspects of dosage form design) has been included. Moreover, the stages of pre-formulation, prototype development, scale up studies, as well as process optimization and validation via Design of experiments, Quality by Design and statistical analysis (e.g., ANOVA, Plackett-Burman, first-order designs etc.) has been introduced. Finally, the production and product licenses and intellectual property-patents are now pointed out.
- In PHA340-Pharmaceutical Technology II, which aims to broaden the knowledge of students on liquid (sterile/ non-sterile) and semisolid dosage forms, the additional content of GMP regulations for pharmaceutical products, as well as the design and implementation of clean rooms in Pharmacy Industry, will now allow students to better understand the industrial pharmaceutical manufacturing processes. Moreover, programmed visits to pharmaceutical industries are now palnned, thus familiarizing students with industrial units and manufacturing processes of the pharmacy industry.
- Additionally, more laboratory exercises have been added to Pharmaceutical Technology labs I and II, i.e.:
  - Preparation of effervescent granules and in-vitro disintegration analysis.
  - Preparation of lozenges and in-vitro disintegration analysis.
  - Preparation and quality control of ointments.
  - Preparation of suppositories and melting point determination.
  - Preparation of ophthalmic ointments and gels and measurement of spreadability.
- Visits to Pharmaceutical Industries will aim to supplement students' knowledge about the Design - Manufacture - Control - Distribution of the Drug, since the practical exercises performed during Laboratory sessions will now be seen on industrial scale. In addition, students will now be introduced to processes such as lyophilization, sterilization, packaging, or distribution in Pharmaceutical Industrial Units.

Finanlly, additional bibliography has been incorporated to support the new content focused on Pharmacy Industry edge:

- Αυγουστάκης Κ. (2018). Φαρμακευτική Τεχνολογία-Βιομηχανική Φαρμακευτική, Τόμος Ι, Εκδόσεις Πανεπιστημίου Πατρών
- Aulton, M. E., & Taylor, K. Επιμέλεια: Καχριμάνης Κ., Νικολακάκης Ι., Aulton Φαρμακευτική: Σχεδιασμός και Παρασκευή Φαρμάκων, Εκδόσεις Παρισιάνου Α.Ε. (Τελευταία έκδοση)
- Aulton, M. E., & Taylor, K. (2013). Aulton's pharmaceutics: The design and manufacture of medicines. Edinburgh: Churchill Livingstone/Elsevier.(4th edition)
- Allen L.V. Jr., Popovich N. G., Ansel H.C., (2011). Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems. Lippincott Williams & Wilkins (9th edition)
- Williams R.O III, Watts Alan B., Miller Dave A. (2012). Formulating Poorly Water Soluble Drugs. AAPS Advances in the Pharmaceutical Sciences Series book series, Springer (2nd Edition)

- Durivage M.A. (2016). The Certified Pharmaceutical GMP Professional Handbook. Quality Press (2nd Edition)
- Gaisford S., Saunders M. (2013) Essentials of Pharmaceutical Preformulation. Wiley-Blackwell

(*please see the revised syllabi in APPENDIX II:Syllabi).*

8. It is recommended that fewer ECTS are allocated to Pharmacognosy.

Response by EUC:

In addressing the EEC recommendation, Pharmacognosy ECTS units have been decreased from 12 to 9, as proposed. As a result, the PHA240-Pharmacognosy I (3 ECTS) and PHA345-Pharmacognosy II (6 ECTS) syllabi have been updated accordingly (*please see the revised curriculum and syllabi in APPENDIXES I:Table 2 Course Distribution per Semester and II:Syllabi, respectively).*

9. According to students' comments the Pharmacology course should be expanded to 3 semesters (Pharmacology I, II, III), which will facilitate the material comprehension by the students. It is recommended that the Pharmacy Law and Ethics course is split into two courses and more ECTS are allocated to these two courses.

Response by EUC:

As recommended by our students and the EEC, Pharmacology courses have been separated into three sections [PHA330-Pharmacology I (6 ECTS), PHA405-Pharmacology II (6 ECTS), and PHA435-Pharmacology III (6 ECTS)], to enable students to better comprehend the subject. *Appendix II:Syllabi* contains the syllabi for the three new courses. In addition, Pharmacy Law and Ethics course has been split into two courses, PHA430-Law & Ethics in Pharmacy I and PHA445-Law & Ethics in Pharmacy II, thus more ECTS have been allocated to this specific domain. These courses have now incorporated a case-based learning component in order to meet the learning needs of our students.

