Doc. 300.1.1/2

Date: 31/10/24

External Evaluation Report

(E-learning programme of study)

- **Higher Education Institution:**
  Cyprus University of Technology
- **Town: Limassol**
- **School/Faculty (if applicable): Geotechnical Sciences and Environmental Management**
- **Department/ Sector: Chemical Engineering**
- **Programme of study- Name (Duration, ECTS, Cycle)**

  In Greek: MSc στη Χημική Μηχανική με Κυκλική (Βιο)Οικονομία (18 μήνες, 94 ECTS)

  In English: MSc in Chemical Engineering with Circular (Bio)Economy (18 months, 94 ECTS)
- **Language(s) of instruction: English**
- **Programme's status: New**
- **Concentrations (if any):**

  In Greek: Κυκλική (Βιο)Οικονομία
  In English: Circular (Bio)Economy

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

A. Introduction

This part includes basic information regarding the onsite visit.

The External Evaluation Committee (EEC) reviewed the application of the CUT (Cyprus University of Technology) for the launch of a new MSc program in Chemical Engineering with Circular (Bio) Economy (18 months/94 ECTS). The program comprises of 50 ECTS for course work (of which 45 ECTS for 6 compulsory courses of 8 or 7 ECTS each, and 1 elective course of 5 ECTS), 14 ECTS for a design project (during the first two semesters), and 30 ECTS for a graduation thesis (during the last semester). On top of the 94 ECTS can opt for an extra 5 ECTS of industrial placement. The program will be offered in a both hybrid and blended way; to both presential and distance students, with for the last target group, when possible (largely) online and only when strictly needed face-to-face (this last modality mainly refers to laboratory work on site (course CEN511), which is offered in the months of June/July).

The program aims to respond to a growing need for applying knowledge from Chemical Engineering to Circular (Bio) Economy needs. Intended solutions for circular economy will focus on waste management and resource productivity. With this topic and focus, CUT claims to be the only university on Cyprus, along with a handful of universities in Greece, to offer this program.

The EEC received the application paperwork well in time to examine it before visiting the University. On October 30, 2024, the EEC conducted a site visit at CUT in Limassol to review the MSc in Chemical Engineering with Circular (Bio)Economy. This program is designed as a three-semester (on full-time basis), blended-learning MSc course awarding 94 ECTS and aims to prepare students for advanced roles in chemical engineering with a focus on sustainability and circular economy principles.

The day began with introductions, followed by a meeting with the Vice Rector of Academic Affairs and members of the Internal Evaluation Committee (IEC), who provided an overview of CUT's mission and strategic objectives. This initial session allowed for a brief discussion on CUT's institutional role in advancing academic and professional opportunities in chemical engineering, supporting innovation and environmental stewardship.

The committee then met with the Head of the Chemical Engineering Department and the Program delivery team consisting of faculty, who presented the department's structure, mission, and strategic planning. Topics included the program's alignment with CUT's objectives, a SWOT analysis, and a summary of development processes aimed at the program's relevance and industrial needs.

The committee engaged in a thorough discussion with the program's development team. This conversation focused on the MSc program's design, including its intended learning outcomes, credit allocation, and opportunities for student engagement in projects and real-world applications. Committee members reviewed the program's quality assurance processes, such as feedback collection and continuous improvement mechanisms. Additional topics included teaching methodology, assessment approaches, and the resources available for students in both online and physical formats, including software, teaching materials, and assessment tools.

Next, the committee met with the e-learning unit to discuss the philosophy and methodology behind CUT's learning approach. The team demonstrated the e-learning platform's capabilities, explained the composition and roles of the pedagogical support team, and outlined the study guides provided to support students' understanding of course materials and learning goals. This session highlighted the structured interaction plans designed to facilitate student engagement and skill development through weekly activities and online resources.

A subsequent meeting exclusively with teaching staff explored the program's course design and implementation, assessment methods, and alignment with the European Qualifications Framework. Faculty members provided insights into their research activities, curriculum development, and resources supporting blended learning. A selection of

assessment materials, reading lists, and exams was reviewed to assess compliance with the program's educational objectives.

