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# External Evaluation Report (E-learning programme of study)

- Higher Education Institution:  
University of Nicosia UNIC
- Town: Nicosia
- School/Faculty (if applicable): School of Humanities  
and Social Sciences
- Programme of study- Name (Duration, ECTS, Cycle)

In English:

Computational Design and Digital Fabrication» (1,5  
academic years/90 ECTS, Master of Science,  
E-Learning, Re-Evaluation

- Language(s) of instruction: English
- Programme's status: Not accredited



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

## A. Introduction

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

Our committee, as listed in Point B, visited the University of Nicosia on the 12th of February to re-evaluate the e-learning programme “Computational Design and Digital Fabrication”.

The visit was very well organized, for which we would like to thank in particular the Cyprus Agency of Quality Assurance and Accreditation in Higher Education, especially (CYQAA), Ms Droso Lavithi (Education Officer) and the entire team of the University of Nicosia (UNIC).

The on-site meeting included amongst others a meeting with the Rector/Head of the Institution Prof. Philippos Pouyioutas, a meeting with the Head of the department of humanities and social sciences Prof. Klimis Mastoridis, a meeting with the Coordination Committee of the programme, especially Michalis Georgiou and Pavlos Fereos, a meeting with administrative staff, a meeting with students and alumni, and a visit to the ARC architectural research center facilities of the University of Nicosia. A live teaching visit was scheduled but not conducted, otherwise everything was carried out exactly as planned.

## B. External Evaluation Committee (EEC)

<i>Name</i>	<i>Position</i>	<i>University</i>
Christopher Robeller	Chair	Professor for Digital Design and Production, Augsburg University of Applied Sciences
Kostas Grigoriadis	Member	Associate Professor in Digital Design and Fabrication with Multi-Materials, Bartlett School of Architecture
Henriette H. Bier	Member	Associate Professor, Technical University Delft (TUD), Leader Robotic Building (RB), Associate TU Delft Robotics Institute (DRI)
Hatzipanagos Stylianos	Member (E-Learning Expert)	Professor, University of London Centre for Online and Distance Education
Ms Niki Georgiou	Member (Student)	Open University of Cyprus

## Guidelines on content and structure of the report

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

### Findings

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

### Strengths

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

### Areas of improvement and recommendations

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

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

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

Sub-areas

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

1.1 Policy for quality assurance

Standards

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

1.2 Design, approval, on-going monitoring and review

Standards

- *The programme of study:*
  - o *is designed with overall programme objectives that are in line with the institutional strategy and have explicit intended learning outcomes*
  - o *is designed by involving students and other stakeholders*
  - o *benefits from external expertise*
  - o *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)*
  - o *is designed so that it enables smooth student progression*

- o is designed so that the exams' and assignments' content corresponds to the level of the programme and the number of ECTS*
- o defines the expected student workload in ECTS*
- o includes well-structured placement opportunities where appropriate*
- o is subject to a formal institutional approval process*
- o 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*
- o is regularly monitored in the light of the latest research in the given discipline, thus ensuring that the programme is up-to-date*
- o 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*
- o 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:*
  - o selection criteria*
  - o intended learning outcomes*
  - o qualification awarded*
  - o teaching, learning and assessment procedures*
  - o pass rates*
  - o learning opportunities available to the students*
  - o graduate employment information*

### 1.4 Information management

#### Standards

- *Information for the effective management of the programme of study is collected, monitored and analysed:*
  - o key performance indicators*
  - o profile of the student population*
  - o student progression, success and drop-out rates*
  - o students' satisfaction with their programmes*

- o learning resources and student support available*
- o 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.*

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

#### 1.1 Policy for quality assurance

The policy for quality assurance has:

- a formal status that 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 to some degree that academic integrity and freedom and is vigilant against academic fraud (the impact of AI has not yet been considered)
- 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

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 to some degree by involving students and other stakeholders (with students appreciating the course for the possibility to study part-time, while teaching staff requesting full-time participation).
- benefits from external expertise (with one of the tutors being staff member of UIBK in Austria, where the students participate in a 2 weeks workshop).
- reflects the four purposes of higher education of the Council of Europe (preparation for sustainable employment, personal development, the development and



maintenance, through teaching, learning and research, of a broad, advanced knowledge base)

