

Doc. 300.3.2

Date: 26/5/2021

# Higher Education Institution's Response

(Departmental)

- **Higher Education Institution:** Cyprus University of Technology
- **Town:** Limassol
- **School/Faculty:** Engineering/Civil Engineering and Technology
- **Department:** Civil Engineering and Geomatics
- **Programme(s) of study under evaluation**  
**Name (Duration, ECTS, Cycle)**

## Programme 1

### **In Greek:**

Πτυχίο Πολιτικών Μηχανικών

Πτυχίο Μηχανικών Γεωπληροφορικής

### **In English:**

BEng in Civil Engineering

BEng in Geomatics

## Programme 2

### **In Greek:**

Μεταπτυχιακό Πρόγραμμα Πολιτικών Μηχανικών

### **In English:**

MSc in Civil Engineering & Sustainable Design

## Programme 3

### **In Greek:**

Διδακτορικό Πρόγραμμα Πολιτικών Μηχανικών

### **In English:**

PhD in Civil Engineering and Geoinformatics

- **Department's Status:** Currently Operating



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ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ  
CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION





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

## A. Guidelines on content and structure of the report

- *The Higher Education Institution (HEI) based on the External Evaluation Committee's (EEC's) evaluation report (Doc.300.3.1) must justify whether actions have been taken in improving the quality of the department in each assessment area.*
- *In particular, under each assessment area, the HEI must respond on, without changing the format of the report:*
  - *the findings, strengths, areas of improvement and recommendations of the EEC*
  - *the deficiencies noted under the quality indicators (criteria)*
  - *the conclusions and final remarks noted by the EEC*
- *The HEI's response must follow below the EEC's comments, which must be copied from the external evaluation report (Doc. 300.3.1).*
- *In case of annexes, those should be attached and sent on a separate document.*

## 1. Department's academic profile and orientation

### **Sub-areas**

- 1.1 Mission and strategic planning**
- 1.2 Connecting with society**
- 1.3 Development processes**

### *Findings*

The department has developed coherent programmes both in the bachelor and graduate school that effectively prepare students for their professional development. Besides, a number of students enroll to highly competitive graduate programs from abroad (e.g., UK), which effectively demonstrates the level of preparation during the bachelor program. With regard to effective communication to the community and former graduates, several successful examples were demonstrated. Moreover, the department has a clear plan on maintaining its current program and expanding in emerging areas.

### *Strengths*

1. 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.
2. Students have several opportunities to collaborate in multidisciplinary projects. Examples evolve both at the local level (e.g., building design) as well as the urban scale level (e.g., city/network).
3. Sustainable design is integrated in both courses as well as practice-oriented work. This is key to create a culture on sustainability in future projects.
4. Assessment of existing structures: the department integrates a nice transition from teaching the fundamentals in mechanics/statics early on in the bachelor program to emphasizing with more focused courses (e.g., monitoring, assessment of existing structures under earthquake hazards) in the graduate program.

### *Areas of improvement and recommendations*

1. The department should consider hiring one or two professors in the general area of finite element analysis/computational mechanics; however, this recommendation is already taken into consideration. Based on discussions with existing faculty, it seems that the focus of potentially new hires will be in this area.

## **RESPONSE**

Based on the public budget acceptance for CUT, the Senate allocated 4 academic positions for the Department (Senate decision). As it has been explained to the evaluation committee, two of them will be dedicated to the Civil Engineering direction, in which one of them will be in the area of finite elements and another in a more general field.



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## 2. Quality Assurance

### Sub-areas

- 2.1 System and quality assurance strategy
- 2.2 Quality assurance for the programmes of study

### *Findings*

The applied procedures presented are fully satisfactory. We note the academic members concern and interest in new and emerging trends in the fields of civil engineering and the efforts to follow these evolutions in order to adapt the departments curriculum.

### *Strengths*

We note the variety of modes of conduct e.g. the strong and effective connection of the faculty members and the students with the industry and professional bodies, the links with other universities and research centres, the collaboration with the public and private sector and the obligatory practical training, result to the effective transfer of knowledge through various channels, which assures successful learning.

### *Areas of improvement and recommendations*

It is suggested that the members of the Department engage in a more frequent communication with the representatives of the Scientific and Technical Chamber of Cyprus (ETEK) who is a significant stakeholder. E.g., the committee finds ETEK's recommendation of the inclusion of Wood Structures / and or Masonry Design and Analysis a useful suggestion. The Department members informed the committee of their agreement to this remark and convincingly argued that those advanced courses would be hard to incorporate in a BEng programme. Such an explanation and discussion with ETEK would be beneficial for both parties.