External stakeholders, including four industry representatives, shared insights on the MSc program's industry alignment, graduate employability, and their involvement in the department. They discussed current trends, skills in demand, and career paths of program graduates, helping to ensure that the program remains relevant to industry needs.

In a separate session, the committee met with students and graduates who offered candid feedback on the program. Topics included their learning experiences, support resources, and satisfaction with the academic and administrative aspects of their programs that would be useful for the upcoming MSc program. Student input provided valuable perspectives on CUT's preparedness for the new program, current approaches in existing programs, as well as its impact on their academic and career goals.

The day concluded with a brief overview of lab facilities, where the committee observed the program's physical and digital infrastructure. This was followed by a wrap-up discussion with the Head of the Department and selected staff members to clarify any remaining questions.

During the site visit the EEC noticed an open, constructive and friendly climate where every staff member felt free to speak out. We were especially pleased by the open attitude of key staff of the program to take aboard recommendations and changes for improvement.

As the programme has not yet been approved to be taught, EEC was searching for evidence in our meetings of the policies, infrastructures, and resources that the university has in place to support the delivery of this innovative MSc programme. Many good ideas and intentions were found, although it also appeared these still need to be further improved.

The EEC (see section B below for the list of evaluators) appreciated the opportunity to meet with, receive input from, as well as direct questions to: (i) the programme coordinator and the team who would be involved in the delivery of the programme; (ii) those with key roles in both the overall governance and administrative support structure; and (iii) several students who were able to talk about their overall experience of studying at the Cyprus University of Technology.

B. External Evaluation Committee (EEC)

Name	*Position*	*University*
Efstathios Kikkinides	Professor	Aristotle University of Thessaloniki, Greece
Waheed Afzal	Associate Professor	University of Aberdeen, UK
Konstantinos Anastasakis	Associate Professor	Aarhus University, Denmark
Hans Hummel	Professor	Open University of the Netherlands
Sofia Matsi	Student member	University of Cyprus

C. Guidelines on content and structure of the report

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

Findings

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

Strengths

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

Areas of improvement and recommendations

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

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

1. Study programme and study programme's design and development

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

Sub-areas

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

1.1 Policy for quality assurance

Standards

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

1.2 Design, approval, on-going monitoring and review

Standards

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

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

1.3 Public information

Standards

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

1.4 Information management

Standards

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

- *Students and staff are involved in providing and analysing information and planning follow-up activities.*

You may also consider the following questions:

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

Findings

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

The MSc in Chemical Engineering with Circular (Bio)Economy at CUT presents a strong case for accreditation. The programme is supported by an acceptable quality assurance framework that encompasses formal procedures for the

approval and ongoing review, thereby ensuring academic excellence and relevance in the fields of chemical engineering and circular economy. The committee received candid insights from the department head and faculty members involved in the programme's design, including their motivations for offering it in English and in a hybrid-blended format. This format allows some students to engage in online learning while others attend courses on campus, with the option for full online delivery for different cohorts. The team also addressed challenges related to faculty turnover and outlined their recruitment strategies and plans for online delivery.

The programme has received some consultation from the industry stakeholders and clearly presents its intended learning outcomes, generally satisfying both academic and professional standards. While the curriculum comprises over 90 ECTS and demonstrates a rational structure, there is room for enhancement. It effectively equips students with essential technical knowledge and interdisciplinary skills for sustainable chemical engineering and innovative practices within the circular economy. Faculty engagement in curriculum development ensures that course content is generally aligned with current research and industry requirements, particularly concerning sustainable resource utilization and bioeconomy, with some proposed improvements.

CUT provides transparent and publicly accessible information about the programme, including entry requirements, course structure, and intended learning outcomes. The institution's information management systems monitor key metrics such as student progression, satisfaction, and post-graduation employment rates.

Strengths

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

The program effectively integrates CUT's quality assurance policies through regular monitoring and updates, ensuring that the curriculum remains aligned with academic standards and industry needs.

Collaboration with approximately 15 industrial organizations, which host student internships and contribute informally to program development, results in a curriculum that reflects the essential skills and knowledge required for careers in sustainability and bioeconomy.

