

# External Evaluation Report

(Programmatic within the framework of  
Departmental Evaluation)

Doc. 300.3.1/1

Date: 7&8 June 2021

- **Higher Education Institution:** University of Cyprus
- **Town:** NICOSIA
- **School/Faculty:** University of Cyprus/Engineering
- **Department:** Civil and Environmental Engineering
- **Programme(s) of study - Name (Duration, ECTS, Cycle)**
  - Programme 1** – BSc in Civil and Environmental Engineering
    - In Greek:**  
Προπτυχιακό Πρόγραμμα Πολιτικού Μηχανικού και Μηχανικού Περιβάλλοντος
    - In English:**  
BSc in Civil and Environmental Engineering
    - Language(s) of instruction:** Greek, English
  - Programme 2** – MEng and MSc in Civil Engineering
    - In Greek:**  
Μεταπτυχιακό Πρόγραμμα (Μάστερ) Πολιτικού Μηχανικού
    - In English:**  
MEng and MSc in Civil Engineering
    - Language(s) of instruction:** Greek, English
  - Programme 3** – PhD in Civil Engineering
    - In Greek:**  
Διδακτορικό Πρόγραμμα Πολιτικού Μηχανικού
    - In English:**  
PhD in Civil Engineering
    - Language(s) of instruction:** Greek, English

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

## **A. Introduction**

*This part includes basic information regarding the onsite visit.*

The committee members visited the University virtually during the period of June 7 to 8 2021 due to Covid-19 related travelling restrictions. Nonetheless, they were provided with a significant number of resources that assisted with all aspects of this evaluation.

The members of the Department gave extensive and comprehensive presentations regarding all three undergraduate and graduate programs and were very willing to answer questions asked by the committee. Moreover, additional data and complimentary information was provided, when necessary. The committee believes that this report has not been affected by the virtual nature of the visit. This is thanks to the efforts of all the parties involved.

## B. External Evaluation Committee (EEC)

<i>Name</i>	<i>Position</i>	<i>University</i>
<b>Andrew Heath</b>	<b>Professor</b>	<b>University of Bath, UK</b>
<b>Emmanouil Chatzis</b>	<b>Associate Professor</b>	<b>University of Oxford, UK</b>
<b>Dimitrios Lignos</b>	<b>Associate Professor</b>	<b>École Polytechnique Fédérale de Lausanne, Switzerland</b>
<b>Konstantinos Noutsopoulos</b>	<b>Associate Professor</b>	<b>National Technical University of Athens, Greece</b>
<b>Georgios Nicolaou</b>	<b>Student</b>	<b>Cyprus University of Technology</b>
<b>Andreas Theodotou</b>	<b>Professional Civil Engineer</b>	<b>Scientific and Technical Chamber of Cyprus Representative - ETEK</b>

## 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 each 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.*

**Findings for** [Bachelor of Science in Civil and Environmental Engineering]

All academic bodies are headed by elected faculty members, which aligns with formal procedures in a number of universities within the EU. Two student representatives participate in all academic bodies. The content and objectives of the study are in accordance with EQF.

Specific information regarding the program is available online and is updated regularly. The faculty-to-student ratio is about 1:10.

The information related to the various programmes of study is publicly accessible through a dedicated website that is constantly updated.

Courses are offered in Greek, excluding particular courses as part of the Erasmus program, which are offered in English; the significant majority of students are Cypriots or of Greek origin.

The university workload is in line with that expressed by ECTS (240 ECTS for 4 academic years). This corresponds to 30 ECTS units per semester and about 25 hours of workload for a student per week.

The academic program is coordinated between 15 appointed faculty members as well as few other scientific personnel mostly with a PhD degree. In Particular, 60% of the existing faculty members teach 2 undergraduate courses per semester. It also appears that some junior faculty teach 3 undergraduate courses per year in addition to other graduate courses.

The drop out rate is, on average, 9.6%, whereas the average course failure rate is 19.4%. The primary reason for dropouts is that most of these students did not have as a first priority the civil engineering discipline when they were admitted through the pancyprian entrance exam.

Statistics since 2007 reveal that a student graduates in about 9 semesters (4-½ years instead of 4 academic years) with a BSc degree.

Students are mostly hired in the private sector. The department has established an alumni center to establish contact with past graduates and identify future needs in their professional development. Moreover, an alumni survey has been conducted just recently.

With regard to new faculty, an entry program has been established to inform them specifically regarding teaching. Teaching evaluations and their analysis are handled between the respective instructor and department head to ensure a high quality of teaching.

The program is designed to meet the registration requirements of the Scientific and Technical Chamber of Cyprus - ETEK, which is the primary Professional Body that recognizes Engineering Science in Cyprus.

Finally, there are no substantial overlaps between courses. This is generally ensured between faculty of the same subject area.

Findings for [Master of Engineering and Science in Civil Engineering]

The quality assurance follows a 6-step process. Each step appears to be thoroughly evaluated by both internal and external departmental bodies.

The MSc program may be completed at minimum in three (3) academic semesters for 110 ECTS – students should succeed in 7 courses but there is a strong research component including a thesis (54 ECTS).

The Meng program may be completed at minimum in three (3) academic semesters for 90 ECTS – it provides the opportunity to combine practical and technical work. Students should succeed in 10 courses. A thesis project is also required (10 ECTS).

Courses are offered in Greek, excluding particular courses as part of the Erasmus program, which are offered in English.

There are four specializations (directions) that appear to be very comprehensive; courses appear to be carefully put together.