### **RESPONSE**

From the very first stages of the formation of our Department since 2007, there has been close communication with the representatives of the Scientific and Technical Chamber of Cyprus (ETEK). We also co-organize with ETEK seminars and webinars on technical issues and some academics/teaching staff of our Department serve as members of the board of ETEK in the past and currently. It is important to highlight that Dr Nicholas Kyriakides (Assistant Professor) has been recently nominated by ETEK to be a member of the ETEK committee for registering new graduates in Civil Engineering. It is important to highlight that during the on-line meeting, we have been asked to present the written communication with ETEK about the possibility to include Wood Structures or Masonry Design and Analysis as a part of the syllabus. Indeed, we have already explained that such aspects are covered in other modules and there is no need for extra specialization. It is important to highlight that on annual basis during the graduate ceremony with the Faculty of Engineering and Technology, we have direct communication with ETEK for our syllabus and graduates' career. We considered ETEK as one of the key stakeholders of our Department.

### 3. Administration

#### *Findings*

The pandemic period obviously did not the possibility to the ECC members to enter directly in the department life, so that many of impression from a gelid visit on web could be not very reliable. From the presentation it comes out that the department has four different sites, and this could be a little bit dispersive.

#### *Strengths*

The high number of PhD student, with respect to the global number of students is very interesting, and this permits to focus the main effort in research, as it is possible to observe by considering the high number of contacts with abroad universities and stakeholders. Also, the participation in EU research programmes is very impressive.

#### *Areas of improvement and recommendations*

One aspect that the department should front in the future is to consider the institution of courses in English in order to increase the attraction for students from abroad. In fact, the participation of Erasmus students is very low. Moreover, the master programme could incorporate course offerings in English.

#### **RESPONSE**

We totally agree. The Department has already taken this comment under serious consideration and has already accepted to provide 4 modules in English based on the approval given by the Government of Cyprus. Also, in the direction of attracting Erasmus students, the respective Departmental Committee is in continuous communication with other European Universities, and we lately see a gradual improvement.



## 4. Learning and Teaching

### Sub-areas

#### 4.1 Planning the programmes of study

#### 4.2 Organisation of teaching

### *Findings*

The virtual visit and tour, and the discussions demonstrated that the policy of the department is compliant in all of the categories examined above. As indicated by the strengths below, the Department has taken several measures to provide a well-thought 4 years BEng degree that ensures the professional accreditation of students by ETEK. The program offers a good balance between theory and application. The courses are of high level. The delivery is clearly student-centred, and the facilities provided to the students are very reasonable to accommodate the number of students the Department admits.

### *Strengths*

The following are innovative solutions and strengths of the teaching policy of the Department:

- The Department offers additional tutorials to courses where the students are identified to have weaknesses.
- The decision on the above tutorials is monitored by independent academic staff and not the Lecturers of a course.
- The Department had already incorporated online means of teaching that help student-centred teaching. Those have become further important during the Covid-19 outbreak but are a very productive way to engage with students.
- The Department marks on the basis of homework, midterms and final exams and the marking scheme is announced to the students prior to the beginning of the course.
- The Department has provided a well-designed 4-year BEng course, and has intentionally not offered a 3-year option to avoid the discrepancy of the 4-year requirement for accreditation from ETEK.
- The Department is teaching courses that correspond to the state-of-the-art in terms of research and industry needs. The Health monitoring, infrastructure and sensor related courses are very novel and very useful for the students.
- The Department offers courses that are of high theoretical value for a BEng degree. The choice to offer more advanced courses on Earthquake Engineering is a good choice justified by the seismicity of Cyprus.

### *Areas of improvement and recommendations*

There are no serious weaknesses identified during the inspection and this is reflected in the above marks of compliance in various categories.

- A suggestion could be that it would be beneficial in the future to hold more frequent meetings to discuss and explain the Department's policy to ETEK including representatives of the student body in those meetings. Nonetheless, the Department has a good existing mechanism to account for the views of students and other stakeholders.

## **RESPONSE**

We agree. As it has been previously stated we will pursue discussing with ETEK and consider seriously their comments for the sustainability and continuous improvement of our degrees. We will arrange more frequent meetings including the student representatives. This will be facilitated markedly by the active participation of some of our faculty members at the ETEK board/committees.

## 5. Teaching Staff

### *Findings*

Based on the presentation sessions during the virtual visit, the department has 16 faculty members and 1 special teaching staff. Each one of them teaches, on average, 3 to 4 courses per academic year, which is deemed reasonable based on international standards. This enables balance between teaching, research and administrative duties. Moreover, the department hosts 19 special scientists and 20 research fellows along with 1 administrative officer. Overall, the administrative load is fairly balanced, and the role of each faculty member is clear. This stipulates a healthy academic environment and ensures high quality in both teaching and research.

