

Doc. 300.1.1/2

Date: Date.

External Evaluation Report (E-learning programme of study)

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

In Greek:

Μεταπτυχιακό Πρόγραμμα Σπουδών Αειφόρος
Μηχανική Περιβάλλοντος (1.5-6 έτη, MSc: 90 ECTS)

In English:

Master of Science in Sustainable Environmental
Engineering (1.5-6 years, MSc: 90 ECTS)

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

In Greek: Concentrations

In English: Concentrations



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

A. Introduction

This part includes basic information regarding the onsite visit.

The present report is prepared for the evaluation of MSc program in Sustainable Environmental Engineering, at the Faculty of Pure and Applied Sciences, Open University of Cyprus (OUC), Nicosia.

The Members of the External Evaluation Committee (EEC) have analysed a large number of materials related to the program: the detailed application report of the OUC including program description, its structure, the profiles of the teaching staff, course descriptions, evaluation and admission procedures, e-learning procedures, available infrastructure, various online materials and information.

The Committee visited the University on January 29, 2024, and held the meetings with the Rector of the Open University of Cyprus, the Vice Rector and Chair of the Internal Evaluation Committee, members of the Internal Evaluation Committee, representatives of the Quality Assurance Office, the Dean of the Faculty of Pure and Applied Sciences, the Academic Coordinator of the program under evaluation, the Head of the OUC Academic Affairs and Student Welfare Services, the teaching staff, members of the Lab of Educational Material and Methodology and the E-learning and Digital Content Management Sector, representative of the OUC library, students representing existing PhD and MSc programs. All the meetings were accompanied by intensive and open discussions of all the relevant topics. During the exit discussion, the Academic Coordinator of the programme had the opportunity to clarify additional questions that came up in the evaluation process.

The following report has been compiled on the basis of the provided documents and presentations as well as of the open exchange of the opinions among EEC members during the visit to the University. The Committee believes that the report is unbiased and constructive. Our goal has been to give an objective evaluation of the program and to provide an external view on the possible ways of its further development.

B. External Evaluation Committee (EEC)

<i>Name</i>	<i>Position</i>	<i>University</i>
Dr. Konstantinos Noutsopoulos	Professor	National Technical University of Athens
Dr. Santi Caballé	Professor	Open University of Catalonia
Dr. Jens Abildskov	Associate Professor	Technical University of Denmark
Dr. Waheed Afzal	Senior Lecturer	University of Aberdeen
Mr. Panagiotis Chrysanthou	Student	University of Cyprus

C. Guidelines on content and structure of the report

- *The external evaluation report follows the structure of assessment areas.*
- *At the beginning of each assessment area there is a box presenting:*
 - (a) sub-areas*
 - (b) standards which are relevant to the European Standards and Guidelines (ESG)*
 - (c) some questions that EEC may find useful.*
- *The questions aim at facilitating the understanding of each assessment area and at illustrating the range of topics covered by the standards.*
- *Under each assessment area, it is important to provide information regarding the compliance with the requirements of each sub-area. In particular, the following must be included:*

Findings

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

Strengths

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

Areas of improvement and recommendations

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

- *The EEC should state the compliance for each sub-area (Non-compliant, Partially compliant, Compliant), which must be in agreement with everything stated in the report. It is pointed out that, in the case of standards that cannot be applied due to the status of the HEI and/or of the programme of study, N/A (= Not Applicable) should be noted.*
- *The EEC should state the conclusions and final remarks regarding the programme of study as a whole.*
- **The report may also address other issues which the EEC finds relevant.**

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

Sub-areas

- 1.1 Policy for quality assurance
- 1.2 Design, approval, on-going monitoring and review
- 1.3 Public information
- 1.4 Information management

1.1 Policy for quality assurance

Standards

- *Policy for quality assurance of the programme of study:*
 - *has a formal status and is publicly available*
 - *supports the organisation of the quality assurance system through appropriate structures, regulations and processes*
 - *supports teaching, administrative staff and students to take on their responsibilities in quality assurance*
 - *ensures academic integrity and freedom and is vigilant against academic fraud*
 - *guards against intolerance of any kind or discrimination against the students or staff*
 - *supports the involvement of external stakeholders*

1.2 Design, approval, on-going monitoring and review

Standards

- *The programme of study:*
 - *is designed with overall programme objectives that are in line with the institutional strategy and have explicit intended learning outcomes*
 - *is designed by involving students and other stakeholders*
 - *benefits from external expertise*
 - *reflects the four purposes of higher education of the Council of Europe (preparation for sustainable employment, personal development, preparation for life as active citizens in democratic societies, the development and maintenance, through teaching, learning and research, of a broad, advanced knowledge base)*
 - *is designed so that it enables smooth student progression*
 - *is designed so that the exams' and assignments' content corresponds to the level of the programme and the number of ECTS*
 - *defines the expected student workload in ECTS*
 - *includes well-structured placement opportunities where appropriate*
 - *is subject to a formal institutional approval process*