Comprehensive quality assurance processes promote academic integrity and transparency, supported by a dedicated team and institutional frameworks.

Once approved, this programme ensures accessibility to information through well-managed public dissemination of course details, learning outcomes, and evaluation criteria, enabling prospective students to make informed choices.

The department benefits from a small but dedicated team of academics who are deeply involved in developing and enhancing a robust teaching program. Most full-time faculty members maintain strong research programmes in sustainable chemical engineering that inform the curriculum for the benefit of all students.

Established relationships with approximately 15 Cypriot industrial organizations support students in securing industrial placements and offer opportunities for guest lectures.

CUT maintains strong collaborations with several European universities of technology, facilitating student recruitment and mobility for research projects.

The faculty of the chemical engineering department presents a strong research profile and a successful track record in securing funding.

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 name of the degree can benefit from a slight typographical change: "MSc in Chemical Engineering with Circular Bioeconomy" (remove parenthesis).

Formalizing the involvement of external stakeholders, including industry practitioners and regulatory bodies, in annual reviews and periodic evaluations could enhance the programme's alignment with industry advancements and job market demands. Establishing an Industrial Advisory Board to convene annually with a set agenda for curriculum reform may be beneficial.

Some revisions to the programme design are suggested: Each semester should carry an equal workload of 30 ECTS, totalling 90 for the total programme. The first semester could include a course on process systems engineering—covering material and energy balances, key unit operations, and computer tools—rather than the current courses on advanced materials engineering and transport phenomena. Additionally, moving the course on life cycle assessment into the first semester would enhance the curriculum's appeal, application, coherence, and balance.

The department has faced faculty and technical staff departures, but has developed a recruitment plan to restore staffing levels. It is anticipated that these efforts will result in a higher staff capacity compared to 2023, when previous evaluations of the department and its programmes were conducted.

The feasibility of this new program was based on a questionnaire under 21 undergraduates and a market survey amongst 12 industries present at a MSc presentation May 23, 2023. The feasibility of attracting more distance and foreign learners (the university currently offers only two distance learning programme and has 8% of foreign students) was said to be based on personal expectations and not on any market needs analysis.

The EEC feels that face-to-face education would be the most adequate modality to deliver this MSc programme. Nevertheless, the committee agrees with the need for online distance learning programme and proposes to enhance ways to achieve practical learning objectives (problem solving in practical contexts). Furthermore, licenses for all utilised software in the programme need to be ensured for distance access.

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

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

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

Sub-areas

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

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

Standards

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

2.2 Practical training

Standards

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

2.3 Student assessment

Standards

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

2.4 Study guides structure, content and interactive activities

Standards

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

You may also consider the following questions:

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

Findings

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

Teaching and Learning Methodology

The online teaching methodology as described in the study guides is rather conventional and leans on virtual class lectures with additional online materials and assignments. A small part of the (optional) programme is intended to be carried out in a hybrid way. This is the face-to-face laboratory work (in the months of June/July, at the end of the second semester, on university site). This laboratory work is carried out in CEN 511 (Advanced Anal. Chem. Labs, 5 ECTS). Students not opting for CEN511 and doing a more theoretical-computational dissertation, will be able not to do any face-to-face practical work, and only have to be on site for exams.

Most components of the programme are defined by the university as 'theoretical', only the (part C.) elective courses CEN510 and 511 and the industrial placement CEN 520 (5 ECTS each) and (part E.) Dissertation CEN 620 (30 ECTS) are defined as 'both theoretical and experimental' (pp. 63/64). The pedagogical model provides a setup of 6 compulsory (parts A + B) courses of 8 ECTS each (for grounding courses CEN 501, 502, 503), or for 7 ECTS each (for specialization courses CEN 601, 602, 603) as well as a (part D.) Design Project CEN 604 of 14 ECTS (all during semesters 1 and 2), and a semester with a (part E.) graduation master thesis of 30 ECTS (during semester 3).