Direction #1 (Structural Analysis and Earthquake Engineering)

Direction #2 (Novel and Traditional Construction Materials)

Direction #3 (Geotechnical engineering)

Direction #4 (Construction & Transport Infrastructure Management)

Some overlap exists in courses between directions (e.g., Direction #1 and Direction #3); however, the primary difference in this case will be a completely different Masters thesis topic.

60% of the existing faculty teaches 2 graduate courses, whereas the rest of the faculty teaches 1 graduate course.

There are two periods of examination including two evaluation methods featuring a mid-term and final examination. The students are free to choose between an oral and written final exam. The evaluation methods do not exceed 60% of the final grade.

Of interest is hands-on assignments that involve teamwork. A number of these theses are conducted in close collaboration with high profile industry professionals and stakeholders so as students could explore practical applications of their work.

Students have an academic advisor and they can attend regular office hours.

The evaluation criteria for the MSc/MEng programs are set based on overall quality (GPA minimum), relevance in the field of study, language requirements, ability for original work. A statement of purpose along with motivation/objectives is part of the formal requirements.

The annual admissions since 2015 involve, on average, a steady decline in the number of students per year, thereby leading to low attendance in a number of courses of the graduate program.

Based on a formal 2020 Alumni survey, at least 80% of graduates are employed in the private sector.

### Findings for [Doctor of Philosophy in Civil Engineering]

The quality assurance follows a 4-step process. The admission process requires a degree in BSc and MSc (or equivalent). Three letters of reference are required prior to admission.

A doctoral candidate submits a PhD proposal after succeeding in 80 ECTS in coursework. This is done maximum 2 years after admission, which is based on established procedures by the department. The proposal is presented to the doctoral committee that is composed of 3 academic advisors. Finally, a PhD thesis is presented to a 5-member committee (including 2 external members).

The annual admissions since 2015 involve, on average, about 2 to 3 doctoral students per year. This corroborates with the level of external funding that the department secures annually.

Students are encouraged to participate in scientific conferences and events of interest to their discipline. The students are fully supported financially by the advisor in this case. At least 2 peer-reviewed journal articles should be published prior to the doctoral defense.

A minimum salary has been established for doctoral students to support their studies.

Drop outs have been noted based on the results of the comprehensive examination. Some drop outs have been noted because students move on to pursue a different professional career.

The average time for graduation is, on average, between 5 to 6 years. Some students reach the maximum allowed period (i.e., 8-years) because of personal reasons; however, this is not the norm.

### Strengths

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

#### Strengths for [Bachelor of Science in Civil and Environmental Engineering]

1. Professionally accredited degree to practice civil engineering in Cyprus.
2. Attract high caliber students from Cyprus.
3. Well-equipped facilities and computer laboratories to ensure hands-on experience and opportunities for active learning.
4. The department presented several examples involving both practical works along with emphasis on the fundamentals, which is key for the professional development of potential future graduates.
5. Students have opportunities to collaborate in multidisciplinary projects including the capstone project.
6. Large variety of elective courses complementing the core curriculum.

#### Strengths for [Master of Engineering and Science in Civil Engineering]

1. Strong core in mechanics/design related courses.
2. For quality assurance, the department has set formal grading procedures that give constant feedback to the students.
3. Interesting topics on earthquake engineering / structural engineering are covered.
4. An MSc thesis is considered as part of the formal requirements to complete the degree.
5. Technical elective courses for specialization in certain areas.

6. The department encourages practice work through courses for the students to explore how theoretical concepts are applied in practice.

**Strengths for** [Doctor of Philosophy in Civil Engineering]

1. Several checkpoints have been established throughout the program to ensure a successful progression of the PhD student.
2. Doctoral level coursework has also been established for normal flow of the program.
3. Established to develop critical thinking.
4. Technical writing offerings through the university center for teaching and learning are available to students; dissertation guidelines have been formally established.
5. A formal training has been established for students who may be using facilities and specialized equipment as part of experimental activities. A certificate is issued in this case.

**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.*

**Areas of improvement and recommendations for** [Bachelor of Science in Civil and Environmental Engineering]

1. There seems to be limited access to students outside of Cyprus due to the language of course offerings, which are mostly offered in Greek. However, the department has already identified this as a potential area for improvement over the next 5 years.
2. A water resources engineering faculty would give a great boost to the current program.
3. A faculty member in the general area of energy efficiency of buildings would be an asset for the future vision of the department.
4. A faculty member in the transportation discipline could add value to the department with emphasis on transit system design and road safety among others.
5. Some rebalancing in course allocations is necessary; depending on the discipline, some junior faculty appear to be somewhat overloaded with a number of core undergraduate courses. The role of a faculty advisor should be formally identified to ensure a seamless integration of junior faculty and walk them through the tenure process.

**Areas of improvement and recommendations for** [Master of Engineering and Science in Civil Engineering]

1. There appears to be some appreciable overlap in courses between Direction specializations (e.g., Geotechnical and structural). While this is normal in other graduate programs from around the world, the department could consider adopting the practice of mandatory courses to be completed so as they can eliminate overlaps.
2. The language of this program (Greek) does not allow a significant internationalization of the students. Given the strengths described above that denote an interesting programme, it is suggested in the future to evaluate the possibility to propose a duplication in English of this programme for improving the presence of international students.

**Areas of improvement and recommendations for** [Doctor of Philosophy in Civil Engineering]

1. The courses taught only in Greek do not help the participation of international students. This will offer the possibility to host international academic staff, giving up the opportunity to increase the research exchange. While the program is well run, few more ECTS may be considered.