- *results in a qualification that is clearly specified and communicated, and refers to the correct level of the National Qualifications Framework for Higher Education and, consequently, to the Framework for Qualifications of the European Higher Education Area*
- *is regularly monitored in the light of the latest research in the given discipline, thus ensuring that the programme is up-to-date*
- *is periodically reviewed so that it takes into account the changing needs of society, the students' workload, progression and completion, the effectiveness of procedures for assessment of students, student expectations, needs and satisfaction in relation to the programme*
- *is reviewed and revised regularly involving students and other stakeholders*

1.3 Public information

Standards

- *Regarding the programme of study, clear, accurate, up-to date and readily accessible information is published about:*
 - *selection criteria*
 - *intended learning outcomes*
 - *qualification awarded*
 - *teaching, learning and assessment procedures*
 - *pass rates*
 - *learning opportunities available to the students*
 - *graduate employment information*

1.4 Information management

Standards

- *Information for the effective management of the programme of study is collected, monitored and analysed:*
 - *key performance indicators*
 - *profile of the student population*
 - *student progression, success and drop-out rates*
 - *students' satisfaction with their programmes*
 - *learning resources and student support available*
 - *career paths of graduates*
- *Students and staff are involved in providing and analysing information and planning follow-up activities.*

You may also consider the following questions:

- *What is the procedure for quality assurance of the programme and who is involved?*
- *Who is involved in the study programme's design and development (launching, changing, internal evaluation) and what is taken into account (strategies, the needs of society, etc.)?*
- *How/to what extent are students themselves involved in the development of the content of their studies?*
- *Please evaluate a) whether the study programme remains current and consistent with developments in society (labour market, digital technologies, etc.), and b) whether the content and objectives of the study programme are in accordance with each other?*
- *Do the content and the delivery of the programme correspond to the European Qualifications Framework (EQF)?*
- *How is coherence of the study programme ensured, i.e., logical sequence and coherence of courses? How are substantial overlaps between courses avoided? How is it ensured that the teaching staff is aware of the content and outputs of their colleagues' work within the same study programme?*
- *How does the study programme support development of the learners' general competencies (including digital literacy, foreign language skills, entrepreneurship, communication and teamwork skills)?*
- *What are the scope and objectives of the foundation courses in the study programme (where appropriate)? What are the pass rates?*
- *How long does it take a student on average to graduate? Is the graduation rate for the study programme analogous to other European programmes with similar content? What is the pass rate per course/semester?*
- ***How is it ensured that the actual student workload is in accordance with the workload expressed by ECTS?***
- *What are the opportunities for international students to participate in the study programme (courses/modules taught in a foreign language)?*
- *Is information related to the programme of study publicly available?*
- *How is the HEI evaluating the success of its graduates in the labor market? What is the feedback from graduates of the study programme on their employment and/or continuation of studies?*
- *Have the results of student feedback been analysed and taken into account, and how (e.g., when planning in-service training for the teaching staff)?*
- *What are the reasons for dropping out (voluntary withdrawal)? What has been done to reduce the number of such students?*

Findings

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

The EEC found that OUC has demonstrated a commitment to maintaining and enhancing the quality of its academic programs. The following assessment recognizes the University's compliance with key criteria along

with observations or recommendations where necessary in the context of the new MSc programme in Sustainable Environmental Engineering which will be offered after approval.

The University's policy for quality assurance is clearly formulated and is available to anyone who requests. We understand that the policy supports the organization of the quality assurance system through defined structures, regulations, and processes. The policy aims to uphold academic integrity and freedom but aims to guard against academic fraud, discrimination, and intolerance. The involvement of some external stakeholders is evident in the market study for graduates and for the design of courses.

The programme design process is consistent with the University's strategy and the four purposes of higher education outlined by the Council of Europe and adherence to the expected ESG standards. The University provides accessible information about its programme of study via website when we look the approved programmes.

The EEC anticipates that the information about the programme under review will also be published on the university website in terms of details on selection criteria, learning outcomes, qualifications, and expectations from the students to graduates, and other pertinent information.

OUC exhibits an acceptable approach to information management, collecting and analysing key performance indicators, student profiles, progression rates, satisfaction levels and other relevant data. The students and staff are involved in the process of providing and analysing information for the continuous improvement.

Strengths

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

- The University, being one of three public sector universities, has shown commitment to upholding standards for quality assurance, transparency, student support, and continuous improvement.
- The EEC appreciated the enthusiasm of OUC's staff and students as a coherent learning community.