- is designed so that it enables to some degree smooth student progression (with the content and methods involving computational fabrication not having been introduced in BArch).
- 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

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
- learning opportunities available to the students

### 1.4 Information management

Information for the effective management of the programme of study is collected, monitored and analysed:

- key performance indicators
- profile of the student population
- students' satisfaction with their programmes to some degree (interviewed students expressed the need for more frequent feedback and increased time allocated to the workshops that tutors were not aware).
- 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.

### Strengths

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

All categories from (1.1) policy for quality assurance to (1.2) design, approval, on-going monitoring and review, (1.3) public information, and (1.4) information management meet to a large degree EU standards.

The main strength is identified in the online/ blended mode of the program with the possibility of part-time participation. Of particular relevance is that (1.2) the program benefits from external expertise with tutors from UIBK being involved in teaching the students and the students spending 2 weeks on the UIBK campus.

The content of the program is focused on computational design and fabrication, which is relatively novel and relevant for the education of the 21st century architects. The reviewers appreciate the ambitious and both scientific and societal relevance of the program. The reviewers recommend embracing the implicit blended and part-time character of the program and suggest changing the name of the program into ‘Computational Design and Fabrication’.

### 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 program ensures to some degree that academic integrity and is vigilant against academic fraud (1.1) but AI is not yet addressed, which leads to (1.1) being partially compliant. The reviewers recommend introducing AI-related considerations to the program.

Design, approval, on-going monitoring and review (1.2) is designed to some degree by involving students and other stakeholders, there is, however, a discrepancy in expectations, with interviewed students appreciating the course for the possibility to study part-time, while teaching staff requesting full-time participation), which leads to (1.2) being partially compliant. The interview revealed that 4 of 5 students worked in the first year full time and in the last half year part-time; they have chosen the course because of this flexibility. The reviewers recommend to align expectations.

The program is designed to enable to some degree smooth student progression, however, with the content and methods involving computational fabrication not having been introduced in BArch and the students having various backgrounds, the smooth progression is a challenge. The reviewers recommend introducing computational fabrication in the BArch / MArch education.

Students’ satisfaction with their programmes is to some degree monitored, however, interviewed students expressed the need for more frequent feedback and increased time allocated to the workshops that tutors were not aware of.

The Environmental Design (10%) presentation in ARCH-582DL Performance Based Design covers climate analysis, process, orientation, daylight, and energy modelling. However, ARCH 592DL is about a computational process or a fabricated building element. This is because delivering full building designs cannot be done in the time that is available, as the Programme Coordinators explained. A suggestion would therefore be for the Environmental Design (10%) presentation to cover issues of embodied carbon and life cycle analyses that can then be used to assess the environmental and material impact of the built elements / structures.

The project criteria in the theses could be more clear and explicit. Structural or environmental parameters from ARCH-582DL could feed into the final theses to form solid criteria.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>
1	Policy for quality assurance	<i>Partially Compliant</i>
1.2	Design, approval, on-going monitoring and review	<i>Partially Compliant</i>
1.3	Public information	<i>Compliant</i>
1.4	Information management	<i>Partially Compliant</i>

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

### Sub-areas

- 2.2 Process of teaching and learning and student-centred teaching methodology
- 2.3 Practical training
- 2.4 Student assessment
- 2.5 Study guides structure, content and interactive activities

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

#### Standards

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

### 2.2 Practical training

#### Standards

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

## 2.3 Student assessment

### Standards

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

## 2.4 Study guides structure, content and interactive activities

### Standards

- *A study guide for each course, fully aligned with e-learning philosophy and methodology and the need for student interaction with the material is developed. The study guide should include, for each course week / module, the following:*
  - o *Clearly defined objectives and expected learning outcomes of the programme, of the modules and activities in an organised and coherent manner*
  - o *Presentation of course material, and students' activities on a weekly basis, in a variety of ways and means (e.g. printed material, electronic material, teleconferencing, multimedia)*
  - o *Weekly schedule of interactive activities and exercises (i.e. simulations, problem solving, scenarios, argumentation)*
  - o *Clear instructions for creating posts, discussion, and feedback*