2. The department may want to consider making compulsory courses associated with ethics considerations in research as well as technical writing. These offerings are available and should be fairly easy to implement.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>		
		BSc in Civil and Environmental Engineering	MEng and MSc in Civil Engineering	PhD in Civil Engineering
<b>1.1</b>	Policy for quality assurance	Compliant	Compliant	Compliant
<b>1.2</b>	Design, approval, on-going monitoring and review	Compliant	Compliant	Compliant
<b>1.3</b>	Public information	Compliant	Compliant	Compliant
<b>1.4</b>	Information management	Compliant	Compliant	Compliant

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

### Sub-areas

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

**2.2 Practical training**

**2.3 Student assessment**

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

#### Standards

- *The process of teaching and learning supports students' individual and social development.*
- *The process of teaching and learning is flexible, considers different modes of delivery, where appropriate, uses a variety of pedagogical methods and facilitates the achievement of planned learning outcomes.*
- *Students are encouraged to take an active role in creating the learning process.*
- *The implementation of student-centered learning and teaching encourages a sense of autonomy in the learner, while ensuring adequate guidance and support from the teacher.*
- *Teaching methods, tools and material used in teaching are modern, effective, support the use of modern educational technologies and are regularly updated.*
- *Mutual respect within the learner-teacher relationship is promoted.*
- *The implementation of student-centred learning and teaching respects and attends to the diversity of students and their needs, enabling flexible learning paths.*
- *Appropriate procedures for dealing with students' complaints regarding the process of teaching and learning are set.*

### **2.2 Practical training**

#### Standards

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

### **2.3 Student assessment**

#### Standards

- *Assessment is consistent, fairly applied to all students and carried out in accordance with the stated procedures.*

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

*You may also consider the following questions:*

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



## **Findings**

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

### **Findings for** [Bachelor of Science in Civil and Environmental Engineering]

There is an optional practical training course, which is very much appreciated by the students. These initiatives create a good connection to practical applications. The syllabus appears to have a balance between theoretical and applied/technical courses.

Undergraduates are involved in research, through their final year thesis, which often includes interactions with the Department's PhD students and graduated students who may be working in research related projects in industry. Moreover, it appears that a number of students are involved in experimental activities within the University's laboratories. Some of the students have participated in research internships abroad with co-supervision from both the host university as well as university of Cyprus.

Courses are evaluated on a basis of 50% final exam and 50% of coursework and/or a midterm. Lecturers appear to have a flexibility on how the coursework marks are distributed among assignments, class participation, labs and/or midterms. This ensures constant feedback to the students throughout the semester. Moreover, faculty holds regular office hours. The students appreciate the fact that faculty is available to answer questions and provide continuous feedback throughout the semester. The assessment methods meet the European Qualifications Framework.

The pandemic enforced a Zoom/Teams teaching approach. However, it should be pointed out that several faculty members were recording their lectures before the pandemic and were providing these lecture recordings through a dedicated online platform, which is also used to upload teaching material electronically.

### **Findings for** [Master of Engineering and Science in Civil Engineering]

The MSc and MEng programs follow the ECTS system with students having to complete 110 and 90 ECTS, respectively, to graduate, including a mandatory thesis.

The thesis may be of research nature allowing MSc students to put equal weight to theory (courses) and research. The marks are attributed to each course in a similar manner as for the BSc, a mixture of the final exam and the coursework/midterm (50%-50%). The assessment methods with regard to the final exam could either be oral or written, depending on the students' choice. Generally, the assessment methods correspond to EQF.

Lectures occur in the afternoon. Students have an academic advisor and are supported with office hours.

The department is putting effort to integrate aspects of sustainability as well as digitalization of infrastructure and cities through various activities including coursework as well as active projects. There is also a dedicated course in BIM.

### **Findings for** [Doctor of Philosophy in Civil Engineering]



A similar structure to MSc/MEng programs is followed regarding courses with the additional guidance by the research supervisor and research advisory committee. The students take MSc courses, plus some additional PhD dedicated courses.

The intermediate control points of the comprehensive exam and the research approval aid the doctoral students to monitor their progress and provide feedback to the student as well as the respective supervisor(s). The doctoral students conduct research in funded projects. The students get the opportunity to attend conferences to disseminate their research work to a larger audience. Moreover, doctoral students are often involved as teaching assistants in various course offerings.

### **Strengths**

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

#### **Strengths for** [Bachelor of Science in Civil and Environmental Engineering]

1. Overall there seems to be a strong welfare support for students.
2. There is a new group of university buildings that will soon be delivered that includes good-size modern and well-equipped classrooms. This will complement the existing facilities and laboratories.
3. Office hours work well.
4. Exceptional experimental facilities that provide students the opportunity to participate in research activities and be exposed early on to research.

#### **Strengths for** [Master of Engineering and Science in Civil Engineering]

1. Same findings with the BSc program.
2. Dedicated course in BIM.
3. Projects on digitalization of infrastructure and cities.

#### **Strengths for** [Doctor of Philosophy in Civil Engineering]

1. Access to high quality experimental facilities.
2. Continuous feedback throughout the process with multiple checkpoints.
3. Opportunities to attend conferences.
4. Minimum salary requirements to ensure living expenses can be covered.
5. Minimum course requirements.

### **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.*

#### **Areas of improvement and recommendations for** [Bachelor of Science in Civil and Environmental Engineering]

Not many areas of improvement were detected for this program.

Practical training at the industry in summer should be included in the degree, as an additional practical experience to be combined with theoretical knowledge.

#### **Areas of improvement and recommendations for** [Master of Engineering and Science in Civil Engineering]

1. One aspect to be considered is associated with courses related to energy efficiency of buildings.

2. A complementary course on sustainability may be considered for the following 5 years considering that many departments in the EU are oriented towards sustainability minors in graduate programs.