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 recommends that the quality assurance policy be made available to the public via university website whenever the quality assurance manual that the university staff said that they are compiling will be finalised. Furthermore, the EEC anticipates that the programme details will be placed online once it's approved, while recommending to provide the information on the following aspects to the public via OUC's website: key performance indicators of the programme, student profiles in terms of their background qualifications and their experience to date, progression and pass/dropout rates, satisfaction levels, and other relevant data to support information flow and transparency.
- The EEC also recommends developing an advisory committee of stakeholders and employers of the graduates at Faculty level to inform design, review, and instruction.
- The Committee including an additional learning outcome of the programme on the lines: students should be able to communicate with their peers in appropriate ways and are able to work in groups. At least in one course of the programme, group work could be introduced.
- The EEC recommends expanding the variety of elective courses within the programme once it is offered and established in a few years. The selection and quantity of additional electives can be tailored based on factors such as the number of students, programme needs, and strengths of the curriculum.
- Based on the information in the University's application and subsequent evaluation meeting, the EEC encourages enhancing the nomenclature and place of the courses in the programme:

- ✓ More fundamental courses may be transferred in early semesters such as semester one and more applied courses can be transferred in the later semesters.
- ✓ More suggestive names of the courses may be used instead of long names. For example, SEE 522 Science, Engineering, Technological Applications of Materials, Production and Storage of Energy (10 ECTS) can be renamed either as Energy Materials or Sustainable Energy Engineering while updating the course contents accordingly.
- ✓ The subject of air pollution control seems to be missing. The EEC strongly recommends including it to the curriculum.
- ✓ The course SEE 611 Hydrocarbons Management and Engineering (10 ECTS) and its contents need to be revised to fit for purpose to the Sustainable Environmental Engineering discipline. Indicatively, it can be either converted into a Decarbonization of Fossil Fuels or Air Pollution from Fossil Fuels, etc.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>
1.1	Policy for quality assurance	Compliant
1.2	Design, approval, on-going monitoring and review	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
- 2.4 Study guides structure, content and interactive activities

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

Standards

- *The e-learning methodology is appropriate for the particular programme of study.*
- *Expected teleconferences for presentations, discussion and question-answer sessions, and guidance are set.*
- *A specific plan is developed to safeguard and assess the interaction:*
 - *among students*
 - *between students and teaching staff*
 - *between students and study guides/material of study*
- *Training, guidance and support are provided to the students focusing on interaction and the specificities of e-learning.*
- *The process of teaching and learning supports students' individual and social development.*
- *The process of teaching and learning is flexible, considers different modes of e-learning delivery, where appropriate, uses a variety of pedagogical methods and facilitates the achievement of planned learning outcomes.*
- *Students are encouraged to take an active role in creating the e-learning process.*
- *The implementation of student-centered learning and teaching encourages a sense of autonomy in the learner, while ensuring adequate guidance and support from the teacher.*
- *Teaching methods, tools and material used in teaching are modern, effective, support the use of modern educational technologies and are regularly updated.*
- *Mutual respect within the learner-teacher relationship is promoted.*
- *The implementation of student-centred learning and teaching respects and attends to the diversity of students and their needs, enabling flexible learning paths.*
- *Appropriate procedures for dealing with students' complaints regarding the process of teaching and learning are set.*

2.2 Practical training

Standards

- *Practical and theoretical studies are interconnected.*
- *The organisation and the content of practical training, if applicable, support achievement of planned learning outcomes and meet the needs of the stakeholders.*

2.3 Student assessment

Standards

- *A complete assessment framework is designed, focusing on e-learning methodology, including clearly defined evaluation criteria for student assignments and the final examination.*
- *Assessment is consistent, fairly applied to all students and carried out in accordance with the stated procedures.*
- *Assessment is appropriate, transparent, objective and supports the development of the learner.*
- *The criteria for the method of assessment, as well as criteria for marking, are published in advance.*
- *Assessment allows students to demonstrate the extent to which the intended learning outcomes have been achieved. Students are given feedback, which, if necessary, is linked to advice on the e-learning process.*
- *Assessment, where possible, is carried out by more than one examiner.*
- *A formal procedure for student appeals is in place.*
- *Assessors are familiar with existing testing and examination methods and receive support in developing their own skills in this field.*
- *The regulations for assessment take into account mitigating circumstances.*