### *Strengths*

1. Good balance of young, mid-career and senior faculty with complementary expertise to address current and future challenges in civil engineering.
2. Great technical depth in coursework particularly in the graduate programs.
3. While the department is fairly young, it ranks 57th in the times higher education young university rankings 2020.
4. The departmental facilities and laboratory space and equipment are of high quality. Noteworthy stating the large structures and earthquake engineering lab that features a strong floor and reaction wall for multidirectional mechanical testing of components and structures along with servo-hydraulic equipment of high quality, common in European large scale testing facilities.
5. Several laboratories (3100m<sup>2</sup>) for teaching and learning complement the department facilities and ensure active learning and hands on experience for students and scientists. Of particular interest is also the remote sensing and geo-environment lab/Geospatial analytics research laboratory, which enable data-centric teaching and research activities to students.
6. Two distinct course offerings that lead to accredited bachelor's degrees in civil engineering and land surveying and Geoinformatics engineering. Moreover, the fact that the department offers accredited industrial training ensures a seamless collaboration with industry.
7. Dedicated master's program with emphasis on sustainable design.

### *Areas of improvement and recommendations*

While the department is currently running in a fairly optimal way, the hiring of 2 to 4 new faculty could be an asset to maintain the existing trajectory and achieve even more over the next few years.

### **RESPONSE**

As stated in the previous comments, 4 new faculty positions have been approved. The recruitment procedure will start within the next months (Senate decision).

## 6. Research

### *Findings*

The virtual visit indicated a very successful Department in receiving external funding from various sources, which has achieved a good balance between very large European grants and smaller national grants to achieve research. The general research position of the Department is very strong. The Department has achieved several national grants for different research projects, led by different academics. The Department holds an EU Chair on the topic Mnemosyne and is involved in several other high impact EU funded projects. The Department has also been awarded a multi-million euros project (of the order of 44 m Euros) on the use of surveying techniques. The combined worth of the research projects would place the Department as a very successful department on an international level. The numbers presented are truly impressive and show a very prosperous department that has correctly identified several state-of-the-art topics and has managed their research portfolio very well. This is reflected in the points below where strengths are highlighted.

### *Strengths*

- The Department has invested in state-of-the-art research based on the use of sensors, infrastructure resilience and sustainability, life extension of infrastructure elements which are all very important topics for various research funding bodies.
- The Department has made use of the advantages offered by the location of Cyprus and the history of the country. Examples of that are the projects on digital cultural heritage which are numerous.
- The Department has diversified the funding bodies. It is very successful in pursuing smaller grants from the national funding body, large scale projects from the FP7 and Horizons 2020 frameworks and is part of projects with multiple partners such as ITN projects.
- The Department actively collaborates in several projects with other Universities.
- The research projects are materialised in high quality research outputs which is reflected in the numerous applications in high scientific journals.
- The funding success of the Department allows for the members of the Department to advertise well paid PhD studentships that can attract high quality candidates.
- The research of the Department is well matching the expertise of the members of the group.
- The Department is in a good position in terms of the research infrastructure, labs and field sensors.
- The Department has achieved a good integration between research and teaching. Research activities have led to innovative courses, such as those to infrastructure resilience, health monitoring and sensors. The earthquake engineering courses benefit from the related lab. All sensor-related courses benefit from the sensors obtained from research projects.
- The students are exposed to research activities at a satisfactory degree, the main mechanism is the 4th year thesis.

### *Areas of improvement and recommendations*

There weren't many weak points identified. This is reflected in the previously mentioned strong points. A potential area that the Department may consider when planning for the future is:

- Over the next few years, the younger members of the Department will gradually need to be taking the leading roles in the preparation of large European grants. There are, however, clear indications that the Department is taking the right steps towards this direction.

### **RESPONSE**

Thanking you for your nice words. We will do our best to facilitate the younger members in doing so. The co-operation of the Department with the newly formed Eratosthenes Centre of Excellence & ECXELSIOR H2020 TEAMING Project will significantly promote the research opportunities of our staff. The Department has already promoted the role of mentoring of young academics in both disciplines, civil engineering and geomatics, through the participation in webinars/workshops for funding schemes as well by providing incentives like research rewards (e.g. allocated budget).

## 7. Resources

### *Findings*

The web site and the virtual visits were well organized as well as the presentation performed by the director of the department. The department, as well as the university is young, and this probably is one of the strengths as it is evident the willing of growth that often in older universities is missing.

### *Strengths*

The level of research in term of publication per year and the found form competitive call show an active group. The facilities are adequate for the numbers of student and well organized.