Areas of improvement and recommendations for [Doctor of Philosophy in Civil Engineering]

Nothing in particular.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>		
		BSc in Civil and Environmental Engineering	MEng and MSc in Civil Engineering	PhD in Civil Engineering
2.1	Process of teaching and learning and student-centred teaching methodology	Compliant	Compliant	Compliant
2.2	Practical training	Compliant	Compliant	Compliant
2.3	Student assessment	Compliant	Compliant	Compliant

### 3. Teaching staff (ESG 1.5)

#### Sub-areas

#### 3.1. Teaching staff recruitment and development

#### 3.2. Teaching staff number and status

#### 3.3. Synergies of teaching and research

### 3.1. Teaching staff recruitment and development

#### Standards

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

### 3.2. Teaching staff number and status

#### Standards

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

### 3.3. Synergies of teaching and research

#### Standards

- *The teaching staff collaborate in the fields of teaching and research within the HEI and with partners outside (practitioners in their fields, employers, and staff members at other HEIs in Cyprus or abroad).*
- *Scholarly activity to strengthen the link between education and research is encouraged.*
- *The teaching staff publications are within the discipline.*
- *Teaching staff studies and publications are closely related to the programme's courses.*
- *The allocation of teaching hours compared to the time for research activity is appropriate.*

*You may also consider the following questions:*

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

### **Findings**

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

#### **Findings for** [Bachelor of Science in Civil and Environmental Engineering]

While the vast majority of courses are taught by teaching staff who are permanently employed by the University, there are some key courses which are taught by visiting staff with contracts just to teach that course. These staff normally have PhD degrees in the relevant subject, although some laboratory courses have staff with a masters degree (often current PhD students). The approach ensures staff are qualified to teach their courses.

All new teaching staff must attend an introduction to teaching course which is run centrally for the University. New staff are appointed with consideration of both teaching and research need and ability, and performance is monitored through research evaluations and evaluation by students for all taught courses. The member of staff who is teaching the course and Head of Department have access to the student evaluations and the Head of department is responsible for taking action if teaching is poor. These student evaluations form part of any promotion case.

All permanent staff also conduct research, including with overseas universities, and this ensures there is a strong link between teaching and research in the department. While the final thesis is a capstone design project rather than a research project, students are offered the opportunity to undertake research over the summer which the staff fund through their research budgets or other means.

There were some concerns expressed by junior staff that the promotion criteria are not very clear. There is good informal advice available to staff seeking promotion, but no formal mentoring scheme available for new staff. Staff were under the impression that although research, teaching and administration are the three components of an academic career at the University of Cyprus, promotion is mainly based on Research. The University has only recently adopted an award for excellent teaching.

#### **Findings for** [Master of Engineering and Science in Civil Engineering]

As for Bachelor of Science in Civil and Environmental Engineering.

The taught courses contain information based on the current research of the teaching staff, and this allows the masters students to get up to date information on current topics related to their course of study. The large research thesis for the MSc (and to a lesser extent, the small 10 ECTS research project for the MEng degree) ensures that research is embedded into teaching.

Findings for [Doctor of Philosophy in Civil Engineering]

As for MEng and MSc degrees.

The nature of PhD research is such that research is embedded into the student work. Having taught courses based on current research topics of teaching staff ensures that the PhD students get a good start to their research studies.

**Strengths**

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

Strengths for [Bachelor of Science in Civil and Environmental Engineering]

1. The number of permanent staff (which has increased in recent years), and the clear passion of the staff for Civil Engineering is a strength of the department. The communication from staff to students, particularly during the COVID pandemic is a clear strength. Students were very positive about the teaching they received from staff and acknowledged that they have developed additional skills that they will be able to use both during their degree and when they work in industry.
2. While it is important that the undergraduate courses are focussed around in-person (face to face) teaching (especially for laboratory based courses) it would be good practice to continue to retain teaching materials online as done through the pandemic.
3. Having current experienced PhD students (who already have masters degrees) teaching some of the laboratory based undergraduate courses provides excellent career development opportunities for the PhD students, and ensures undergraduate students are taught by those who are dealing with the laboratory equipment on a more regular basis than some of the permanent academic staff.

Strengths for [Master of Engineering and Science in Civil Engineering]

1. As with BSc in Civil Engineering.
2. Having teaching staff teaching in evenings is important for masters students who are working even though this may be difficult for some staff.

Strengths for [Doctor of Philosophy in Civil Engineering]

1. As with MEng and MSc degrees
2. Although there are some small gaps in coverage, having staff able to supervise the range of PhD topics where there are research needs in Cyprus and internationally (Earthquake Engineering, Structures, Geotechnical Engineering, Transportation, etc) is important in raising the research profile of the University as well as ensuring interdisciplinary research can take place.
3. Having some staff co-supervising PhD students in other departments and at other universities allows staff to gain broader experience and increase research output, and also ensures that PhD students can have appropriate supervision throughout their degree, particularly if their research is multidisciplinary.