- o *Self-assessment exercises and self-correction guide*
- o *Bibliographic references and suggestions for further study*
- o *Number of assignments/papers and their topics, along with instructions and additional study material*
- o *Synopsis*
- *Study guides, material and activities are appropriate for the level of the programme according to the EQF.*

*You may also consider the following questions:*

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

### Findings

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

The nature of the programme is compatible with e-learning delivery, despite the fact that it contains a significant component of face-to-face attendance (four weeks in total) for students both at Nicosia and Innsbruck. This blended aspect of the programme allows the students to acquire the practical skills they need and achieve related learning outcomes. This transition from online to face-to-face interactions seems to be well designed.

The EEC was given access to two examples of interaction in the programme, which seem to follow an effective model of dialogue and interaction between students and staff. We did not see any examples of interaction between students or evidence of how peer learning is supported. We were also given access to the VLE where there was evidence of a consistent structure to support student learning. Some of the sections, e.g. resources would benefit from better signposting and some further explanations on their purpose and where they do fit exactly within the student journey and set of activities.

All related initiatives are supported by the Distance Learning Unit, and the thinking behind the pedagogy and implementation seems to be robust. Quality assurance mechanisms function well, maintaining standards and providing a consistent approach to the design of online and distance learning programmes at the University.

The EEC had the opportunity to meet 5 students (2 graduate and 3 current students) and canvas for views about their student experience. All students seemed to be happy with the course and satisfied with the level of support they received (administrative and academic) in all courses, including the thesis. One of the students felt that feedback could be enhanced in the programme at least in terms of timeliness. Some of the students highlighted the difficulty of finding local labs at their location. The alumni received non organised/informal support (from the programme coordinators and members of staff) when they explored post study career options and they found these useful and fruitful. However, they were not aware of any career choice facilities at the university.

The EEC reviewed the programme documentation and study guides for all courses. The study guides in particular were well written and had the appropriate level of detail, providing a week-by-week description of content, activities and assessments, despite the fact that some of the descriptions about activities and assessments did not offer much specificity. The learning outcomes were appropriate and corresponded to the postgraduate level of study. An improvement would have to do with a rationalization of the learning outcomes for every programme. There seemed to be too many of them and it was not always clear how they related/linked to specific activities and assessments. Organising the LOs under themes would also help.

The EEC had the opportunity to review sample exam papers which seemed to be well designed and at the right level. Exams are taking place online, using a proctoring system (Proctorio) and

there is no evidence of serious academic offenses or academic integrity issues. The MSc thesis is supported and constitutes a significant part of the programme.

### Strengths

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

- Organization and Quality of the programme documentation. There is an appropriate level of detail, particularly in the study guides .
- Student satisfaction with the programme both from current students and alumni.
- Support infrastructure for distance learning students in the programme and via the university support services, to accommodate all students inc. those students with special needs, particularly in the context of distance learning
- Adequate training and induction opportunities in e-learning particularly for staff and students .
- A thesis component which puts appropriate emphasis on research methods.

### 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.*

- Opportunities to engage with labs at students' locations should be published widely and linked to career advice the university provides. This should not be a problem considering the university's international collaborations and will address the students' concerns that they cannot always find local resources where they study.
- The small number of students in each cohort makes establishing an active online community challenging. Some strategies have been in place to strengthen this community (e.g. reducing the number of electives), however student engagement for such a small cohort could be a problem. This led to partial compliance for 2.1. and 2.4.
- The EEC requested to see examples of recordings from interactive online sessions with the students. We reviewed two interactive sessions where tutors worked with students in an online environment.
- The university has a policy on the use of AI in place and related guidance. We would recommend that the programme team articulated how this is applied to the context of this particular programme both from a disciplinary and pedagogical point of view. This is crucial in assessment and establishing a framework for the use of generative AI in the programme.