All courses have a similar structure and are usually broken down in 12 meetings spread over 12 weeks. This allows for easy organization and administrative support. The programme structure, names/codes and study load of courses and other program components are as follows:

A. Compulsory courses (8 ECTS each, 24 ECTS total):

1) Advanced Transport Phenomena (CEN 501)

2) Advanced Reaction and Biochemical Engineering (CEN 502)

3) Advanced Materials Engineering and Technology (CEN 503)

B. Circular (Bio)Economy Module courses (7 ECTS each, 21 ECTS total):

1) Life Cycle Assessment (CEN 601)

2) Circular (Bio)Materials (CEN 602)

3) Renewable Fuel Production Processes (CEN 603)

C. Elective courses (choose one of the following) (5 ECTS each, 5 ECTS total):

1) Standardization and Health and Safety of Circular (Bio) Economy (CEN 510)

2) Advanced Analytical Chemistry Labs (CEN 511)

3) Industrial placement (CEN 520, additional)

D. Design Project (CEN 604) (14 ECTS)

E. MSc Dissertation (30 ECTS)

The EEC noted the intention of the staff involved to implement a sufficient variety in teaching methods, but this was only partly reflected and specified in the study guides we received. For instance, there was some mention of case studies to make the practical assignments and exercises more active and immersive.

The study guide now offers little use of multimedia (MM). Not many MM resources are mentioned in the corresponding box, with sometime just reference to some YouTube videos.

Practical Training

Crucial learning objectives of the overall programme (pp. 8/9) include: Being able to respond to real-life problems (#7), Problem-solving (#9), Apply chemical engineering in circular economy situations, and the development of research questions and methodology (#13).

However, the program appears not to contain (m)any specific hours for practical training in context, and no practical training guide has been provided with the application. This is especially surprising/troublesome for a program that has an inherent laboratory and practical experimentation in context character. The study guides did not sufficiently reflect

educational activities which encourage students' active participation in professional practice. However, the discussion revealed this is intended to be the case.

Assessment

Students do assignments and projects and hand in results. Formative assessment is based on these assignments, on active participation, and summative assessment on a final exam. Procedures for administration and assessment seem to be clear. Regarding thesis support and assessment, no other information about the methodology of supervision and evaluation criteria is available than just a short policy document.

Study Guides, Content and Interactive Activity

The purposes of the program of 94 ECTS are clearly defined with the program having one specific specialization (Circular (Bio) Economy). The main intended target groups are Bachelor students from related Chemical Engineering programs (that want to become engineering specialists in circular economy).

The emphasis of the program appears to be on theory and development of knowledge. The EEC sees that there is a lack of information regarding skills development and practical training. It was only during the discussions that we came to find out the practical component is indeed seen as important and should form a more substantial part of the program.

Strengths

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

The well-structured programme with the rather unique (as staff claims) focus offering new possibility for working in circular bioeconomy, linking to PhD work, and for distance study.

The programme offers some opportunities of research-informed learning (Thesis).

Flexibility and organization of the Distance Learning (DL) program can attract (working) students. The University has some experience of DL programmes because of 2 existing online MSc programmes.

There is clear evidence of good use of peer-assessment and formative assessment during courses, which on a course level are stored in Moodle, and on a summative level are stored using a SAP application.

The use of external experts in some specialist domain and research methodology courses was also well placed.

Good tutor-student relationships were reported both by teachers and students that were present, but from other existing (non-Distance Learning) programs. The instructors intend to work in close contact with the students providing the guidance and the encouragement that will be needed especially in distance learning settings.

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 was worried about the 94 ECTS in 18 months study load. We suggest to bring this down to three semesters of 30 ECTS each. Furthermore we strongly recommend to offer a part-time variant of 6 semesters, especially taking into account the CUT wants to attract distant learners that might be older, already work and have families.

During the site visit, it was proposed that there would be an increasing complexity in knowledge and skills across the three semesters. This is not reflected in the paperwork. The courses are still rather 'stand alone'. It is not clear how they build upon each other nor how all required competence areas of the European Quality Framework (Dublin descriptors) are distributed over the courses. Nevertheless, during the site visit the committee heard intentions and ideas to align courses and include missing competences, distribute research competences across courses, put the LCA course earlier in the program, and introduce more innovative instruction formats. This needs to be worked out and made more explicit. Some innovative approaches presented by staff made us more confident that more will be achieved than what the application on paper suggests.

