

**Higher Education Institution's Response**

**Conventional-face-to-face programme of study**

Date: Date

- **Higher Education Institution:** Frederick University
- **Campus:** Nicosia and Limassol
- **School:** Engineering
- **Department / Sector:** Department of Electrical Engineering, Computer Engineering and Informatics
- **Programme(s) of study under evaluation**  
**Name (Duration, ECTS, Cycle)**

**Programme**

**In Greek:** Μηχανική Ηλεκτρονικών Υπολογιστών (4 ακαδημαϊκά έτη, 240 ECTS, Πτυχίο (BSc))

**In English:** Computer Engineering (4 academic years, 240 ECTS, Bachelor (BSc))

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

**Programme's Status:** Currently Operating

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. Study programme and study programme's design and development

(ESG 1.1, 1.2, 1.7, 1.8, 1.9)

**All areas marked as compliant**

### Findings

1.a. *The ECC has found that Programme of Computer Engineering has been well structured, follows well-established principles, and reflects best practice. It meets the standard expected at international universities. There is a sufficiently efficient mechanism for feedback, where for each course, students provide their feedback via formal questionnaires and faculty members can adjust their teaching according to these feedback. The students have also been offered good opportunities for industry placements and internships. In addition, the faculty members have tried to bridge the gap between teaching and research, by feeding their research to their teaching. The department has a well organized administrative team, which support students and staff well. The student-to-staff ratio is 1:5, which is good. The dropout rate is 6.4% and the failure rate is 17%, which are a bit high.*

The Department agrees with the findings of the External Evaluation Committee (EEC) concerning the structure of the program as being well structured, reflects best practice and meets the standard expected at international universities, the mechanisms for collecting and handling students' feedback, the good opportunities for industry placements and internships, the exploitation of the synergies between teaching and research, the support to the students, as well as the student-to-staff ratio and the failure/drop-out rates.

### Strengths

1.b. *The ECC has found that Programme of Computer Engineering has been well maintained by the Department of Electrical Engineering, Computer Engineering and Informatics. In particular, the programme has been bi-yearly reviewed by the department. As a result, this programme has been offered to students at international standards for topics, quality of teaching, resources and infrastructures. The faculty members and the administrative staff have spent a great amount of efforts to build a supportive and friendly culture, which takes student feedback into account, and well support students for their studies. This has been particularly*

*important during the Covid-19 pandemic, where the department has provided various good practices to avoid too much disruptions to the students' learning. The student-to-staff ratio is low, which means that students are provided with sufficient support.*

The Department is satisfied with the observation of the EEC about the Program of Computer Engineering as being “at international standards for topics, quality of teaching, resources and infrastructure”, the positive comments on the framework employed during the pandemic and the good student-to-staff ratio.

### Areas of improvement and recommendations

1.c. *While the department has provided a formal channel for students to feed back their opinions and suggestions for individual courses, it is not clear to students how the department has taken this feedback into consideration. The department may want to build a regular staff-student meeting, which not only helps the students to understand the actions taken by the department towards the student feedback, but also helps the department to detect any potential issues at a very early stage, instead of waiting until the end of each term. Furthermore, such a staff-student meeting can ensure that students are involved in the development of the programme and the update of the curriculum.*

*Another recommendation is that the department may want to introduce a procedure which ensures that students can provide their suggestions to the whole programme, instead of just to individual courses. As a result, the curriculum of the programme can be effectively updated and tailored to students' needs.*

A number of schemes and mechanisms are in place that address students' feedback to the Department concerning their studies. However, the Department acknowledges the need for further improvement on how to address and utilize students' feedback and thanks the members of the EEC for their suggestions. To this end, the following will be employed by the Department:

- Following EEC's recommendation on the need to provide feedback to the students on their opinions and suggestions for individual courses, the Department will aggregate the suggestions provided anonymously by the students at the end of each semester

and report on how students' concerns and suggestions are addressed by the Department. This report will be part of the annual Program Self-Evaluation report and also made available to the students. It is also noted that course instructors collect feedback from students during the last lecture of the course. This feedback is also provided to the Program Coordinator and used in the annual Program Self-Evaluation report.