10. ECTS allocated to the practical training should be reduced to 30. However, at the same time this course should be substantially modified. Firstly, the students need to receive structured assignments relevant to the practical training and that are monitored and assessed by the appropriate faculty staff. Secondly, the preceptors at the pharmacies should be selected and adequately prepared by the university staff to undertake the training of the students.

Response by EUC:

We agree with the EEC that the number of ECTS assigned to practical training should be reduced. Therefore, the practical training has been reduced from 60 to 30 ECTS as recommended, and will now take place in the tenth semester for a total period of 6 calendar months (PHA530-Practical training (30 ECTS)). Students will now be required to inform the Pharmacy Board (or the competent authority of the country where the practical training will take place, in which case, students must abide by the country's laws) prior to the beginning of their practical training or part of it. More specifically, prior to the beginning of the practical training, students must complete the

corresponding document for Commencement of Practical Training and submit it to the Pharmacy Board. If the practical training begins without the board's notification, it shall not be considered valid. Trainees will be supervised by the competent pharmacist and a qualified academic supervisor of European University Cyprus. In response to the EEC's critical recommendation to significantly modify this course in order to provide students with fulfilling practical training, the Department is recruiting an academic supervisor to meet the needs of the revised curriculum. The position is currently open for candidates' applications (deadline for submission of applications: 31st of March 2022). The URL for the position is:

https://euc.ac.cy/el/school-of-sciences-academic-supervisor-feb22/?_gl=1*1pn4tjo*_up*MQ..&gclid=CjwKCAiAgvKQBhBbEiwAaPQw3NDWoHNQaQrnPTPld4wsAqy0fFyAi5pyGePECRhZcqcHhXqldlC3uxoCkCIQAvD_BwE

This person will be a practising pharmacist, who will have the duty to guide, assist and mentor the students during their practical training. The supervisor's purpose is to enhance the students' practical skills. In consultation with each basic pharmaceutical and patient-oriented course instructor, he/she will give structured assignments relevant to the practical training to all the students beyond their face-to-face practical training. In order to ensure that students will perform their practical training in a guided and recorded manner, a Laboratory Calendar/Log has been developed. This Calendar will be evaluated by the academic supervisor every three months (*please see the revised practical training guide in APPENDIX V: Practical Training Guide).*

The competent pharmacist at the pharmacy where the student chooses to conduct his/her practical training must fulfill the following criteria:

- have at least three years of experience
- have no relation to the trainee (kinship, marriage, financial interests etc)
- be included in the list approved by the Competent Authority
- train only one student at a time

Moreover, the university staff will adequately prepare the preceptors in order to be ready to conduct student training. This will be accomplished through seminars, which will be held at European University Cyprus (in a hybrid mode, in order for pharmacists abroad to be able to participate). Additional information about preceptor training can be found in *APPENDIX V: Practical Training Guide*.

11. The equipment for the pharmaceutical analysis lab should be completed with the acquisition of LC-MS/MS (Liquid chromatography-mass spectrometer) equipment.

Response by EUC:

The Pharmaceutical Chemistry and Analysis Laboratory is currently well-equipped to train Pharmacy students in modern instrumental methods, such as HPLC, Potentiometry, UV-Vis and IR Spectroscopy, Polarimetry, Flame Photometry, and Fluorometry. Although the acquisition of LC-MS/MS (Liquid chromatography- tandem mass spectrometer) equipment would offer exceptional capabilities to the Pharmacy Programme and to the Department as well, we feel that the learning outcomes of the relevant courses are already achieved via the existing equipment.

12. Textbook recommendations and other resources include: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, Harrison's Principles of Internal Medicine, Micromedex, The British National Formulary, Pharmacokinetics by Milo Gibaldi and Donald Perrier, Rowland and Tozer's Clinical Pharmacokinetics and Pharmacodynamics: Concepts and Applications.

Response by EUC:

As recommended by the EEC, we have revised the literature list of some courses and included the recommended textbooks and other resources. For example the textbooks «Lippincott Illustrated Reviews: Pharmacology» and «Rang & Dale's Pharmacology» are now listed in PHA330-Pharmacology's I, PHA405-Pharmacology's II, and PHA435-Pharmacology's III bibliography; «Harrison's Principles of Internal Medicine» is now listed in PHA440-Clinical Pharmacy and Therapeutics' bibliography; «Micromedex» is now listed in PHA420-Evidence-Based Medicine and Critical Literature Assessment Skills' bibliography; «The British National Formulary» is now listed in PHA440-Clinical Pharmacy and Therapeutics' and PHA450-Pharmaceutical Care; and Communication's bibliography and «Rowland and Tozer's Clinical Pharmacokinetics and Pharmacodynamics: Concepts and Applications» is now listed in PHA300-Biopharmaceutics and Pharmacokinetics' bibliography (*please see the revised syllabi in APPENDIX II:Syllabi).*

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

The EEC has raised the following issues. The response for issue is shown below each point that is raised.