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



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

### 3. Teaching staff (ESG 1.5)

#### Sub-areas

- 3.1 Teaching staff recruitment and development
- 3.2 Teaching staff number and status
- 3.3 Synergies of teaching and research

#### 3.1 Teaching staff recruitment and development

##### Standards

- *Institutions ensure the competence of their teaching staff.*
- *Fair, transparent and clear processes for the recruitment and development of the teaching staff are set up.*

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

### 3.2 Teaching staff number and status

#### Standards

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

### 3.3 Synergies of teaching and research

#### Standards

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

*You may also consider the following questions:*

- *Is the teaching staff qualified to teach in the e-learning programme of study?*
- *How are the members of the teaching staff supported with regard to the development of their teaching skills? How is feedback given to members of the teaching staff regarding their teaching results and teaching skills?*

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

### Findings

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

#### Teaching staff recruitment and development

- Teaching staff number and status – There are currently eight teachers in the programme, two of which are full time employed, four of them are part time employed and two with collaboration agreements (such as for thesis coordination). Considering the number of students, modules, ECTS, the number of teachers seems good for the programme.
- The e-learning skills of the teachers seem very good, the University (UNIC) is offering very good support (support for students with online teaching systems and resources) and equipment (online systems, recording cabins etc), which is utilized and benefits the course.
- As for the status, one of the programme directors is an Associate Professor (at UNIC) and one of the part time staff is an Assistant Professor (at UNIC), the other staff are senior researchers and adjunct faculty. As for professional qualification, several of the teachers have practical experience in well recognized practices in the building industry (high-ranking, such as Foster and Partners), as well as professional practice qualifications such as accreditation by architectural / engineering registration boards or the qualifications to be registered with such boards. Both main coordinators have been awarded well recognized prizes for their professional and/or academic achievements. As for research qualifications, one of the part-time staff has a PhD in architecture, and one of the external collaboration teachers (thesis supervisor) has PhD in architectural design.
- Synergies of teaching and research – Through the collaboration with the University of Innsbruck, Professor Marjan Colletti and the Rexlab laboratory, students in the programme benefit strongly from outstanding robotic fabrication facilities. These facilities were initially funded through research grants and allow for an excellent interface between teaching and research for the students and staff. The two on-site workshops that are a fundamental part of the programme are a great opportunity to introduce the students to research projects at both UNIC and the University of Innsbruck, as well as the research demonstrators have the

potential to become research projects and be published in conferences. Furthermore, students have been encouraged or assigned the task to participate in nearby conferences, involving them in research activities.

- Design, approval, on-going monitoring and review / Policy for quality assurance – In addition to the external evaluation through the Cyprus Agency of Quality Assurance, there is an internal evaluation process for every course, which starts 18 months after the external evaluation and takes two years in total.
- Public information – The course is very well communicated openly through the website of the university of Nicosia. The website is well designed and contains a lot of important information about the programme (requirements, organization), the output from students and staff, and the teachers and staff working within the programme.

### Strengths

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

- Computational / Digital Fabrication in architecture is a growing and high-impact area of teaching and research, it is particularly interesting as a postgraduate course, as offered here. For such postgraduate courses, students often have to work, therefore an e-learning course is very helpful. Achieving this is challenging, since computational fabrication fundamentally requires the use of laboratories, which has been partly solved in this course through an innovative course design with two integrated on-site workshops, which allow the students to interact with robots and similar machines, as well as socialising, working as a team and building a physical demonstrator together.

### 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 course has a high potential to attract high-quality students and to create synergies between teaching and research. Previous alumni of the programme have already continued to do begin a PhD study, unfortunately they could not do this at UNIC and possibly with the tutors from this programme (which would give a particularly interesting opportunity to further develop projects and studies that they already begun at this current programme to be evaluated)
- Information was given that teaching evaluation is being carried out, analysed and taken into account for the improvement of teaching, but not on how their teaching performance affects their remuneration, evaluation and/or selection.
- As for qualification, possibly time release and funding could be given to the current staff, to further develop their research qualifications, such as doing a PhD, if research is to be further strengthened.