- Concerning the suggestion on having staff-student meetings on a more regular basis, it is noted that all students meet formally with their advisors twice throughout the semester (Consultations Weeks during the 5<sup>th</sup> and the 10<sup>th</sup> weeks of the semester), where they discuss issues concerning their performance and their studies in general. To address EEC's suggestion on the benefits of detecting potential issues at a very early stage, a questionnaire concerning each course a student is attending, will be used during the first Consultation Week, where he/she will provide his/her concerns for each course to the Department. These questionnaires will be examined by the Department right after the first Consultation Week, where corrective measures will be decided.
- Students are involved in the development of the program through their participation in all relevant bodies of the Department, while their feedback through the established students' questionnaires is indirectly considered in curriculum updates. Furthermore, the Department meets with a students' focus groups once a year, as part of the process employed for the annual Program Self-Evaluation report. These focus groups comprise of a number of 3<sup>rd</sup> and 4<sup>th</sup> year students. To address EEC's suggestion on having more regular meetings with the students, the Department will establish another annual meeting with all students of each program to discuss issues concerning their program of study.

1.d. *Regarding the regularly carried course review, the department may want to introduce a more formal procedure, where a formal course review report can be generated periodically, potentially problems can be identified earlier, and it is useful to involve external examiners for such course review activities.*

A procedure is already in place for program review and development which is regulated by the relevant University Regulation. According to this regulation all university programs must

undergo a revision every two years, following a predefined formal procedure. This procedure concerns the review of each course separately and the whole program curriculum. Furthermore, all courses are revised annually, with respect to minor changes in the course content, the bibliography and assessment methods and criteria. In this case, all changes are approved by the Department Council and the course website is updated accordingly. These changes are also reflected in the Course Outline given to the students at the beginning of the semester. At the Department level an Advisory Committee is in place consisting of stakeholders such as department graduates, employers, professional bodies and academics. This committee reviews and comments on the program revisions. Stakeholders such as students and graduates participate in the program review through their participation in focus groups within the Internal Quality System of the University. To address EEC's suggestion to external examiners in program revisions, the Department will utilize more academics acting as external examiners for program revisions.

1.e. *The progression rate of the students on this programme is a bit low, and the department may want to provide extra support to those students and avoid too much dropout/failure. In addition, more effective actions to improve gender and ethnic equality among students as well as staff are recommended.*

A study by [Debut Careers](#) among 140 UK universities showed that the average student drop-out rates in the UK is 6.3%, ranging from 1% to 18.6%. The drop-out rate for the BSc in Computer Engineering program is 6.4%, which is very close the UK average. However this figure should be ideally zero, since an increased drop-out rate could have a negative impact on the feasibility of the Department. For this reason the Department has adopted a number of measures that aim to reduce the failure/drop-out rates. The Department employs qualified senior level students who act as tutors to weak students, therefore reducing student course failures. A second measure is the organization of two Consultation Weeks in the 5<sup>th</sup> and the 10<sup>th</sup> week of each semester, where all students must meet with their advisors to discuss issues concerning their performance, thus identifying possible performance issues and employ corrective measures at an early stage. The measures mention on the previous section, concerning students' feedback are also expected to have a positive impact on the reduction of the failure/drop-out rate.

## 2. Student – centred learning, teaching and assessment

### (ESG 1.3)

#### All areas marked as Compliant

#### Findings

2.a. *The Department provides a supportive and encouraging learning environment to students, where students are not only supported by faculty members but also by the well organized administrative team. In addition, the department has also provided an encouraging environment to the teaching faculty members. The structure of the program reflects well the student needs for both what concerns education and personal wellbeing. The department implements a flexible process of teaching and learning which ensures the quality of the provided programme. The carried out teaching methods are appropriate. The department also integrates the applications and industry relevance into the programme teaching by providing more practical knowledge and experience to students.*

The Department agrees with the observation of the EEC concerning the supportive learning environment for its students and the encouraging environment for its faculty members, the appropriateness of the structure of the program and the flexible process of teaching and learning employed which ensures the quality of the program. Furthermore, the Department is satisfied by the observation of the EEC concerning its efforts to prepare its students for direct employment after graduation by integrating in the curriculum practical knowledge and experience. It should be stated that the BSc in Computer Engineering program is one of the undergraduate programs of the School of Engineering in which industrial placement is compulsory. With the course ACOE399 (Computer Engineering Practice), program students, during their 6th semester of study must work in the industry in a computer engineering related position.