2.4 Study guides structure, content and interactive activities

Standards

- *A study guide for each course, fully aligned with e-learning philosophy and methodology and the need for student interaction with the material is developed. The study guide should include, for each course week / module, the following:*
 - *Clearly defined objectives and expected learning outcomes of the programme, of the modules and activities in an organised and coherent manner*
 - *Presentation of course material, and students' activities on a weekly basis, in a variety of ways and means (e.g. printed material, electronic material, teleconferencing, multimedia)*
 - ***Weekly schedule of interactive activities and exercises (i.e. simulations, problem solving, scenarios, argumentation)***
 - *Clear instructions for creating posts, discussion, and feedback*
 - *Self-assessment exercises and self-correction guide*
 - *Bibliographic references and suggestions for further study*
 - *Number of assignments/papers and their topics, along with instructions and additional study material*
 - *Synopsis*
- *Study guides, material and activities are appropriate for the level of the programme according to the EQF.*

You may also consider the following questions:

- *Is the nature of the programme compatible with e-learning delivery?*
- *How do the programme, the material, the facilities, and the guidelines safeguard the interaction between students, students and teaching staff, students and the material?*
- *How many students upload their work and discuss it in the platform during the semester?*
- *How is it monitored that the teaching staff base their teaching and assessment methods on objectives and intended learning outcomes? Provide samples of examination papers (if available).*
- *How are students' different abilities, learning needs and learning opportunities taken into consideration when conducting educational activities?*
- *How is the development of students' general competencies (including digital skills) supported in educational activities?*
- *How is it ensured that innovative teaching methods, learning environments and learning aids that support learning are diverse and used in educational activities?*
- *Is the teaching staff using new technology in order to make the teaching process more effective?*
- *How is it ensured that theory and practice are interconnected in teaching and learning?*
- *How is practical training organised (finding practical training positions, guidelines for practical training, supervision, reporting, feedback, etc.)? What role does practical training have in achieving the objectives of the study programme? What is student feedback on the content and arrangement of practical training?*
- ***Are students actively involved in research? How is student involvement in research set up?***
- *How is supervision of student research papers (seminar papers, projects, theses, etc.) organised?*
- ***Do students' assessments correspond to the European Qualifications Framework (EQF)?***
- *How are the assessment methods chosen and to what extent do students get supportive feedback on their academic progress during their studies?*
- *How is the objectivity and relevance of student assessment ensured (assessment of the degree of achievement of the intended learning outcomes)?*

Findings

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

The nature of the programme is compatible with distance learning delivery. The methodology provided is appropriate for this particular programme of study.

The University's quality assurance is evaluated by external and voluntary accreditations, such as EDEN (European Distance and E-Learning Network) and EADTU (European Association of Distance Teaching Universities). Following these accreditations, OUC guarantees quality assurance of technology-enhanced learning, while fostering innovation and continuous improvement in line with the principles, recommendations and best practices of the European community of e-learning.

The University's learning management system supports online teaching, learning and administrative processes. This is a Moodle installation (eClass) with all the basic online services available. The platform

specifically provides synchronous (through Blackboard Collaborate), recorded video and streaming (through Panopto) as well as asynchronous tools to support the interaction needs of students with the lecturers, the other students and the teaching materials. The platform also provides e-assessment procedures through quizzes with automatic feedback in order to assess students' knowledge. The provision of more complex forms of e-assessment to assess competencies skills, such as critical thinking, was not shown in the specific assessment procedures during the meetings.

Each course has an adequate number of hours of synchronous communication between instructors and students through live teleconferences, which are recorded for those students unable to attend in real-time, though most students typically do. These sessions serve as summaries of lessons and above all for addressing questions, hence their duration is not predefined and can vary from 1 to 3 hours.

Collaboration among teachers and students (and among students) is conducted through the online forums of the subject and other forums that can be created ad-hoc for facing special needs. In addition, in-class collaborative activities among students are promoted during the teleconferences, even though the design and organisation of these group activities do not follow any established procedure.

Formative assessment of the courses is based on submitted assignments with the provision of personalised feedback counting to 30% of the final grade, while summative assessment is based on a mandatory online final exam counting to 60% of the final grade. The assessment procedure during the course is completed with a number of interactive activities with formative personalised feedback counting to the remaining 10% of the final grade. Optional formative self-assessment activities are included in the weekly study guides in order to self-assess student knowledge and skills of the course.

The University's Distance Learning unit (LEMM) produces in-house gamification mechanisms (powered by Unity) and Virtual Reality applications (included in a video for a module that can be reused for other purposes). They are intended to provide students with highly engaging experiences, though specific learning benefits of these innovative teaching technologies were not demonstrated during the meetings.