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

Sub-area		<i>Non-compliant/ Partially Compliant/Compliant</i>
3	Teaching staff recruitment and development	<i>Compliant</i>
3.2	Teaching staff number and status	<i>Compliant</i>
3.3	Synergies of teaching and research	<i>Compliant</i>

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.*

#### 4.1 Student admission, processes and criteria

The postgraduate programme operates as a cross-disciplinary platform aiming to bring together participants from various design and engineering specialisations.

The student admission process for the program is designed to be thorough and inclusive, ensuring the selection of candidates who have passion for the field. Key admission criteria during their interview include the submission of a detailed Portfolio displaying the background and/or interest in the theme of computational design and digital fabrication, basic computing experience and a Bachelor's degree from an accredited institution of higher education in a relevant field, including Architecture, interior design, industrial design, arts, graphic design, engineering. Additional Documents as the completed application form, Curriculum Vitae, Short statement of personal goals, additional documents, demonstration of English Language Proficiency and Contact Details of two referees.

#### 4.2 Student progression

The programme exhibits a well-structured educational approach, with its primary strength identified in the online/ blended mode, offering students the option of part-time participation. This flexibility enables them to effectively manage their study and work schedules. The presence of an

easily accessible and user-friendly online platform serves as an excellent resource, where all materials are uploaded, providing students with convenient access to study materials. Due to the diverse backgrounds of the students, there is blended and creative interaction during online meetings, fostering discussions about the research process and design projects.

#### 4.3 Student recognition

The programme aims at promoting international exchange of research knowledge through the connection to the University of Innsbruck and its Robotic Lab (REXLAB) at the Institute for Experimental Architecture. The collaboration encourages and enables participants to become part of the global community of computational research in digital fabrication, a growing industry increasingly important for the production of the built environment. The committee considers that there should be enhanced international promotion for this program.

#### 4.4 Student certification

The MSc in Computational Design and Digital Fabrication (MSc CDDF) is a degree offered in collaboration with the University of Innsbruck, Faculty of Architecture, and The Institute for Experimental Architecture. The programme belongs to the Department of Architecture, which is under the School of Humanities and Social Sciences of the University of Nicosia. The certification of the HEI is accompanied by a diploma supplement, which is in line with European and international standards.

#### Strengths

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

- The shared expertise and courses with the University of Innsbruck provide students with an opportunity to access the global community of computational research and robotic experimentation, to establish connections with leading industrial companies and entrepreneurs to formulate relationships that can lead to their future employment.
- The students engage with industrial equipment during both academic workshops and can also collaborate with the specific partners during their final research project.
- In addition, the research-based approach of the program along with the Thesis, provide the foundations for admission to a Doctoral degree in the field or any other relevant/related area.

#### 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.*

Recommendations regarding student admissions are being proposed. If applicant numbers increase in the future, a suggestion would be to refine the eligibility criteria by narrowing the scope of accepted fields, recognising that proficiency in certain engineering domains may not necessarily meet the expected standards of the programme. While encouraging diversity in the nature of studies may lead to compelling final results in theses, it is crucial that the chosen field not only



embraces diversity but also fosters creativity, ultimately culminating in an inventive and prototype final outcome. Additionally, the committee is considering the inclusion of the foundational degree grade as an evaluation and admission criterion for prospective students, potentially setting a specific grade threshold.

The second point is related to the progression of the students. The current structure which comprises two weeks of interaction with the lab in Innsbruck and two weeks at UNIC may be insufficient for the practical components of the course. Extending the duration of these practical sessions has the potential to considerably improve the practical learning experience and, consequently, enhance the overall academic achievement and outcomes of the students.