#### Strengths

2.b. *The processes are well structured and clear. There is an overall understanding of the requirements for delivering of the programmes at international standards. The students on the programme have been well looked after, particularly during the Covid-19 pandemic. In particular, during the pandemic, the students were offered*

*well organized blended teaching, where interactive online lectures were combined with small-group face-to-face lab activities. These good practices have been well acknowledged and appreciated by the students on the programme. The teaching staff has been offered clear guidance, and there is a tutoring programme available to junior staff for their teaching. The department provides a good support to students for finding industrial placement and internships.*

The Department agrees with the observation of the EEC concerning the requirements for delivering the program at international standard, the good practices employed during the pandemic, the tutoring program for junior staff and the good support provided to students for finding industrial placement and internships.

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

*2.c. More actions for the moderation of assessments and marking are recommended. Currently, the main moderation mechanism for assessments is to ask unit leaders for checking the assessments. It is important to involve external examiners for such assessment moderations, where external examiners can check not only the formality of the assessments, but also the appropriateness of the content, given the fact that they are experts in the relevant fields. Furthermore, it is also important to introduce a formal procedure for marking moderation, which can ensure that the mistakes during the marking procedure can be detected at an early stage.*

The Department is employing the scheme of the Unit Coordinators, where the courses offered by its programs are grouped into Units according to their academic domain. Each Unit is assigned a Unit Coordinator who is the most senior faculty member in the domain. The Unit Coordinator has the overall responsibility for the courses in the Unit, including the moderation for course assessments. The Department intends to improve further this moderation mechanism by involving external examiners as well.

A formal procedure for marking moderation is currently in place for the final exams only, where students are allowed to review their marked exam documents and, if they wish, ask for a re-evaluation. The re-evaluation is carried out by another faculty member of the Department, and it is based and the exam solutions with the set rubrics. The exam solutions with the rubrics are provided to the student as well. It is noted that the re-evaluation is blind, both in terms of the name of the students and the initial markings. Following the above EEC's

recommendation, the University will adopt a similar procedure for marking moderation of coursework, so that possible mistakes are detected at an early stage.

*2.d. The department has a good practice to help junior staff for the preparation of their first teaching. It will be necessary to introduce a formal procedure for the education of academic teaching practice, similar to the training programmes offered in many international universities for academic practice and higher education.*

Training courses, seminars and workshops were organized by the University for its faculty members in the past. Some of these actions were related to the re-engineering of the academic programs using student learning outcomes and student workload, teaching and assessment methods, as well as a series of seminars during the pandemic on online teaching, online assessment and open book examinations. The University acknowledges the need for a formal procedure on faculty training. To this end, the Center for Professional and Personal Development was established with the first training sessions planned for this September. Training related to didactics will be compulsory for all teaching personnel.

*2.e. The programme covers very well fundamental areas of computer science as well as some more applied domains. However, a stronger connection with industry could offer the students useful insights on industry practices and industry needs making them better prepared for their job seeking at the end of the programme*

As noted earlier, the BSc in Computer Engineering program is one of the undergraduate programs of the School of Engineering in which industrial placement is compulsory. With the course ACOE399 (Computer Engineering Practice), program students, during their 6<sup>th</sup> semester of study must work in the industry in a computer engineering related position. The Department has a network of relevant businesses and organizations that host students during their industrial placement. It should also be noted that it is common for graduates to be employed by the employers where they did their industrial placement. Because the Department considers the employability of its graduates as one of its prime priorities, it will work in achieving an even stronger link with the industry.