Comments by the EEC:

Areas of improvement and recommendations

1. More time should be allocated for skills development during the practical training.

2. The students need to receive structured assignments relevant to the practical training and that are monitored and assessed by the appropriate faculty staff.

3. The preceptors at the pharmacies should be selected and adequately prepared by the university staff to undertake the training of the students.

4. The teaching staff member in charge of the practical training should be a pharmacist.

5. The university should address the issue of non-Greek speaking students with regard to the practical training at the final year of the Programme.

Response by EUC:

We thank the ECC committee for their valuable comments regarding Practical Training. We kindly inform the EEC that points (1) - (5) have been addressed together as they pertain to the same line of recommendation.

In response to the EEC's recommendation to allocate more time for skills development during practical training in order to provide students with fulfilling training, the Department is recruiting an academic supervisor to meet the needs of the revised curriculum. The position is currently open for candidates' applications (*please see link listed in page 9, point 10*).

This person will be a practising pharmacist, who will have the duty to guide, assist and mentor the students during their practical training. The supervisor's purpose is to enhance the students' practical skills. In consultation with each basic pharmaceutical and patient-oriented course instructor, the dedicated practical training supervisor will provide students with structured assignments that are directly relevant to the practice of Pharmacy. In order to ensure that students perform their practical training in a guided and accountable manner, a Laboratory Calendar/Log has been developed. This Calendar will be evaluated by the practising pharmacist every three months (*please see the revised practical training guide in APPENDIX V: Practical Training Guide).*

The competent pharmacist at the pharmacy where the student chooses to conduct his/her practical training must fulfil the following criteria:

- have at least three years of experience
- have no relation to the trainee (kinship, marriage, financial interests etc)
- be included in the list approved by the Competent Authority
- train only one student at a time

Moreover, the university staff will adequately prepare the preceptor pharmacists to conduct student training. This will be accomplished through seminars, which will be held at European University Cyprus (in a hybrid mode, in order for pharmacists abroad to be able to participate). Additional information about preceptor training can be found in *APPENDIX V: Practical Training Guide.*

It is expected that the majority of foreign students will decide to do their practical training in their home countries, and this has always been achieved via establishment of agreements with pharmacies and hospitals in these countries and the use of the Erasmus+ mobility scheme. In addition, non-Greek speaking students that decide to do their practical training in Cyprus, register to the courses Greek as Second|Foreign Language [A1, A2, B1, B2] offered by the Language Centre of European University Cyprus to develop language skills necessary for this endeavour. This is an innovative and unique program in Cyprus and Greece catering to the needs of adult learners of Greek, as it is offered fully via e-learning with an emphasis on asynchronous learning taking full advantage of e-learning methodology, using original materials designed specifically for the needs of this particular group of learners, and is offered free of charge for students in programs of study like Medicine, Dentistry, Health and related sciences to prepare these students for their practicum in Cyprus. It offers adult learners the opportunity to gain knowledge of general Greek and thus prepare for the state exams for language certification, as well as knowledge of discipline specific vocabulary and communication in relevant situations. Parts of the program are continusly adapted to suit the needs of more specific health related sciencs students, e.g. the Pharmacy students. Additional information about the Greek Second|Foreign Language courses can be found in *APPENDIX VI: Additional information about the Greek Second|Foreign Language courses*.

6. Students should have a thorough and in-depth clinical knowledge base and understanding of pharmaceutical care prior to entering practical training, as mentioned above.

Response by EUC:

As mentioned in page 3, point 1 of EUC response in this documemnt, we have considerably increased the ECTS allocated to basic pharmaceutical and patient-oriented courses. Specifically we have i) added the compulsory courses of HEA200-English Medical Terminology and Literacy, PHA420-Evidence-Based Medicine and Critical Literature Assessment Skills, PHA435-Pharmacology III, and PHA450-Pharmaceutical Care and Communication ii) added the elective courses of PHA270-Pharmaceutical Regulatory Affairs, PHA280-Principles of Nuclear Pharmacy/Radiopharmaceuticals, PHA285-Nutrition and Disease, and PHA290-Pharmacoepidemiology and Pharmacovigilance, and iii) increased the ECTS units of the course Drug Design and Development from 3 to 6. The syllabi of all the above-mentioned courses have been created and/or revised accordingly (*please see the revised syllabi in APPENDIX II:Syllabi).*

7. In order to actively involve students in research and justify an integrated Master degree, the number of ECTS of the Thesis should be 30.