Strengths

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

- The EEC believes that continuously evaluating the quality assurance of distance learning by non-mandatory external accreditation organisations, such EDEN and EADTU, is a good practice.
- The EEC considers the University's distance learning model to be in line with the specific profile of full (20%) and part-time (80%) online students who have professional/familial responsibilities and commitments and need to learn effectively and in a timely fashion. The EEC would like to note that students will benefit from a very good student-teacher ratio.
- In line with the existing programmes, the provision of personalised feedback in the submitted assignments and during the teleconference sessions are considered best practices. In addition, the EEC recognises the many benefits of collaboration among students promoted by in-class collaborative activities and discussions as well as the provision of assessment based on rubrics.
- Finally, the weekly study guides, which allow the students to determine the work to be done every week, is also considered a best practice. The EEC urges the University to keep up these strong elements of its distance learning model while reinforcing them when possible.

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.

- While the EEC emphasises the benefits of any form of interaction and collaboration, the online synchronous teleconferences and real-time collaboration among students might be hard to scale if in future years the programme is expanded internationally and/or attended by many students across different time zones. It was not clear how the University would support this type of collaboration from the coordination perspective, while recommending the constant adaptation of their distance learning model to support this situation by increasing the asynchronous online interaction and collaboration.
- The EEC encourages the programme to enhance the practical training especially for full-time students.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>
2.1	Process of teaching and learning and student-centred teaching methodology	Compliant
2.2	Practical training	Compliant
2.3	Student assessment	Compliant
2.4	Study guides structure, content and interactive activities	Compliant

3. Teaching staff (ESG 1.5)

Sub-areas

3.1 Teaching staff recruitment and development

3.2 Teaching staff number and status

3.3 Synergies of teaching and research

3.1 Teaching staff recruitment and development

Standards

- *Institutions ensure the competence of their teaching staff.*
- *Fair, transparent and clear processes for the recruitment and development of the teaching staff are set up.*
- *Teaching staff qualifications are adequate to achieve the objectives and planned learning outcomes of the study programme, and to ensure quality and sustainability of the teaching and learning.*
- *The teaching staff is regularly engaged in professional and teaching-skills training and development.*
- *Training, guidance and support are provided to the teaching staff focusing on interaction and the specificities of e-learning.*
- *Promotion of the teaching staff takes into account the quality of their teaching, their research activity, the development of their teaching skills and their mobility.*
- *Innovation in teaching methods and the use of new technologies is encouraged.*
- *Conditions of employment that recognise the importance of teaching are followed.*
- *Recognised visiting teaching staff participates in teaching the study programme.*

3.2 Teaching staff number and status

Standards

- *The number of the teaching staff is adequate to support the programme of study.*
- *The teaching staff status (rank, full/part time) is appropriate to offer a quality programme of study.*
- *Visiting staff number does not exceed the number of the permanent staff.*

3.3 Synergies of teaching and research

Standards

- *The teaching staff collaborate in the fields of teaching and research within the HEI and with partners outside (practitioners in their fields, employers, and staff members at other HEIs in Cyprus or abroad).*
- *Scholarly activity to strengthen the link between education and research is encouraged.*
- *The teaching staff publications are within the discipline.*

- *Teaching staff studies and publications are closely related to the programme's courses.*
- *The allocation of teaching hours compared to the time for research activity is appropriate.*

You may also consider the following questions:

- *Is the teaching staff qualified to teach in the e-learning programme of study?*
- *How are the members of the teaching staff supported with regard to the development of their teaching skills? How is feedback given to members of the teaching staff regarding their teaching results and teaching skills?*
- *How is the teaching performance assessed? How does their teaching performance affect their remuneration, evaluation and/or selection?*
- *Is teaching connected with research?*
- *Does the HEI involve visiting teaching staff from other HEIs in Cyprus and abroad?*
- *What is the number, workload, qualifications and status of the teaching staff (rank, full/part timers)?*
- *Is student evaluation conducted on the teaching staff? If yes, have the results of student feedback been analysed and taken into account, and how (e.g., when planning in-service training for the teaching staff)?*

Findings

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

The teaching staff is well selected and qualified. The University follows clear and transparent processes for the recruitment of the teaching staff. The promotion of the teaching staff is based on comprehensive criteria covering their teaching performance, student evaluations, research activity, technical skills, and international mobility. The university follows transparent procedures for recruiting of adjunct faculty members. Adjunct faculty members are hired through open call on private-law contract for a limited period of time (mostly on a yearly basis) with the possibility of contract renewal up to three years based on the results of the internal evaluations. The key criteria in the selection procedure are the experience in e-learning teaching and the research work.

The teaching staff consists of 9 members in total, 3 faculty members, 3 adjunct professors, 2 special teaching personnel and 1 special scientist. 6 out of 9 members of the teaching staff are working on a full-time basis. The average workload of the teaching staff for the proposed programme is planned to be 1 teaching period per week. Almost all of the teaching staff members are in the core of the environmental engineering discipline, being either chemical engineers, environmental engineers, civil engineers, chemists and agronomists. The strategic plan of the University does not foresee any new positions for the next period. Currently the OUC legislation does not allow the invitation of visiting professors.