2.f. *Actions to introduce formal procedure to involve students into the research activities carried out by the department are also recommended.*

Students of the Program are already involved in the research activities of the Department. The topic of the Thesis of many of the graduating students of the Program is related to the research activity of their Thesis Advisor. An impetus to this is the creation of research labs within the Department, with students being active members of these labs. It is noted that physical space is allocated to these labs where students spend time, something that helps them built a research culture. Furthermore, students of the Department volunteer to serve in the organization of local conferences, where members of the faculty serve in the organizing committee. Research related talks are organized by the Department in a number of occasions. Such talks are delivered by visiting Erasmus or research collaborators when they visit the Department, as well as talks given by the faculty members as a dissemination activity of research projects. Furthermore, all PhD students of the Department must give at least two open talks presenting their research work, one being their Dissertation defence. Following the above recommendation of the EEC, the Department works on formalizing a colloquium which will include all these talks. Program students must maintain a logbook on the talks they have attended, while a minimum number of talks will be set.

### 3. Teaching staff

#### (ESG 1.5)

#### Findings

3.a. *The EEC considered the submitted documentation and met with staff to understand the clarity and fairness of the approach on how the university recruits, appoints, inducts and supports academic staff in delivering high quality teaching, research and student experience. Based on these, the recruitment and selection procedure seems to be fair and clear, with a bit of room for improvement, as explained below.*

*There are currently 14 tenured or tenure-track academic staff involved in the program delivery. All faculty staff have a PhD. There are 70 students enrolled in the program. The teacher to student ratio is 1 teacher for every 5 students. This is much lower than the teacher to student ratio of the whole university (1 teacher for every 15 students, approximately).*

*The workload of faculty staff is approximately 40%-60% teaching and 40%-60% research. On average, faculty staff has had approximately three research publications published per staff per year, in the last five years.*

*The university is supporting its academic staff to undertake research and publish their research findings. Support is in both financial and time allowance terms, and includes for instance:*

- Compulsory training program for newly-hired staff, with an option to reduce their teaching load for an initial period;*
- Research support schemes on how to write research applications;*
- Internal faculty scheme for funding based on points, so that new faculty or faculty without a lab are eligible for points assessment.*

*Rules for teaching buy-out and for sabbaticals are predefined and published.*

*The promotion procedure is the rector's responsibility. The procedure is clearly communicated to faculty staff. Faculty can apply for promotion maximum twice. If they fail the second time too, then they have no more chances.*

*The CVs of existing staff demonstrate very good evidence of appointed academic staff having prior and relevant teaching and research experience in other higher education institutions. Research expertise and publication records are relevant and consistent to the program of study.*

*As a whole the teaching staff is highly commended by the students.*

The Department agrees with the finding of the EEC concerning the Teaching staff with respect to the recruitment and selection procedures, the teacher to student ratio, the teaching/research workload, the research expertise and publication record, as well as the staff promotion procedures

### Strengths

*3.b. The staffing base and the low number of students have contributed to an excellent Student-Staff Ratio (SSR) that is five to one. Staff expertise is overall consistent with the program of study and it seems that they receive appropriate support to undertake research (flexible points-based scheme to support faculty in their research development).*

*Newly appointed staff have to undergo a probation process, while all other staff have to undergo an annual performance evaluation review.*

*There are clear criteria for different teaching ranks (professor, associate professor etc) and clear guidelines for progression and promotion.*

The Department agrees with the observations of the ECC concerning the excellent SSR, the support to undertake research, the staff performance evaluation and the staff ranks.

### Areas of improvement and recommendations

*3.c. There is a lack of organised, structured and compulsory training support for faculty staff. This should be integrated into the newly established centre for personal and professional development for staff, which is about to begin operating.*

As mentioned in section 2.d above, training courses, seminars and workshops were organized in the past by the University for its faculty members. Some of these actions were related to the re-engineering of the academic programs using student learning outcomes and student

workload, teaching and assessment methods, as well as a series of seminars during the pandemic on online teaching, online assessment and open book examinations. The University acknowledges the need for a formal procedure on faculty training. To this end, the Center for Professional and Personal Development was established with the first training sessions planned for this September. It is noted that training related to teaching and assessment will be compulsory for all academic staff. Furthermore, faculty members will attend the didactic seminars planned by the Cyprus Agency of Quality Assurance and Accreditation in Higher Education planned for the academic year 2021/2022.