Unique selling points the new program can harvest on are linking to PhD programs, industry input, strong research outputs of staff, part-time variant for distant learners.

It is expected there can be sufficient interaction between the students and the teacher in a course. Students are expected to collaborate with each other and be facilitated by more varied educational technology. An intended example will be the demonstrated use of simulations using the LearnChemE application. Again, this would require some advance collaboration scripting of the online environment.

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

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

3. Teaching staff *(ESG 1.5)*

Sub-areas

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

3.1 Teaching staff recruitment and development

Standards

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

3.2 Teaching staff number and status

Standards

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

3.3 Synergies of teaching and research

Standards

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

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

You may also consider the following questions:

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

Findings

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

The department of chemical engineering consists of an enthusiastic and dedicated staff, with a sound average age, eager to participate in discussions and aspects of quality assurance. The teaching staff includes, faculty members of high-profile, and special teaching staff, both groups having appropriate higher qualifications to deliver the intended learning outcomes of the proposed study programme, and to ensure quality and sustainability in teaching and learning.

The teaching staff is selected via a standard and quite transparent procedure set by the University. All new teaching staff are required to be engaged in teaching-skills training and development through a Learning Development Network (LDN) of the University. It must be noted that current faculty members have the option to attend LDN and some of them have done this to improve their teaching skills. This is particularly useful and well appreciated by the committee considering the fact that promotion of the teaching staff does not take into account the quality of their teaching activity and considers primarily their research activity in terms of, paper publications, conference presentations, impact of their work in the scientific community, and research funding.

Currently, the number of teaching staff consists of 11 members (8 faculty and 3 special teaching staff members), which is below the target of the department to have 14 members of the academic staff till 2025. Nevertheless, the department has already shortlisted candidates for two posts to be filled by the end of 2024 and remaining during 2025. Furthermore, the department plans to hire 1-2 visiting staff members, if needed, to cover the needs of teaching in case of delays in some of the new appointments.

The teaching staff is responsible for teaching courses that correlate well with their field of research and there is a very good alignment between the academic expertise of the instructors and the syllabus of their courses.

Furthermore, the fact that the lecturers are teaching courses related to their research ensures that they are kept up to date on the syllabus of the course. The teaching staff collaborates in the fields of teaching and research, not only internally but also with various local and international industrial partners. Furthermore, there are several labs in the department conducting research related to the main targets of the proposed MSc programme. Along the same line are many of the publications produced by the faculty members.

The teaching performance is assessed by a simple questionnaire completed by all the students following a standard procedure set by the University. However, this questionnaire appears to be solely based on responses on a Likert scale without opportunities to write free-text comments. Allowing students to add comments will help to gather further feedback from the students to improve teaching.

Strengths

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

The academic staff is highly qualified and are capable of delivering intended learning outcomes of the proposed programme and ensuring quality and sustainability in teaching and learning.

All new teaching staff are required to be engaged in teaching-skills training and development through a Learning Development Network (LDN) set by the University. Current faculty members have the option to attend LDN and some of them have done this to improve their teaching skills.

The teaching staff is responsible for teaching courses that correlate well with their field of research and there is a very good alignment between the academic expertise of the instructors and the syllabus of their courses.

The teaching staff collaborates in the fields of teaching and research not only internally but also with various local and international industrial partners.

There are several labs in the department conducting research related to the main targets of the proposed MSc programme.

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.

Currently, the number of teaching staff consists of 11 members, which is below the expected target of around 14, which existed between 2019 to 2022. Nevertheless, this number is expected to increase soon, as there are 6 new appointments for faculty members scheduled to start before the end of 2025. It is recommended that this target should be always maintained.

Teaching performance does not affect evaluation of a faculty member. This is due to the policy imposed throughout the University (probably in accord with the ministry of Education in Cyprus). The members of the committee recommend including teaching performance in the evaluation of a faculty member.

The teaching performance is assessed by a simple questionnaire completed by all the students, without giving the opportunity to describe in more detail the pros and cons of a certain course instructor. Since this is a procedure imposed by the University the members of the committee recommend improving the questionnaire to include argumentative feedback by the students for each course.