### *Areas of improvement and recommendations*

Probably a gender equality policy in the department should be encouraged. Another suggestion consists in (if it is possible) use the impressive research found obtained since 2007 for increasing the number of academical staff which appears wake, but of course this is a political decision that involves also the public law, as we are evaluating a public university. The success in research can be used for asking extra resource in this direction.

### **RESPONSE**

The Department is aligned with the gender balance equality policy which was recently adopted by the University (Senate decision). Regarding the second recommendation, as we stated earlier, 4 new faculty positions have been approved. The recruitment procedure will start within the next months and the department is committed to work towards gender balance. The Department as presented in the on-line meeting has already been successful in attracting research grants (more productive within the whole university). Indeed, through the research funded projects there is a clear implementation of gender balance.

## B. Conclusions and final remarks

The members of the Committee found the Department to be Compliant in all the examined categories. The three programmes of the Department have scored the highest mark, 5/5, in most of the questions asked. The remaining questions resulted in the second highest mark, 4/5. This is an indication that the Committee has indeed been convinced about the policies followed by the Department.

The Department has been very successful Department in receiving external funding from various sources, achieving a good balance between very large European grants and smaller national grants to achieve research. The general research position of the Department is very strong. This is reflected in the number of PhD students, and the publications of high impact in international journals and conferences. The infrastructure of research laboratories is well tailored to the research directions of the group, and it is expected the continuous success of the academics in funding will likely result in a further improvement of the research infrastructure over the upcoming years.

Regarding teaching, all three programs are well-structured. The BEng is a 4-year program, a year longer than most of its European counterparts, this ensures that the graduating students are accredited by ETEK. The programme of study for the BEng familiarizes students to a very good variety of theoretical and design courses. Some novel courses related to rehabilitation and inspection of existing structures, monitoring of infrastructure, and sensors are demonstrating that the Department is incorporating the latest trends in Civil Engineering in the curriculum. The same is applicable to the MSc and the courses available to PhD students.

The committee were also satisfied to hear that the Department is planning to incorporate a new course related to FE through targeting the hire of new academics relevant to that field. The Department reasonably argued that the addition of some other courses identified by ETEK would be beneficial but would be difficult to implement currently and will be considered future planning. Perhaps, more frequent meetings between the Department and ETEK, also attended by representatives of the student body, can help parties understand priorities and limitations. The committee feels that the research success of the Department should justify the expansion through the hire of new academics which would potentially allow the inclusion of new elective courses. But overall, the committee was very much satisfied with the syllabus at all levels. A parameter that the Department should consider, especially for the MSc and PhD programmes is the incorporation of a programme in English or offering some of the courses in both Greek and English. Again, that would be easier to achieve through the hire of new faculty members.

The teaching rooms and labs were very good. The small number of students admitted per year in all programmes allows for having an excellent ratio of number of students to teaching staff. The lecturers are predominantly permanent tenure-track academics. The teaching staff and students are supported by an office dedicated to Learning and teaching with good initiatives such as organizing tutorials for courses and students in need. The Department also has a very good system to collect feedback and motivate student participation and feedback on a lecture-by-lecture basis using online software.

In terms of general facilities, the classrooms, open spaces, sports facilities, and libraries are very good. However, the decentralized nature of the Department has resulted in the use of buildings around the city. The Department would benefit from a central campus. This would further improve accessibility conditions. This is perhaps a decision that is related to the University; however, this Department has generally strengthened its position to request additional resources through its success in secure funding. The committee is also satisfied with the policies related to administration, the fact that the members of the Department participate in the administration several EU projects helps with the efficiency of the internal committees. Perhaps, a direction to investigate in the future in terms of both administration but especially the academic staff is to work towards increasing the ratio of female to male academic staff. This is however dependent on the national policy on the matter. Having an MSc option in English would potentially help the admissions procedure, especially in the MSc and PhD and may allow for more hires of international academic and administration staff.

Overall, the view of the committee is very positive. No serious areas of weakness were detected and in the above some areas for further improvement are suggested. This is a relatively young Department which has achieved funding success that is impressive on an international level. The members of faculty have used this success to further strengthen their teaching courses and research.



## **RESPONSE**

First and foremost, we would like to sincerely thank the members of the evaluation committee for their valuable time and for their thoughtful comments/suggestions towards the improvement of our undergraduate and postgraduate degree programmes. The Department considers the overall review procedure highly professional and extremely constructive. We have taken into serious consideration all the reviewer comments. We hereafter provided further explanations where needed, as well as outline the actions envisioned to be implemented towards addressing the recommendations set forth.



### C. Higher Education Institution academic representatives

<i>Name</i>	<i>Position</i>	<i>Signature</i>
Evangelos Akylas	Professor	

Date: 26/5/2021