*3.d. There are no procedures for staff peer review during teaching*

As mentioned in section 2.c above, the Department is employing the scheme of the Unit Leader, where the courses offered by its programs are grouped into units according to their academic domain. Each Unit is assigned a Unit Leader who is the most senior faculty member in the domain. The Unit Leader has the overall responsibility for the courses in the Unit, including the moderation for course assessments. Following the EEC's recommendation, the Department is working on improving further this scheme by developing a system involving external examiners in a staff peer review system.

*3.e. Student aggregated feedback following the course evaluation survey should be used in the program review procedures. There is a student survey which gathers student feedback which is being used for staff evaluation purposes but not used as part of the annual program of study review and self-assessment.*

According to the Internal Quality System of the University, students complete a questionnaire at the end of each semester for each course they have attended during the semester. This questionnaire comprises two parts. The first one concerns the instructor of the course and the second the course itself. The part concerning the instructor is used by the instructor for self-improvement, and by the Department during the annual Staff Appraisal. The second part is used by the Department in the annual Program Self-evaluation Report, as well during the program review process. Furthermore, students and graduates participate in the program review through their participation in focus groups within the Internal Quality system. To address the above EEC's suggestion the Department will work on improving the procedures employed and the contribution of the students in the program review.

3.f. *New academic staff are not always assigned a mentor*

According to the University Regulations all new academic staff must be assigned a mentor. Furthermore, visiting staff is also always assigned a mentor. The relevant regulation is in place for the last three years. During this period, there was only one case of a new academic staff, a person who has previously served as a visiting staff, with a mentor assigned. It is ensured that the Department will comply with this regulation whenever new academic staff is hired.

3.g. *Teaching assistants or lab assistants receive no formal didactic training. This should be amended*

It is noted that all laboratory components on the Program are part of the corresponding theoretical courses. Teaching or lab assistants are always under the supervision of the faculty member responsible for the delivery of the corresponding course. Until now, teaching and lab assistants did not receive any formal didactic training. Following the EEC's recommendation, the Center for Professional and Personal Development will include in its program didactic training for teaching and lab assistants, which will be compulsory. Furthermore, all new teaching and lab assistants will go through compulsory induction training.

3.h. *Even though there is a sabbatical scheme, no faculty staff has ever made use of it. The reasons behind this should be investigated and the scheme should be revised accordingly*

This problem holds for most Departments of the University. Taking advantage of the scheme of sabbatical leave is essential for the research development of the University and the Department. The University is working on finding ways to address this issue by specifying and providing motives to the faculty taking a sabbatical leave.

#### 4. Student admission, progression, recognition and certification

(ESG 1.4)

##### Findings

4.a. *Appropriate admission requirements are in place and clearly communicated. The minimum requirements for being accepted to the program are decided by the department, and they are currently 75% or equivalent across all subjects. All applicants must take a test in Mathematics and English before their enrolment. Failing the test requires an enrolment with a probation status with the requirement to attend foundation courses. The medium of instruction is English and a proficiency certificate is the minimum language requirement.*

*There are appropriate plans to support student progression and attainment. Academic advisors and tutors are available to support and monitor student progression. The grading and degree classification systems are comparable to other national and international Higher Education Institutions.*

*Students' progress given the learning outcomes is continuously monitored with exams, tests, projects, practical assignments. Students receive constructive feedback on their progress in both courses and practical project work.*

*There is no limit on re-examinations for students. Student may complain about their exam grade up to two weeks after the grade announcement. They have the right to ask for a re-assessment. Overall, the procedure for examinations and related complaints is appropriate, predefined and clearly communicated to students.*

*The program operates on a credit accumulation basis. If a student has not passed a course, he/she can only proceed taking courses whose prerequisites he/she has passed. Overall, if the GPA of a student is less than 5, he/she enters academic probation. An academic advisor discusses this academic path with the student. Twice per semester there is consultation week for students.*

*Teaching and facilities are offered on both campuses, so students do not have to travel away from their campus. Each campus is assigned a campus coordinator.*

*About 15% of the students extend the duration of their study, but the reasons behind this have been investigated and have to do mainly with absorption of graduate by the industry before the program is completed.*

The Department agrees with the finding of the EEC concerning student admission and support through foundation courses, student progression and support mechanisms, and students' duration of studies.