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

Sub-area		***Non-compliant/ Partially Compliant/Compliant***
3.1	Teaching staff recruitment and development	Compliant
3.2	Teaching staff number and status	Partially compliant
3.3	Synergies of teaching and research	Compliant

4. Student admission, progression, recognition and certification *(ESG 1.4)*

Sub-areas

4.1 Student admission, processes and criteria
4.2 Student progression
4.3 Student recognition
4.4 Student certification

4.1 Student admission, processes and criteria

Standards

- *Pre-defined and published regulations regarding student admission are in place.*
- *Access policies, admission processes and criteria are implemented consistently and in a transparent manner.*

4.2 Student progression

Standards

- *Pre-defined and published regulations regarding student progression are in place.*
- *Processes and tools to collect, monitor and act on information on student progression, are in place.*

4.3 Student recognition

Standards

- *Pre-defined and published regulations regarding student recognition are in place.*
- *Fair recognition of higher education qualifications, periods of study and prior learning, including the recognition of non-formal and informal learning, are essential components for ensuring the students' progress in their studies, while promoting mobility.*
- *Appropriate recognition procedures are in place that rely on:*
  - *institutional practice for recognition being in line with the principles of the Lisbon Recognition Convention*
  - *cooperation with other institutions, quality assurance agencies and the national ENIC/NARIC centre with a view to ensuring coherent recognition across the country*

4.4 Student certification

Standards

- *Pre-defined and published regulations regarding student certification are in place.*

- *Students receive certification explaining the qualification gained, including achieved learning outcomes and the context, level, content and status of the studies that were pursued and successfully completed.*

You may also consider the following questions:

- *Are the admission requirements for the study programme appropriate? How is the students' prior preparation/education assessed (including the level of international students, for example)?*
- *How is the procedure of recognition for prior learning and work experience ensured, including recognition of study results acquired at foreign higher education institutions?*
- *Is the certification of the HEI accompanied by a diploma supplement, which is in line with European and international standards?*

Findings

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

The programme follows a well-structured admission process that evaluates applicants based on academic grades, prior experience, specific courses taken, and a motivation letter. The programme considers various criteria such as grades and relevant experience in the circular economy or chemical engineering fields. In addition, since the program is offered in English, a certificate of English language proficiency is required. All application documents are submitted online and are assessed by the coordinator of the program and the Postgraduate Studies Committee. Clear weights in the assessment criteria have been set.

Applicants must have a recognized University degree, awarded by an accredited institution in the country where it operates, or a degree evaluated as equivalent to university degree by the Cyprus Council for the Recognition of Higher Education Qualifications (KYSATS) in topics such as Chemical Engineering, Chemistry, Environmental Science and Technology, Environmental Engineering, any other Engineering or Natural Science Degree.

Student progression is continuously assessed by a variety of methods including mid and final exams, projects evaluation, weekly or bi-weekly exercises and laboratory assignments. Depending on the idiosyncrasies of each course a different blend of the aforementioned methods is followed which are clearly stated at the beginning of each course and in the course description. Furthermore, additional material from reputative sources, i.e. LearnChemE, is offered through the online learning management system (Moodle) that can assist the understanding of the contents of each course.

Overall, The MSc in in Chemical Engineering with Circular (Bio)Economy programme demonstrates compliance with the pre-defined regulations for student admission, progression, recognition, and certification. The admission processes are transparent, student progression is effectively monitored, and fair recognition of qualifications and prior learning is ensured. The university provides accurate certification reflecting the achieved qualification and learning outcomes

Strengths

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

The relatively small size of the programme under accreditation (20-25 MSc students intake) offers several strong points for the students:

Continuous evaluation during the semester to verify that students are regularly engaged with the material and are able to demonstrate their understanding of the subject is ensured.

The offering of an elective industrial placement as well as the offering of the MSc thesis with option of working in collaboration with an industrial partner gives a unique opportunity for the students to engage in an industrial/professional environment and receive recognition. There is a strong collaboration between the department and local industry that ensures the industrial placements for all students.

The participation of the Chemical Engineering department in the European University of Technology network (https://www.univ-tech.eu/), offers great opportunities for students' mobility through exchange programs.

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.