**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.*

Areas of improvement and recommendations for [Bachelor of Science in Civil and Environmental Engineering]

1. While the vast majority of courses are taught by teaching staff who are permanently employed by the University, there are some key areas where there are no permanent staff. Hydrology and some aspects of hydraulics are areas which would benefit from additional staffing as this is a clear need in Cyprus with the water availability problems that it faces. Having non-permanent staff teaching this indicates to students that it is not an important area of study which is not the correct impression.
2. Having more of the first year taught by Civil Engineering staff is recommended as this will ensure that students are more focussed on the profession, and can see how certain other subjects (such as mathematics, physics or computer programming) link to Civil Engineering. This will ensure students feel part of the Civil Engineering degree and may have a positive effect on first year retention, but it could require some additional staffing. Many Civil Engineering faculty members will have the knowledge to be able to teach this to first year students, and will be able to build in more relevant examples for students.
3. It is recommended that before the start of the new academic year the department hold a meeting/workshop where they consider student feedback and the experience from the COVID disruption, and whether any changes introduced then should be continued. In particular the provision of learning materials online, and the recording of lectures should be considered. While teaching staff will approach teaching in different ways and it is an important part of the student experience to experience different teaching styles, there should still be some level of consistency such as agreeing to use Blackboard or Teams for provision of learning materials and for student submissions of coursework. A discussion should also be had with incoming students to explain the teaching approach and show the range of civil engineering and how this will be addressed in their programme.
4. While not teaching staff, there appears to be a shortage of technical staff who are needed to support the work of the teaching staff and ensure that the students are able to meet all the practical requirements of a civil engineering degree. This is not only detrimental to the learning experience of students but is also a potential safety concern. It is recommended that the provision of technical staff be reviewed from both a student learning and safety perspective.

Areas of improvement and recommendations for [Master of Engineering and Science in Civil Engineering]

1. As with BSc in Civil Engineering.
2. Some of the masters courses have very low numbers (<5 students) and these may not be cost-effective to teach. The proposed move to teaching the masters courses in English may lead to an increase in numbers of students so it is not currently recommended that courses are no longer taught, but it is recommended that the situation be monitored over the next few years and if courses consistently attract low student numbers it should be considered whether they are still needed.
3. Options for online learning materials and recorded lectures are more important for MEng and MSc students than for the undergraduate students, as many masters students are working as civil engineers and may sometimes struggle to attend evening classes. This should be balanced with the benefits of creating a cohort where the students interact with each other during classes - if all learning is online it may have a negative effect on the student experience and learning.

Areas of improvement and recommendations for [Doctor of Philosophy in Civil Engineering]

1. As with MEng and MSc in Civil Engineering.

2. Having no permanent staff in the area of hydrology (an extremely important field in Cyprus) does mean that it is unlikely that PhD students interested in this topic will register at the University, and employing a member of staff in hydrology should be considered.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>		
		BSc in Civil and Environmental Engineering	MEng and MSc in Civil Engineering	PhD in Civil Engineering
<b>3.1</b>	Teaching staff recruitment and development	Compliant	Compliant	Compliant
<b>3.2</b>	Teaching staff number and status	Compliant	Compliant	Compliant
<b>3.3</b>	Synergies of teaching and research	Compliant	Compliant	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.*

#### **Findings for** [Bachelor of Science in Civil and Environmental Engineering]

BSc: Undergraduates admitted ~35 per year. A similar number of students graduate per year. The entrance requirements are clearly regulated by the PanCypriot exam. The members of the Department have expressed a concern on the declining minimum mark for entry over the last years, as a result of a declining interest of students towards Civil Engineering. (The entrance mark is state regulated through the entrance exam-system). The Department has taken actions to inform students on the profession of Civil Engineering and its importance to the society. The members of the Department have also suggested as a means to address the dropout rate in the first year, to gradually move towards the direction of the members of the Civil Engineering Department teaching the first year courses.

Regarding student progression those are clearly specified and are known in advance to the students. Each course corresponds to 5 ECTS credits. The students are awarded a Bachelor's degree after 4 years, having completed 240 ECTS credits. This is in agreement with the requirements of the Cyprus professional accreditation body ETEK. There is a mandatory 4th year thesis project which is a design project done in groups. Courses midterm, finals, homeworks and projects, final exam can at most be 60% of the final grade. Students are given the opportunity to work on research projects over the summer.

There is no resit of exams courses are retaken typically in a following year. There is a limit on the total ECTS one can take per semester of 38 ECTS credits per semester. Max duration of studies is 6 years (can be extended for reasons that may lead to a student rustivating for a semester). The meeting with the Academic advisor is optional for the students, unless they are performing inadequately where in such cases the Advisor needs to sign a registration form.

#### **Findings for** [Master of Engineering and Science in Civil Engineering]

*Around 18 students are admitted per year.*

Msc and Meng options. Msc 7 courses-but MSc requires a thesis which corresponds to 54 /110 ECTS, while Meng has 10 courses for a total of 90 ECTS. The Meng program also involves a smaller thesis for 10 ECTS. Two examination periods, December and May and two evaluation methods between oral and written exams. For each course there is a midterm and final examination.

The defence of the MSc thesis involves examination by a committee of two members.

The facilities of the MSc are the same as the ones for the BSc and hence of very good standard.

Admission: The post graduate committee of the CEE Department reviews applications and submits a recommendation. Two admission periods March/November. Students are admitted with a GPA >6.5/10. Students are admitted from relevant fields.

There are many support offices covering different aspects from housing to social support, student life, psychological and career. There is also a well defined award program for scholarships.

Students accepted from Civil, Surveying, Mechanical, Geologists, Chemical Engineering and Chemistry. For the transfer of credits up to 2 courses and the corresponding credits can be recognized, and an effort is made for the students to not have overlaps. The graduate degree leads to accreditation according to the rules of the technical chambers and are clearly specified by the chambers and known to the students at admission. The MSc cannot provide accreditation on its own without a relevant BSc.

#### Findings for [Doctor of Philosophy in Civil Engineering]

Approximately 2.6 students per year are admitted.