### Strengths

4.b. *Computer storage is offered to students.*

*There are initiatives to retain and attract more students, for instance distance learning, joining this program with other programs.*

*Students are offered counselling and support on academic, financial, career, internship/exchange, legal & IPR, psychological, disability, and other issues.*

*Students do not have to travel to another campus for lectures or services.*

The Department agrees with the observations of the ECC concerning the computer storage available to the students, the initiatives to retain and attract more students, the services provided to the students, as well as the fact that all classes and services are provided for the students at both campuses locally, ensuring that students do not have to travel to another campus for lectures or services.

### Areas of improvements and recommendations

4.c. *A formal feedback on assessed coursework and assignments should be consistently provided in all modules*

According to the University Regulations all assessed coursework, lab reports and assignments must be corrected and returned to the students properly annotated with comments within two weeks from the submission date. The rubrics used for marking students work must also be provided to the students in advance. Compliance to this regulation by the faculty is checked with two questions in the students' questionnaires completed by all students at the end each semester. The first question concerns the compliance with respect to the date when the

corrected work was returned to the students and the second concerns the compliance with respect to the feedback provided to the students. Aggregated feedback from the students, through these questionnaires, shows that the majority of the teaching staff complies with this regulation. The Department will work on establishing procedures that will ensure that all teaching staff comply with this regulation for all courses they teach.

4.d. *The number of students is too low, and this compromises the long term sustainability of this program. The EEC recommends the development of an action plan to help increase the number of applicants and of enrolled students over the next years. There are very few female students and there seems to be no structured and long-term plan for turning this around*

The Department acknowledges the importance of the number of students in its programs. Efforts are made to increase the number of enrolments with a variety of measures and actions. Even though an increase in the number of enrolments is being observed in the past two years, the Department will increase its efforts to this end. As far as the number of female students is concern, efforts are made to attract more female students in all engineering programs through a number of measures. Among these measures is the offer of a 50% fee reduction to all new female students in all programs of the School of Engineering.

An integral part of Frederick University's identity and operation is its strategy for sustainable development. The United Nations Sustainable Development Goals are the path that will lead to a healthy planet, peaceful world that everyone enjoys a health, security and prosperity. This cannot be achieved without the emancipation of women. As part of the University's policy is to promote gender equality over time and to empower all women and girls so that they can meet the current challenges and become the change our world needs.

The University has launched a long-term campaign with the aid of successful women in the fields of Engineering, as a source of inspiration for young girls, as well as promoting the prospects of pursuing a career in Engineering and Technology. In addition, as part of the campaign, the University is currently offering scholarships to female applicants wishing to study in undergraduate programs under the School of Engineering. The campaign can be found via the social media of the University (Scholarships for Women in STEM ([Link](#)), Women and Girls in Science ([Link](#))) and the policies regarding equality, diversity and inclusion matters are published in the University's website; (a) University Policies ([Link](#)) (b) The role of Frederick

University in gender equality issues ([Link](#)), (c) Participation in ACT-on-Gender European Project for gender Equality ([Link](#))

4.e. *Some students reported that they had to travel to another campus for an elective course, or that an elective course was cancelled when there were not enough students enrolled. Action should be taken so that this does not happen regularly.*

As stated earlier, in section 4.b, all course, both core and elective courses, as well as infrastructure and services are equally provided for the students at both campuses, ensuring that students do not have to travel to another campus for lectures or services. Very rare exceptions to this were allowed, only after a request by the student, for the benefit of the student and under the condition that the student's timetable could support it, that is, the student did not had to attend courses on the same day at both campuses. The Department considers this very critical and will ensure that under no circumstances students will need to travel to another campus for the needs of a course. As far as the fact that an elective course was cancelled due the small number of students enrolled, this can happen very rarely, since there is a minimum class size requirement to ensure a proper teaching/learning environment. It is noted that all electives are offered yearly, with some exceptions, where some electives are offered every other year. Furthermore, it is noted that most of the elective courses for the Computer Engineering program are also available for the Computer Science and/or the Electrical Engineering students, ensuring that enough student are enrolled.