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

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

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

<u>Sub-areas</u>
5.1 Teaching and Learning resources
5.2 Physical resources
5.3 Human support resources
5.4 Student support

#### 5.1 Teaching and Learning resources

##### Standards

- *Weekly interactive activities per each course are set.*
- *The e-learning material and activities take advantage of the capabilities offered by the virtual and audio-visual environment and the following are applied:*

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

## 5.2 Physical resources

### Standards

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

## 5.3 Human support resources

### Standards

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

## 5.4 Student support

### Standards

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

*You may also consider the following questions:*

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

### Findings

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

The University provides general guidelines and handbook to students and staff outlining the distance learning structure, regulations and set out. There is also similar information on course design, and delivery and training on distance learning, Moodle, and Creative Media essentials for

staff. Additionally, the Faculty provides professional development workshops on teaching and learning theory and practice. The pedagogical model for E-learning also seems a very informative resource for the programme staff.

The existence of these resources is reflected in the structure of the MSc information and organisation of the learning and study material. This was all explained thoroughly during the onsite visit by the Programme Coordinators, who organised the course material according to the university standards and guidelines.

Despite this exemplary organisation, there is still a question of whether these resources are adequate for a distance learning programme that aims to teach physical fabrication and deliver physical constructs.

### Strengths

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

The students and teaching staff are supported by the University in terms of the resources that are available to them, academic preparation, counselling, and special needs access. The online teaching resources on Moodle are adequate and the recorded lectures from the past years are a very important asset of the programme.

The quizzes that are part of the learning material on Moodle are a very good way of testing student knowledge and making sure that students are conscious and knowledgeable of computational design terminology.

### 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.*

There is an inherently contradictory aspect in a distance learning course that partly focuses on fabrication. The students are being asked to establish connections to their local fabrication labs to enable them to carry out their work towards ARCH 570DL, 580DL and 592DL. Although this might work for early stages of their studies in the 570DL module, it also makes it restrictive in terms of the fabrication methods that they can use towards 592DL. This is because large scale fabrication towards the latter depends on the students having adequately sized spaces wherever they are based at. Two ways around that would be if the Department of Architecture could facilitate onsite robotic fabrication, by purchasing the equipment needed for students to carry out their work adequately, and/or students spending much more time (2 months and/or more) at the University of Innsbruck's Rexlab facilities for fabrication.

Regarding recruitment resources, as the student numbers seem to be low, the Department could benefit from a dedicated communications staff member who could promote the MSc online and organise talks and presentations for existing staff in nearby countries (Middle East, northeast Africa, southeast Europe) to advertise the programme and attract prospective students.

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

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

### C. Conclusions and final remarks

*Please provide constructive conclusions and final remarks which may form the basis upon which improvements of the quality of the programme of study under review may be achieved, with emphasis on the correspondence with the EQF.*

#### Overall Judgment and Recommendations of the committee

Based on the report provided to us, as well as the site visit on the 12th of February, we unanimously come to the conclusion that the programme entitled “Computational Design and Digital Fabrication (1,5 academic years/90 ECTS, Master of Science, E-Learning, will be positively re-evaluated herewith. We had a very positive overall impression of the programme and university.

- Computational / Digital Fabrication in architecture is a growing and high-impact area of teaching and research, it is particularly interesting as a postgraduate course, as offered here. For such postgraduate courses, students often have to work, therefore an e-learning course is very helpful.
- There were discussions about the course becoming more flexible for students who work during their studies (which was already the case for 4 out of 5 students in our on-site interviews), this may conflict with the tutors' demand for full-time teaching and students working on assignments (which is important to achieve learning goals within the course). We recommend trying to find compromises to allow for working students to participate. On another hand, allowing part-time students to study in the programme who work more than one day a week could be detrimental to the output, lowering student work standards, both in terms of quality and quantity. Additionally, although DL makes it easier for students to attend the programme, it could be discouraging for local students, who might not want to do DL studying in their own country in part-time mode. Could the Department of Architecture offer a parallel ground-based MSc option, to increase student intake and enable extensive fabrication work? And could there be a digital design aspect in BArch / MArch to encourage students to continue studying for the MSc?
- The idea of students connecting to local fabrication facilities as part of their assignments is innovative and appears to be mostly working, however this is to be carefully evaluated from an equality point of view. Can students perform without compromise, when such facilities are not available locally?
- The committee had a discussion about the placement of architecture within the University of Nicosia, according to staff this was also a topic of discussion at the department and university. It was discussed that the placement of architecture is generally difficult (social sciences vs engineering), however each decision should be accompanied by measures to balance or compensate for the important subjects and expertise which is outside of the department then. Here this is the case for computer science, engineering subjects such as civil engineering and robotics.