All faculty members are financially supported from the university with an annual grant to start their research work. New teaching staff receive an extra grant during their first year of employment. The University's DL unit provides comprehensive training, guidance and technical support in distance learning to the teaching staff of the different University faculties. The purpose of the training programs is not only to facilitate the understanding of the unique features of e-learning but also promote innovation in the utilisation of emerging educational technologies. New teaching staff must attend an introductory module in order to test their teaching capacities, while several training courses are also available regarding academic procedures, e-learning

platform and other e-learning tools. Teaching staff performance is monitored through research evaluations and evaluations by students for all taught courses. All faculty members and adjunct tutors can participate in the Erasmus+ Mobility actions for teaching and/or training.

Based on the CVs received, the teaching staff are highly qualified and experienced in both teaching and research. The publication track record of the faculty members is satisfactory confirming the strong research orientation of the programme. On average, academic staff publish around 7-8 peer reviewed journal papers annually. Their average track record includes more than 2200 total Scopus-indexed citations and an average Scopus h-index of 24. Most of the teaching staff has a strong presence in international networks, committees and editorial boards, while all conduct research. They have also established strong collaborations with foreign universities, governmental agencies, local authorities and the industry. Their research activity is appreciable thus promoting a strong linkage between teaching and research. The short MSc thesis (15 ECTS credits) ensures that research is being integrated in the teaching process.

Strengths

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

- The existing staff's excellent qualifications and its strong international presence and collaborations.
- The EEC recognises the University's commitment to delivering quality online education through its dedicated DL unit (LEMM) and investment in faculty development. Faculty members can participate in training programs to increase their skills to conduct quality online teaching though the effectiveness of the e-learning training programmes could perhaps be better illustrated with the provision of certification relevant to distance learning, which would also highlight the professional development of staff.
- The mode of teaching and the delivery of other duties remotely offers staff more flexibility, which was also noted during the staff interviews as part of the staff joined online.

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 highly encourages the university to benefit of having experienced visiting professors to take over teaching assignments in some fields that might be needed to further enhance the quality of the proposed programme.
- The Committee believes that the graduate programme will benefit from the direct new recruitment of at least one faculty member ideally with experience in e-learning teaching and research background in key areas such as environmental biotechnology, air pollution, water quality modelling and integrated water-energy-food nexus modelling. This will give the opportunity to the department to further develop the graduate programme of study by integrating novel environmental subjects towards attracting more students.



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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>
3.1	Teaching staff recruitment and development	Compliant
3.2	Teaching staff number and status	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.

The EEC found that that OUC has demonstrated a commitment to consistently apply pre-defined and publishable regulations covering student admission, progression, recognition and certification. The EEC anticipates that the programme details relevant for this will be placed online once its approved.

The University has developed admission and recognition procedures, particularly for prospective students engaged with a professional career with a need to maintain a life outside of a university campus.

Recognition of higher education qualification and prior learning, including the recognition of non-formal and informal learning, is adopted in a way so as to promote access to the programme for qualified prospective students.

The expected uptake – as described in the application – is extremely broad ranged. Completion of a BSc degree is mandatory for all, yet a great number of different BSc-degrees can qualify for this MSc programme.

This is expected to generate challenges in terms of implementing access policies, admission processes/criteria consistently and in a transparent fashion. It seems the institution recognizes this, and to mitigate the effects has procedures for holding interviews in critical cases that call for special attention.

Furthermore, it can lead to challenges with establishing a common core of prerequisite knowledge. The institution is committed to collect, monitor and act on information on student progression.

The programs purpose/objectives suggest substantial qualifications are to be gained. The intended learning outcomes and the context, level, content and status of the studies are well described.

Pre-defined rules regarding student progression are clearly specified well in advance to the students. The respective information is also available to OUC web page.

The University's Moodle platform provides a wide range of learning analytics tools designed to monitor student progression and performance. These tools use log data from students showing limited participation or incomplete activities. However, it remains unclear how instructors systematically employ this data, in

accordance with established procedures, to support students. Moreover, learning benefits of these tools, such as improved performance and reduced dropout rates, were not demonstrated during the meetings.

Each student receives academic mentoring by the programme's academic coordinator throughout her/his studies. The Faculty has appointed an Academic Counsellor.

Strengths

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

- The admission rules are clearly defined.
- There is a clear appreciation and attention paid to recognize prior learning and work experience embodied in the admission criteria. Interviews are to be held with prospective students where a BSc qualification does not straightforwardly appear to adequate, or where other challenges are foreseen.
- A strength was noted around the low dropout rate at university level (10-15%). Furthermore, student feedback is actively sought on an ongoing basis throughout the course delivery and at the course's end, achieving a participation rate of 30% in general. However, it remains unclear how effectively this feedback is used by the University for specific measures of continuous quality improvement.
- Pre-defined student progression rules are well stated.