4.f. *Some projects are sometimes assessed by the supervisor and by an external examiner. It is not guaranteed that the external examiner has a PhD. This compromises the quality of the program.*

According to the Project Regulations of the Program, projects are assessed by the student supervisor and a second examiner. In many cases the second examiner is a qualified external examiner with special expertise related to the content of the project. The external examiner is usually an academic or a researcher, approved by the Project Coordinator. In very rare cases, the external examiner was not a PhD holder. Following the recommendation of the EEC, the Project Regulation will change in order to ensure that all external examiners are qualified PhD holders.

## 5. Learning resources and student support

(ESG 1.6)

**All areas marked as Compliant**

### Findings

- 5.a. *The students confirmed in the meeting with EEC that they are very satisfied from the department's policies and mechanisms for communication with the faculty and admin staff. Furthermore, they are also satisfied with the study programme as well as with its flexibility. The department offers to the students free of charge software packages as Matlab, etc. They have access through the VPN of the university. Also, it offers free of charge to the students cloud computing application, as the one drive. The offered facilities and learning resources are of high level. Also, the university provides access to major databases, as ACM, Science Direct, etc, through the participation in the Cyprus Academic Libraries Consortium (CALC). The Department supports and encourage students' mobility, through several relevant programs as Erasmus, etc. Also, the Department has a very active participation in different mobility programs with third countries, as Erasmus Mundus, INDACT, etc. It is very positive that the University provides scholarships and financial support for the students through several programs, as the Freshman Scholarships, Academic Performance Scholarships, etc. There are other assessment methods in addition to the end-of-semester final exams. Also, the department gives special attention to the project, which in most of the times is research oriented.*

The Department agrees with the finding of the EEC concerning the learning resources and is satisfied with the confirmed student satisfaction on the Department and the Program itself, as well as the positive impression expressed by the EEC on the learning facilities and resources and financial support offered to the students

## Strengths

5.b. *The learning resources and student support services are in a very good level. This was confirmed from both students and staff members during the face-to-face evaluation. This is very critical, since it allowed the smooth and efficient teaching during the pandemic.*

The Department agrees with the positive position of the EEC concerning the learning resources and student support services, as well as the processes employed to support students with learning difficulties or hidden disabilities

## Areas of improvement and recommendations

5.c. *Although there is ongoing development of new teaching Labs, it is very critical the department to develop a 5-years plan for refreshment of the teaching Labs' facilities, due to the dramatic change of the technology in the last years. Especially, the new facilities should include modern methods of lab education as virtual and augmented reality, artificial intelligence, etc*

At the university level, a 10-year strategic plan is in place. Departments implement the university's strategic plan by developing their 5-year strategic plans. One of the pillars of the current strategic plan of the Electrical and Computer Engineering and Informatics Department is the pillar of laboratory infrastructure. This plan includes the establishment of new laboratories, the acquisition of new lab infrastructure and the refreshment of the existing facilities. Concerning the lifecycle of hardware, the policy employed by the Department is to replace laboratory computers every four to five years. Concerning the lifecycle of software, there is no specific time limit, since most software is under annual licenses. In most cases new software versions are obtained with the renewal of the license. Concerning the rest of the computer engineering labs infrastructure, the lifecycle for most items such as PC based instruments, FPGA and microcontroller boards etc, is in most cases three to five years. In response to the ECC's recommendation, the Department will improve further its laboratory infrastructure and include new technologies, such as virtual/augmented reality and AI in laboratory teaching.

5.d. *It is not clear if there are adequate facilities for students with moving disabilities, which allow them to attend teaching and labs, with minimum assistance. The department should give special attention on this issue*

All of the University's buildings have been constructed in order to provide easy access and use of facilities for students, employees and guests with moving disabilities. These provisions include designated parking areas, appropriate ramps to enable entrance to the buildings and designated toilets. Furthermore, all lecture rooms and laboratories are arranged in such a way to allow students with moving disabilities attend lectures and carry out their laboratory work, while provisions to be assisted by fellow students are in place.