- Achieving a digital fabrication course through e-learning is challenging, since computational fabrication fundamentally requires the use of laboratories, which has been solved in this course through an innovative course design with two integrated on-site workshops, which allow the students to interact with robots and similar machines, as well as socializing, working as a team and building a physical demonstrator together.
- The main strength is identified in the online/ blended mode of the program with the possibility of part-time participation. Of particular relevance is that (1.2) the program benefits from external expertise with tutors from UIBK being involved in teaching the students and the students spending 2 weeks on the UIBK campus.
- The content of the program is focused on computational design and fabrication, which is relatively novel and relevant for the education of the 21st century architects. The reviewers appreciate the ambitious and both scientific and societal relevance of the program. The reviewers recommend embracing the implicit blended and part-time character of the program and suggest changing the name of the program into ‘Computational Design and Fabrication’.
- The program ensures to some degree that academic integrity and is vigilant against academic fraud (1.1) but AI is not yet addressed, which leads to (1.1) being partially compliant. The reviewers recommend introducing AI-related considerations to the program.
- Design, approval, on-going monitoring and review (1.2) is designed to some degree by involving students and other stakeholders, there is, however, a discrepancy in expectations, with interviewed students appreciating the course for the possibility to study part-time, while teaching staff requesting full-time participation), which leads to (1.2) being partially compliant. The interview revealed that 4 of 5 students worked in the first year full time and in the last half year part-time; they have chosen the course because of this flexibility. The reviewers recommend to align expectations.
- The program is designed to enable to some degree smooth student progression, however, with the content and methods involving computational fabrication not having been introduced in BArch and the students having various backgrounds, the smooth progression is a challenge. The reviewers recommend introducing computational fabrication in the BArch / MArch education.
- The Environmental Design (10%) presentation in ARCH-582DL Performance Based Design covers climate analysis, process, orientation, daylight, and energy modeling. However, ARCH 592DL is about a computational process or a fabricated building element. This is because delivering full building designs cannot be done in the time that is available, as the Programme Coordinators explained. A suggestion would therefore be for the Environmental Design (10%) presentation to cover issues of embodied carbon and life cycle analyses that can then be used to assess the environmental and material impact of the built elements / structures.
- In terms of Open Data Science, there is no Open Access (OA) policy yet but it is practiced to some degree, hence, OA policy still needs to be established.

The course has a high potential to attract high-quality students and to create synergies between teaching and research. Previous alumni of the programme have already continued to begin a PhD study, unfortunately they could not do this at UNIC and possibly with the tutors from this programme (which would give a particularly interesting opportunity to further develop projects and studies that have already begun at this current programme to be evaluated.

Opportunities to engage with labs at students' locations should be published widely and linked to career advice the university provides. This should not be a problem considering the university's international collaborations and will address the students' concerns that they cannot always find local resources where they study.

The small number of students in each cohort makes establishing an active online community challenging. Some strategies have been in place to strengthen this community (e.g. reducing the number of electives), however student engagement for such a small cohort could be a problem and the programme team should revisit the tools and resources for engaging student cohorts.

The Department could have active strategies (website, social media promotions, online presence, funding lecturer talks in other universities, establishing links to BArch / MArch, increasing flexibility, offering DL and ground-based options) to increase applications and student intake.

The university has a policy on the use of AI in place and related guidance. We would recommend that the programme team articulates how this is applied to the context of this particular programme both from a disciplinary and pedagogical point of view. This is crucial in assessment and establishing a programme framework for the use of generative AI in the programme.

#### **D. Signatures of the EEC**

<i>Name</i>	<i>Signature</i>
Christopher Robeller	
Kostas Grigoriadis	
Henriette H. Bier	





Hatzipanagos Stylianos

Ms Niki Georgiou

**Date:** 13.2.2024, Nicosia