80 ECTS credits from courses 160 from the thesis.

The applications are evaluated by a departmental Board. Within 2 years from admission in the program the students have to have completed 80 ECTS from courses, and go through comprehensive Exams that cover 3 subjects relevant to the Phd topic. There is another evaluation step where a research proposal is submitted to a committee of 3 academic advisors. Finally there is an examination by a PhD Examination committee involving two members from the Department and two externals. The Defence is public.

The maximum allowed time to complete the PhD is 8 years. Typically this corresponds to including times for leave or part-time completion of the PhD.

A student can choose to leave the PhD program having completed the ECTS requirements and can be awarded with MEng.

The qualification exams can be repeated for a maximum of 2 times. A failing student can be awarded an MEng if they have successfully completed the corresponding credits.

At admission the student needs to be a holder of BSc or MSc in Civil or related backgrounds. Students can transfer up to 56 maximum ECTS depending on their background, non-Civil Engineering students can get only up to 32 ECTS transferred. This recognition of points is approved by a committee.

There is a seminar on ethics. The University Centre for Student Learning offers optional courses on technical writing, ethics and career development which are optional. There is a Safety induction course for students doing experimental projects.

#### Strengths

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

Strengths for [Bachelor of Science in Civil and Environmental Engineering]

- The Department is ranked typically in the first or second position in preferences of the students following the Pancyriot Exam. This ensures good quality of students.
- The Pancyriot Exam results in a state-controlled admission process whose details are very well explained to the applying students. It also ensures the quality of the admission process.
- The number of students admitted results in a good ratio of students per lecturers.
- The progression rules are very well stated and marks involve a mixture of exams, classwork and midterms.
- The Degree is in a very good alignment with the accreditation requirements of ETEK and other technical chambers.
- While the existing facilities are already of good standard. The transfer to new buildings is a further positive.

Strengths for [Master of Engineering and Science in Civil Engineering]

- A well defined admission process.
- The transfer of credits process is well defined and involves the approval of a Departmental committee.
- The examination process is well defined.
- Several specialized courses.
- Several separate specializations which have occurred as a response to requests from students.
- The option between Meng and MSc.
- While the existing facilities are already of good standard. The transfer to new buildings is a further positive.

Strengths for [Doctor of Philosophy in Civil Engineering]

- A good number of students admitted per year which allows the supervisors to sustain group's of reasonable size and produce outputs.
- The admission process is well organized.
- There is a well-defined process of transfer of credits which is known to the students before admission.
- A very well-organized progression process for PhD students with several examination committees.
- The PhD students are supported by several student support centres.
- The new building and the new experimental facilities will also improve the support of PhD students.

### **Areas of improvement and recommendations**

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

#### **Areas of improvement and recommendations for** [Bachelor of Science in Civil and Environmental Engineering]

The Department has detected an area of improvement related to admissions: the quality of the students admitted and the reduction of dropout rates in the first year. Their suggestions on how to tackle that are reasonable. It involves lecturers informing students on the importance of the Civil Engineering profession through visits to schools. For the dropout rate the Department has the ambitious, but justified plan, to take over the teaching of courses (maths and physics) in the first year. The committee supports both suggestions.

Perhaps though an additional direction is to set up a system of tutorials for admitted students who seem to struggle. This could be in the form of extra classes and may be offered by teaching assistants. The salaries of such assistants should be covered by the University. This would be in compliance with policies of other Cypriot Universities. Additionally the committee believes that the students' meeting with their Academic Advisors should be mandatory.

#### **Areas of improvement and recommendations for** [Master of Engineering and Science in Civil Engineering]

The Department has carefully made a decision in merging or splitting the MSc directions over the last years. However, perhaps this decision should be re-examined together with relevant stakeholders if the number of students enrolled in a direction fall below a threshold defined by the Department.

#### **Areas of improvement and recommendations for** [Doctor of Philosophy in Civil Engineering]

A potential area of improvement for the PhD programme is that of increasing the numbers of admitted students. The Faculty is working towards that direction, and applying for more European Grants will help.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>		
		BSc in Civil and Environmental Engineering	MEng and MSc in Civil Engineering	PhD in Civil Engineering
4.1	Student admission, processes and criteria	Compliant	Compliant	Compliant
4.2	Student progression	Compliant	Compliant	Compliant
4.3	Student recognition	Compliant	Compliant	Compliant
4.4	Student certification	Compliant	Compliant	Compliant

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

### Sub-areas

- 5.1. Teaching and Learning resources
- 5.2. Physical resources
- 5.3. Human support resources
- 5.4. Student support

### 5.1 Teaching and Learning resources

#### Standards

- *Adequate and readily accessible teaching and learning resources (teaching and learning environments, materials, aids and equipment) are provided to students and support the achievement of objectives in the study programme.*
- *Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).*
- *All resources are fit for purpose.*
- *Student-centred learning and flexible modes of learning and teaching, are taken into account when allocating, planning and providing the learning resources.*

### 5.2 Physical resources

#### Standards

- *Physical resources, i.e. premises, libraries, study facilities, IT infrastructure, are adequate to support the study programme.*
- *Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).*
- *All resources are fit for purpose and students are informed about the services available to them.*

### 5.3 Human support resources

#### Standards

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

## 5.4 Student support

### Standards

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

*You may also consider the following questions:*

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

### **Findings**

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

**Findings for** [Bachelor of Science in Civil and Environmental Engineering]

The Department has a satisfactory infrastructure (classrooms, laboratories, library, etc) and resources (lab consumables, software) to adequately support its teaching mission. Currently, teaching is taking place in two buildings (CTF01 and CTF02) at the Aglantzia Campus. The buildings



have several classrooms which are well equipped with modern audiovisual media. The Department maintains 12 labs to support lab courses. The Department has two PC labs for students use with more than 60 computers, while other IT facilities are also available centrally by the university. Several electronic services are available for the students by the Infrastructure Information System. All the buildings provide access to students with disabilities. The university's library is the largest in the country and provides several services to the academic community. A weak point is that offices, classrooms, labs and other facilities are rather scattered in distant locations. However this problem will be solved upon completion of the construction of the Department's new building where all services and labs will be gathered.