5.e. *The program chair should ensure that the offered free of charge software packages should be available to all students for their courses, homework, etc*

The University has acquired additional licenses that students of the School of Engineering can use on their own computers for MATLAB (full version, all toolboxes), SolidWorks, Autodesk software (AutoCAD, 3DS Max, etc.), and Microsoft Office 365. All students of the Department are also provided with free access to Microsoft IMAGINE, through which they have licenses to additional software such as the Visual Studio Community and the Microsoft Azure for Students. Furthermore, Computer Science and Computer Engineering students are provided with user accounts for the online SQL and MySQL Servers.

In order to enable students have access to all software needed for their homework at any time, the University offers to its students the Virtual Computer Lab (VCL) service that enables them to stream specific academic software applications from their own computers at any time from any location by connecting to the Frederick University network over VPN. The VCL is accessed via a web-browser interface and is platform independent, while it removes the need for software installations and troubleshooting issues. The VCL enables students to remotely access any computer available in the Computer Labs on both campuses. The only limitation on the use of licensed software is that, at any time, the maximum number of licenses for the specific software is not exceeded.



5.f. *The department should find a way to provide free access to the students to IEEE Xplore. This is the most important database for computer engineering*

Frederick University is a member of the Cyprus Academic Libraries Consortium (CALC). Through this consortium, academic staff and students have access to a large number of international databases either through on-site direct connections, or from their own computers at any time from any location by connecting to the Frederick University network over VPN. Through the collaboration and membership with CALC, students of the University can have access to all publications offered through IEEE Xplore.

## 6. Conclusions and final remarks

6.a. *The EEC evaluated the BSC program of Computer Engineering offered by the Department of Electrical Engineering, Computer Engineering and Informatics at Frederica University. The EEC members have been provided with the detailed accreditation report and also a remote site visit which offered the EEC to have direct discussions with the staff and the students in the department. Based on these provided information, the EEC concludes that the program being evaluated have high standards and meet the quality expectations. The Covid-19 pandemic has caused an unprecedented situation, and the EEC is particularly impressed by the efforts of the department to provide proper and fast efforts to adjust the teaching and support students. In particular, blended teaching was carried out, where online lectures were combined with face-to-face lab activities. Students enrolled in the programme confirmed that they appreciate the interactive online lectures and the extra help from the department. **Overall, the EEC is convinced that the program has been delivered at an international standard, and the Department offers an excellent learning environment for students.***

*There are a few areas of improvements which have been identified by the EEC, as listed in the following.*

- 1. Actions for more interactive student feedback mechanisms are recommended.*
- 2. More effective moderation mechanisms for assessments and marking should be introduced.*
- 3. Formal training programmes for academic teaching and practice can be particularly helpful to the faculty members.*
- 4. Actions to increase the cohort size and improve the sustainability of the programme are needed.*
- 5. Actions to improve gender diversity among students and staff are recommended.*
- 6. Actions to have a carefully planned timetable and ensure that the use of two campuses will not cause disruption to students' learning are needed.*
- 7. More efforts to update the teaching facilities in order to accommodate the updated teaching are recommended.*



*8. Actions for disability and learner support are recommended.*

The Department thanks the members of EEC for their useful comments and suggestions made in person during the virtual meeting and in their evaluation report. The Department expresses its satisfaction for the positive remarks, especially the conclusive remarks that the program has “high standards and meet the quality expectations” and that “the program has been delivered at an international standard, and the Department offers an excellent learning environment for students”. All recommendation for improvement specified in the main body of the report as well as the ones repeated above in the conclusion section are considered by the Department, while specific actions are provided in the main body of this text.



## B. Higher Education Institution academic representatives

| <i>Name</i>               | <i>Position</i> | <i>Signature</i>                                                                    |
|---------------------------|-----------------|-------------------------------------------------------------------------------------|
| Prof. George Demosthenous | Rector          |  |