Response by EUC:

The number of ECTS units assigned to the Thesis has been increased from 6 to 30, as detailed in page 4, EUC response point 2 in this document. The course has also been renamed as "PHA500-Integrated Master Thesis." The course will begin in the ninth semester and conclude at the end of the tenth semester. It has also been designed in a way that students will be able to combine their thesis work with practical training. The syllabi and Integrated Master Thesis Guide have been

revised accordinlgy (*please see the revised syllabus and Thesis Guide in APPENDIXES III: Syllabus of Integrated Master Thesis and IV: Integrated Master Thesis Guide, respectively).*

3. Teaching staff
(ESG 1.5)

The EEC has raised the following issues. The response for issue is shown below each point that is raised.

1. The proportion of pharmacists in the faculty should be substantially increased. It would be advantageous for the Programme quality that all major pharmaceutical subjects (e.g. pharmacology, pharmaceutical technology, pharmaceutical analysis) should be taught by staff possessing at minimum a degree in Pharmacy.

Response by EUC:

As stated on page 6, EUC response 6, the Department is recruiting two new faculty members in the disciplines of Pharmaceutical Technology, and Pharmacy with orientation in Clinical Pharmacy and/or Pharmaceutical care and/or Pharmacology, in response to the EEC's critical recommendation to substantially increase the proportion of pharmacists in the teaching staff. As mentioned above, the positions are currently open for candidates' applications.

4. Student admission, progression, recognition and certification

(ESG 1.4)

The EEC has raised the following issues. The response for the issue is shown below each point that is raised.

1. The Thesis needs to be expanded in allotted ECTS in order to correspond to internationally recognized and accepted standards.

Response by EUC:

The number of ECTS units assigned to the Thesis has been increased from 6 to 30, as previously stated (*please see page 4, response 2 in this document*). The course has also been renamed as "PHA500-Integrated Master Thesis." The course will begin in the ninth semester and conclude at the end of the tenth semester. As a result, students will be able to combine their thesis work with practical training that takes place in the tenth semester. The syllabi and Integrated Master Thesis Guide have been revised (*please see the revised syllabus and Thesis Guide in APPENDIXES III: Syllabus of Integrated Master Thesis and IV: Integrated Master Thesis Guide, respectively)*.

5. Learning resources and student support

(ESG 1.6)

The EEC has raised the following issues. The response for issue is shown below each point that is raised.

1. The capacity of cutting-edge research could be further strengthened with the availability of core facilities such as modern analytical equipment (HPLC-MS/MS), solid state NMR, and electronic microscopes.

Response by EUC:

The Pharmaceutical Chemistry and Analysis Laboratory is well-equipped to train Pharmacy students in modern instrumental methods such as HPLC, Potentiometry, UV-Vis and IR Spectroscopy, Polarimetry, Flame Photometry, and Fluorometry. Although the acquisition of LC-MS/MS (Liquid chromatography- tandem mass spectrometer) equipment would offer further capabilities to the Pharmacy Programme, we feel that the learning outcomes of the relevant courses are already achieved via the existing equipment.

The Biopharmacy and Pharmaceutical Technology Lab is suitably equipped to facilitate the training of Pharmacy students in Biopharmacy, Compounding Pharmacy as well as in pilot-scale industrial drug manufacturing. The infrastructure includes apparatuses for granulation, sieving drying and capsule preparation, Rotary tableting machine, equipment for mixing solids, semisolids and liquids, apparatus for the preparation of suppositories, homogenizer, among others. Even though electron microscopy would be a valuable tool in modern pharmaceutical technology, we feel that the learning outcomes of the relevant courses are already achieved via the existing equipment.

Solid-state NMR spectroscopy is a non-disruptive and non-invasive method of analyzing a variety of pharmaceutical materials. The obtained molecular properties at macroscopic and microscopic scales provide important information about the physiochemical stability of drug substances and drug products. This technic is well suited for characterization of multicomponent solids, providing insight into the formulation process and composition, and investigating structural attributes for drug delivery. Alternatively, we believe that a liquid state NMR will be of better use to the Programme as well as other Programmes of the Department.The instrument will be used for conducting laboratory exercises of the PHA135-Inorganic Pharmaceutical Chemistry, PHA205-Organic Chemistry II, and PHA335-Pharmaceutical Chemistry II courses. We have included this cost in this year' s School budget and we will make the purchase of the above-mentioned instrument during the coming 2022–2023 academic year.