Several student support mechanisms are available to enhance students' needs. All these services are listed in the Department's web page. Specific services (e.g. academic support staff, social support office, housing office, student life office, psychological support centre, health and safety department) are available at the university level to provide support to special needs (students with disabilities, health or social and psychological problems, etc). Optional courses are offered centrally by the university on technical writing, ethics and career development. A mobility office centrally operates to provide support to international exchange programs.

#### Findings for [Master of Engineering and Science in Civil Engineering]

The same key findings as in the Bachelor programme of Science in Civil and Environmental Engineering have been identified. In addition to these the following should be highlighted:

- Adequate resources for supporting MSc students research work during thesis implementation (refers to MSc programme) are available.
- The faculty enables many graduate students in their ongoing research.

#### Findings for [Doctor of Philosophy in Civil Engineering]

The same key findings as in the Bachelor programme of Science in Civil and Environmental Engineering have been identified.

In addition to these the following should be pointed out:

- Adequate resources (specialized software, lab equipment and consumables) for supporting PhD students experimental work are available.
- Many PhD students are actively engaged in the ongoing research projects of the faculty members and some of them contribute in the teaching procedure (mostly related to the experimental teaching courses) as Special Scientists after being evaluated in open procedures.

#### Strengths

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

#### Strengths for [Bachelor of Science in Civil and Environmental Engineering]

The Department clearly provides several mechanisms to support students' academic and social life during their studies. This is well evidenced by the students' satisfaction regarding supporting services.

The new state of the art library which provides high quality services to both faculty members and students.

The well equipped teaching rooms and labs support the student-centred learning procedure.



**Strengths for** [Master of Engineering and Science in Civil Engineering]

In addition to the ones already noted for the Bachelor programme of Science in Civil and Environmental Engineering the following should be also highlighted:

- The resources to support graduate students' experimental work are sufficient.
- The engagement of many of the graduate students in the research work of the academic personnel.

**Strengths for** [Doctor of Philosophy in Civil Engineering]

In addition to the ones already noted for the Bachelor programme of Science in Civil and Environmental Engineering the following should be also pointed out:

- The resources to support PhD students' experimental work (lab equipment, consumables, specialized software, etc) are sufficient.
- Most PhD students are actively engaged in the ongoing research projects run by faculty members.
- PhD students that serve as Special Scientist in teaching acquire several skills.

**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.*

**Areas of improvement and recommendations for** [Bachelor of Science in Civil and Environmental Engineering]

No major weak points have been identified in BSc programme's learning and students support procedures. Some recommendations for possible improvements are the following:

- The meetings of students with the Academic Advisor would be preferentially mandatory.
- A more detailed plan for students' support and briefing regarding mobility opportunities can be implemented by the Department to enhance the centrally operated mobility office.

**Areas of improvement and recommendations for** [Master of Engineering and Science in Civil Engineering]

No major weak points have been identified in MSc and MEng programmes' learning and students support procedures.

**Areas of improvement and recommendations for** [Doctor of Philosophy in Civil Engineering]

No major weak points have been identified in PhD programme's learning and students support procedures.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>		
		BSc in Civil and Environmental Engineering	MEng and MSc in Civil Engineering	PhD in Civil Engineering
<b>5.1</b>	Teaching and Learning resources	Compliant	Compliant	Compliant
<b>5.2</b>	Physical resources	Compliant	Compliant	Compliant
<b>5.3</b>	Human support resources	Compliant	Compliant	Compliant
<b>5.4</b>	Student support	Compliant	Compliant	Compliant

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

### Sub-areas

- 6.1. **Selection criteria and requirements**
- 6.2. **Proposal and dissertation**
- 6.3. **Supervision and committees**

### 6.1 Selection criteria and requirements

#### Standards

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

### 6.2 Proposal and dissertation

#### Standards

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

### 6.3 Supervision and committees

#### Standards

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

- *reports per semester and feedback from supervisors*
- *support for writing research papers*
- *participation in conferences*
- *The number of doctoral students that each chairperson supervises at the same time are determined.*

*You may also consider the following questions:*

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

### Findings

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

The system for PhD students is well run and clear from admissions all the way to the final submission. There are a number of elements that are not formally documented but which make sense for both the University and students. For example, personal circumstances are looked at after the comprehensive exam if a student fails or elects not to continue because of personal circumstances. The option of an MEng or MSc is looked at if they do not already have one from the University of Cyprus - this may require additional work by the student but provides the opportunity to gain recognition for the work they have completed.

The admissions process involves a discussion with the Academic Advisor to agree on which taught courses are taken so that the initial research idea can be developed into a proposal at a later date. The factor limiting admissions appears to be the number of suitable applicants rather than a shortage of staff or facility (especially laboratory) capacity.

The research topics are appropriate for a PhD in civil engineering, and cover the breadth of the subject. The topics are relevant both internationally and within the Cyprus context. The Department tries to ensure topics are focussed on the problems faced in Cyprus so that they can make a difference in society.