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.

- Consider - and expect - the need for dealing with different orientations, qualifications and levels of formal educational skills of prospective students. A systematic method for dealing with this situation should be identified.
- The Committee suggests providing more flexibility to the teaching staff to reorganize the continuous assessment scheme of students' evaluation based on the specifics of each course.
- The EEC encourages the University to implement advanced learning analytics, particularly those based on AI and Machine Learning. These tools can monitor and predict student performance and dropout rates, enabling the institution to take proactive corrective actions.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>
4.1	Student admission, processes and criteria	Compliant
4.2	Student progression	Compliant
4.3	Student recognition	Compliant
4.4	Student certification	Compliant

5. Learning resources and student support (ESG 1.6)

Sub-areas

5.1 Teaching and Learning resources

5.2 Physical resources

5.3 Human support resources

5.4 Student support

5.1 Teaching and Learning resources

Standards

- *Weekly interactive activities per each course are set.*
- *The e-learning material and activities take advantage of the capabilities offered by the virtual and audio-visual environment and the following are applied:*
 - *Simulations in virtual environments*
 - *Problem solving scenarios*
 - *Interactive learning and formative assessment games*
 - *Interactive weekly activities with image, sound and unlimited possibilities for reality reconstruction and further processing based on hypotheses*
 - *They have the ability to transfer students to real-life situations, make decisions, and study the consequences of their decisions*
 - *They help in building skills both in experiences and attitudes like in real life and also in experiencing - not just memorizing knowledge*
- *A pedagogical planning unit for e-learning, which is responsible for the support of the e-learning unit and addresses the requirements for study materials, interactive activities and formative assessment in accordance to international standards, is established.*
- *Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).*
- *All resources are fit for purpose.*
- *Student-centred learning and flexible modes of e-learning and teaching, are taken into account when allocating, planning and providing the learning resources.*

5.2 Physical resources

Standards

- *Physical resources, i.e. premises, libraries, study facilities, IT infrastructure, are adequate to support the study programme.*
- *Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).*

- *All resources are fit for purpose and students are informed about the services available to them.*

5.3 Human support resources

Standards

- *Human support resources, i.e. tutors/mentors, counsellors, other advisers, qualified administrative staff, are adequate to support the study programme.*
- *Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).*
- *All resources are fit for purpose and students are informed about the services available to them.*

5.4 Student support

Standards

- *Student support is provided covering the needs of a diverse student population, such as mature, part-time, employed and international students and students with special needs.*
- *Students are informed about the services available to them.*
- *Student-centred learning and flexible modes of learning and teaching, are taken into account when allocating, planning and providing student support.*
- *Students' mobility within and across higher education systems is encouraged and supported.*

You may also consider the following questions:

- *Evaluate the supply of teaching materials and equipment (including teaching labs, expendable materials, etc.), the condition of classrooms, adequacy of financial resources to conduct the study programme and achieve its objectives. What needs to be supplemented/ improved?*
- *What is the feedback from the teaching staff on the availability of teaching materials, classrooms, etc.?*
- *Are the resources in accordance with actual (changing) needs and contemporary requirements? How is the effectiveness of using resources ensured?*
- *What are the resource-related trends and future risks (risks arising from changing numbers of students, obsolescence of teaching equipment, etc.)? How are these trends taken into account and how are the risks mitigated?*
- *Evaluate student feedback on support services. Based on student feedback, which support services (including information flow, counselling) need further development?*
- *How is student learning within the standard period of study supported (student counselling, flexibility of the study programme, etc.)?*

- *How students' special needs are considered (different capabilities, different levels of academic preparation, special needs due to physical disabilities, etc.)?*
- *How is student mobility being supported?*

Findings

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

The proposed courses have a complete syllabus plus detailed weekly student-centred study guides, which include relevant information such as objectives, learning outcomes, basic and complementary bibliography, self-assessment exercises, and recommended study time.

The University's DL unit is responsible for providing pedagogical support for the creation and evaluation of online courses. This unit ensures study materials, interactive activities, and both formative and summative assessments align with international standards.

The Laboratory of Chemical Engineering and Engineering Sustainability is expected to contribute to students' training and research activities (e.g. experimental thesis implementation). The Lab is very active in conducting research in the scientific field of Sustainability in Environmental Engineering. The faculty and the students are served by the university's library which holds a big number of print books, e-books and full text e-journals. All resources are available through the library's web page.