6. Additional for doctoral programmes
(ALL ESG)

N/A

7. Eligibility (Joint programme)

(ALL ESG)

N/A

B. Conclusions and final remarks

Comments by EEC:

The EEC after careful evaluation of the material presented to it by the university, the site visit, the discussion with the teaching staff and the students has arrived at the following main conclusions and recommendations which would, in the opinion of the EEC, contribute to the improvement of the evaluated Programme.

- It is our opinion that a disproportionate amount of ECTS is allocated to basic foundation courses, entry-level mathematics, physics, chemistry and biology.
- The emphasis on the philosophy of the profession of Pharmacy needs to be strengthened.
- The curriculum should be further strengthened into clinical aspects of Pharmacy and the Pharmaceutical Care course should become compulsory.
- The ECTS allocated to the Thesis should be increased to 30 units.
- The practical training in the final year should be 30 ECTS, should be better structured and organised and the students' assignments should prospectively be more clearly defined. Also, the practical training should be organised and supervised by staff members who are pharmacists.
- The proportion of pharmacists in the teaching staff should be substantially increased and the basic pharmaceutical subjects of the Programme should be taught by staff possessing a Pharmacy degree.
- Various recommendations regarding the content of courses have been made by the EEC in the specific chapters above which need to be addressed in order to adequately and effectively comply with the evolution of the profession of Pharmacy.

Response by EUC:

We would like to sincerely thank the EEC for the positive feedback and its constructive recommendations. As described in the previous sections of the report, the Programme of Pharmacy made a focused effort to address each of the EEC's recommendations. We believe that these actions enhance our Programme's quality, which builds on our strengths and our readiness to implement the Programme in an attractive, student-friendly environment.

We briefly summarize some of the major adaptations that have been described in more depth above. According to the suggestions by the EEC, we have now:

- Revised the curriculum by reducing the ECTS units of the introductory courses in favor of the basic pharmaceutical subjects and patient-oriented courses. The curriculum has been reduced by 33 ECTS units for introductory courses, while 27 ECTS units for basic pharmaceutical and patient-oriented courses have been added *(please see page 3, response 1).*

- Revised many of our courses' syllabi to provide further emphasis on basic pharmaceutical and patient-oriented subjects. *(please see page 5, response 4).*

- Increased the Thesis's ECTS units from 6 to 30. In addition, the course has been renamed as "PHA500-Integrated Master Thesis," and the syllabi and Integrated Master Thesis Guide have been updated. *(please see page 4, response 2).*

- Reduced the number of ECTS units allotted to English courses. Only one English course, focusing on medical terminology and literature reading, is included in the new curriculum. *(please see page 4, response 3).*

- Increased the number of elective courses from two to four. In addition, we have increased the number of available elective courses from four to seven. *(please see page 5, response 5).*

- Announced vacancies for the employment of two faculty members in the disciplines of Pharmaceutical Technology and Pharmacy, with orientation in Clinical Pharmacy and/or Pharmaceutical Care and/or Pharmacology, in order to increase the proportion of pharmacists in the teaching staff. *(please see page 6, response 6).*

- Announced a vacancy for the employment of an academic supervisor who will be assigned to supervise students during their practical training. In addition, he/she will also assign tasks related to further enhancing and developing students' practical skills in collaboration with each Programme faculty and the competent pharmacists. *(please see page 9, response 10).*

- Provisioned the cost of a liquid state NMR in this year' s School budget. *(please see page 14, response 1).*

To conclude, we would like to say that the Programme of Pharmacy found the EEC's candid discussions a constructive learning process. We all believe that this review was a positive experience and that we were provided with critical input on how to move forward. We have thoroughly reviewed the findings, strengths, and areas of improvement indicated by the EEC following its review, and attempted to respond to each item precisely and succinctly. By embracing the EEC's comments and suggestions, we are convinced that our programme will effectively ensure its students' learning outcomes. In this regard, we are grateful to the EEC for their candid discussions regarding our programme and the insightful comments and suggestions throughout their report.

C. Higher Education Institution academic representatives

Name	*Position*	*Signature*
Dr. Eleni Moushi	Program Coordinator	
Dr. Anastasios Theodorou	Chairperson, Department of Life Sciences	
Dr. Panagiotis Papageorgis	Dean, School of Sciences	

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