The Department indicated that they feel the major reasons they cannot recruit more PhD students are because of some of the taught components being in Greek which limits the pool of overseas applicants, and because some PhD students could attract higher salaries if they worked in industry.

### Strengths

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

1. The focus of the topics on areas of research that are relevant to the particular situation in Cyprus is a clear strength.
2. The support provided to PhD students through the entire process, from application to completion is at a high level.

### 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.*

1. As indicated in the staffing section of this report, it is difficult to supervise PhD students in hydrology as there are no permanent staff in this area. This is a key area of research for Cyprus and limiting research in this area. Appointing a member of staff in this area should be considered.
2. As currently being discussed in the department, the option to change postgraduate teaching to English should be considered as this will open the market for more overseas PhD students. This decision will involve a number of political and other considerations, but is likely to be the only way that PhD numbers can increase.

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

<b>Sub-areas</b>		<b><i>Non-compliant/ Partially Compliant/Compliant</i></b>
<b>6.1</b>	Selection criteria and requirements	Compliant
<b>6.2</b>	Proposal and dissertation	Compliant
<b>6.3</b>	Supervision and committees	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 each programme of study under review may be achieved, with emphasis on the correspondence with the EQF.*

The members of the EEC committee found the academic programmes in BSc in civil and environmental engineering, MSc/MEng and PhD in Civil Engineering to be compliant in all examined aspects that were evaluated through the virtual visit. It appears that the existing course offerings provide a balance between engineering fundamentals and practice through a number of activities. Moreover, active learning is encouraged through participation in laboratory activities, projects and internships.

A significant majority of former graduates (at least 80%) have been absorbed by private industry, nationally and internationally. Based on formal surveys and feedback from the already established alumni centre, former students are of the opinion that course offerings offer an effective contribution to the society, stakeholders as well as the engineering profession. Classrooms, laboratories are of high quality based on the virtual tour and supplemental material presented to the EEC committee. Noteworthy stating the library building as well as a number of modern facilities that are currently built to complement the existing ones.

With regard to teaching, formal procedures have been established so as student feedback is seen in a constructive manner for the further tailoring of existing coursework and other teaching resources. This also provides an opportunity to junior faculty to improve the course offerings and overall teaching experience. Moreover, the ratio of number of students-to-lecturers is about 1:10.

With regard to admission requirements in all academic programs, formal requirements/procedures have been established so as high-caliber students enter the university at all ranks. Moreover, doctoral student supervising/mentoring follows similar standards and practices of other academic institutions from around the world. Doctoral students are offered the opportunity to present their research and disseminate their research findings through participation in conferences and other scientific meetings. The faculty along with graduate students publish their scientific results in peer-reviewed journals in the field of discipline and promote open science. However, the EEC members noticed a gradual decline in admission over the past 5 years. While this may be related to the economic crisis, the department should monitor this carefully. Same findings hold true in the PhD admission.

A number of recommendations are suggested for consideration to ensure the future evolution of all programmes. These recommendations are summarized as follows:

1. Potentially new hiring of professors in core areas such as, water resources and management, energy efficiency of buildings, transportation systems with emphasis on road safety could be an asset to offer more opportunities particularly at the graduate and postgraduate level.
2. Course offerings in English should be seriously considered to ensure the attraction and potential increase of high-caliber international students. Student diversity is anticipated to be augmented as well in this way.
3. Some re-balancing in course allocation may be necessary. It appears that some junior faculty teach a number of core (large-audience) undergraduate courses. This seems to be compromising time from research, which is considered one of the pillars for tenure and promotion.

4. A formal junior faculty mentoring system should be established to provide guidance in tenure/promotion requirements early on in the process.
5. In particular direction specializations of the MEng/MSc programs, it appears that there is strong overlap between courses. It would make sense to consider reforming the programs by considering mandatory core courses between programs as well as electives to complement the requirements of the respective programs. Potential merges of the four specialization areas seem appropriate.
6. Potential future improvements with regard to digital resources in education (e.g., Massive Open Online Courses) as well as considerations in the graduate and post-graduate programmes. These could easily be organized in English.
7. Having more of the first year taught by Civil Engineering staff is recommended as this will ensure that students are more focussed on the profession, and can effectively comprehend how other core subjects (e.g., mathematics, physics or computer programming) link to Civil Engineering. This will ensure that students are exposed early on in their Civil Engineering degree, anticipating to have a positive effect on their first year retention; this could require some additional staffing. Many Civil Engineering faculty members will have the required knowledge to be able to teach the above subjects to first year students, and will be able to build in more relevant examples for students.
8. It is recommended that before the start of the new academic year the department holds a meeting/workshop where they consider student feedback and the experience from the COVID disruption, and whether any changes introduced then should be continued. In particular the provision of learning materials online, and the recording of lectures should be considered. While teaching staff will approach teaching in different ways and it is an important part of the student experience to experience different teaching styles, there should still be some level of consistency such as agreeing to use Blackboard or Teams for provision of learning materials and for student submissions of coursework.
9. While not teaching staff, there appears to be a shortage of technical staff who may be needed to support the work of the teaching staff and ensure that the students are able to meet all the practical requirements of a civil engineering degree. However, this should be carefully examined and coordinated with the university particularly when the new experimental facilities become available.
10. Some of the MSc/MEng courses have very low attendance (<5 students) and these may not be cost-effective to teach. On the other hand, teaching in English may lead to an increase in enrollment. This could also be complemented with an increase in submission of applications for external competitive funding (e.g., EU Horizon) so as the number of PhD students could also rise.

**E. Signatures of the EEC**

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