Several student support mechanisms are available through the Academic Affairs and Student Welfare Service at the university level. All these services are listed in the OUC web page and are very well known to the students. Several services (e.g. academic support services, scholarship management, student request management, counselling and guidance office, psychological support) are available to provide support to all students including those with special needs (students with disabilities, health or social and psychological problems, etc). The service also offers confidential counselling and help for any problems (personal, academic, economic, etc.). The university offers pedagogical support and teaching training seminars to faculty members. An international office centrally operates to provide support to international exchange programs. There is a scholarship programme in place for the financial support of the students. The EEC strongly emphasizes the good appreciation of the students to university's support mechanisms.

Strengths

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

- The DL unit is considered a best practice, due to its potential structure, resources and services devoted to enhanced distance learning. The EEC believes that it can be a powerful support for guaranteeing and maintaining the quality of the teaching provided while offering solid support to faculty members seeking to enhance the distance learning experience by teaching innovation.
- Online courses incorporate multi-format learning materials, including e-books, articles, videos, and audio, all beneficial for distance learning.
- The students that EEC met (former graduates PhD and MSc of related programmes) expressed satisfaction with the course material, highlighting its adequacy and the positive challenge it presents. They particularly appreciated the ease of access to academic resources, including various papers and materials available through both the university's library and professors.
- OUC clearly provides several mechanisms to support students' academic life during their studies. This is well evidenced by the students' satisfaction regarding supporting services.

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 notes that the course descriptions in the application are very detailed and comprehensive in terms of the work to be done every week. This information could be transferred to the study guides for their completion.
- The EEC also notes that the DL unit offers guidelines and templates for the development and delivery of distance learning, outlining the key characteristics required for a distance learning course. However, this information should be presented in the form of comprehensive Faculty and Student handbooks, serving as reliable references to ensure the quality and consistency of distance learning courses across all the University's faculties.
- The EEC would like to highlight that most of the required readings comprise entire volumes, which may not be feasible for students aiming to study efficiently. It is recommended to offer clear guidance in the study guides on the pertinent sections of these volumes, accompanied by the suggested study time. This approach would make the course readings more manageable and assist students in planning their studies more effectively.
- The EEC suggests exploring the use of interactive videos to enhance engagement among online students during teleconferences, with features like quizzes, navigation options and additional resources embedded in the videos. In addition, recorded teleconferences and video lectures should include the instructor (under privacy permission) in all videos for non-verbal cues, and also include subtitles for accessibility.
- Students' welfare sector is understaffed/resourced.
- Could be good to have outside professionals on the evaluation committees of MSc thesis examinations. This could give outside world input to assessment and improve stakeholder engagement.

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

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

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 External Evaluation Committee (EEC) recognized OUC's commitment to the quality of MSc in Sustainable Environmental Engineering. OUC has well-articulated quality assurance policy that involves national legal frameworks and robust procedures in the design, delivery and assessment of its educational programmes.

The Committee found the University is "compliant" in all assessed categories for the programme under review, highlighting strengths and offering recommendations. In this paragraph, the committee summarises key recommendations:

- Publicly share the quality assurance policy and program details on the University website whenever possible. Develop and provide a comprehensive Faculty Handbook and Student Handbook to serve as reliable reference to ensure the quality and consistency of distance learning courses across all the University's faculties.
- Expand elective courses based on student numbers and curriculum strengths once the programme is up and running.
- Restructure courses, moving fundamental ones to early semesters with concise names. Also address the absence of air pollution control related topics in the curriculum.
- Hire at least one new permanent faculty member in the areas of the programme, for example with expertise in environmental biotechnology and in e-learning. On short term basis, the visiting professors scheme can be useful.
- Anticipate diverse student backgrounds in terms of their previous learnings and develop means to address where certain prerequisite skills are required to deliver master level courses.
- Provide more flexibility to the teaching staff to reorganize the continuous assessment scheme of students' evaluation based on the specifics of each course.
- Provide clear guidance in the study guides regarding the weekly reading material for each course, along with the recommended study time, to make the course readings more manageable while helping students plan their study effectively.
- Include outside professionals on thesis examination committees for diverse perspectives.
- Finally, the EEC highlights the challenges of scaling synchronous teleconferences and real-time student collaboration in case of the University's plans for expanded, international programs while urging the constant adaptation of their distance learning model to support this situation.

These recommendations aim to enhance quality of OUC's proposed programme. The Committee acknowledges and appreciates the efforts of the staff of the University and Agency in organizing an exceptional visit and stimulating a fruitful discussion.



E. Signatures of the EEC

<i>Name</i>	<i>Signature</i>
Dr. Konstantinos Noutsopoulos	
Dr. Santi Caballé	
Dr. Jens Abildskov	
Dr. Waheed Afzal	
Mr. Panagiotis Chrysanthou	

Date: 30/1/2024