Admission to the MSc programme is open for graduates in various disciplines including e.g. natural sciences, which can cause difficulties in some students following some of the advanced courses in Chemical Engineering. Appropriate mechanisms to support the smooth transition of such students in the new discipline need to be in place. Such mechanisms can for example be through the online learning management system (Moodle) offering a compilation of resources (e.g. video tutorials, LearnChemE resources, etc.) to get familiarized with the pre-requisites of each course, and/or the requirement to follow some relevant courses offered by the department in other degrees.

The course evaluations, offering the opportunity for the students to give feedback at the end of each course, need to allow the input of comments by the students, and not just being based on a simple numerical grading system, to ensure the appropriate argumentation of the students' experiences in the courses and support the continuous course improvement.

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

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

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

Sub-areas

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

5.1 Teaching and Learning resources

Standards

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

5.2 Physical resources

Standards

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

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

5.3 Human support resources

Standards

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

5.4 Student support

Standards

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

You may also consider the following questions:

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

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

Findings

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

Teaching, Learning and Physical Resources

Laboratory facilities, library and learning materials are provided at satisfactory levels. In a fast-evolving field, there should be a contingency plan for when the apparatus becomes outdated.

The Moodle platform appears to be in good condition and a backup server is available. There is sufficient support for exchange, groupwork and student monitoring. The pedagogical approach (socio constructivist) of the platform caters well for group collaboration, but needs shared and understood templates and (collaboration) scripting to be in place. We did not receive evidence of that (yet).

A good range of textbooks and journal articles are readily accessible to students and staff through the online library. However, it is focused on (limited to) journal articles, and lacks other media like video tutorials or more interactive programmes.

The Moodle environment is potentially an LMS (Learning Management System) to support socio-constructivist learning, but still mainly used here as electronic blackboard to provide digitized content from conventional teaching (syllabi, articles/books), used in virtual classes with the teacher explaining content and students asking questions. The intention however seems to be that students will also communicate with each other about their studies, and occasionally real collaboration will take place through Moodle. There are not yet existing examples (neither from other programs) where courses contain case-based material and/or explanatory simulations on which students need to apply their knowledge. We did therefore not encounter any examples of real project-based, collaborative or research-driven activities through Moodle. Here again, our discussions and the ideas and presentations provided by staff during the site visit have made the committee more positive in this regard.

Especially for DL programs, controls for fraud should be in place, taking in account recent innovation with generative AI. This is an ongoing development of which the programme seems to be aware and will take measures (like software for plagiarism detection, and proctoring for exams at home). Turnitin as Moodle plugin is already in place to check for plagiarism in formative assignment work.

Physical resources seem to be in place, but not always used by the current distance education programme. Programme has online support in place, which seems to be ensured with increasing student numbers. Students have the same rights as university staff for open-access publications, software, and the like.

The Distance Education (e-learning) Unit (DTU) provides support for students who have technological issues. Until now, there is not much experience with supporting students at a distance, but the unit seems to be (technically) equipped for it. To which extend they are also 'didactically' equipped to support this (and similar) program(s) has been discussed with two representatives of the e-learning unit. The committee became convinced they have excellent ideas, but at the same time 'are in their early days of work' (intentions phase), still depend on (temporary) student assistance.

Human Support Services

Human support resources are in place. Study advisers, counsellors, and administration are placed in separate administrative units. A mentor to support students throughout their studies including industry placement is in place (varying teacher).

Practicals (laboratory work) are an important part of the program and students need industry for context and real-life needs. Involving industry requires quality checks of whether the industry is the right place for placement in the programme to practice in an authentic context, either live or online. Such placement requires some organization of recruiting industries, connecting students to industry and visa versa.

Student support

Student support is in place. More attention is needed to the diversity of the student population, which includes both in-service engineers and pre-service engineers who do not have any engineering experience yet. This requires a differentiated approach to student support.

Strengths

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

We had the pleasure to encounter a committed and receptive dean and program coordinator, and some enthusiastic staff members who presented more innovative ideas (and actual examples) of how the program should address competences like critical thinking, problem solving and carrying out research, that were not contained in the application we had to review before the site visit. The committee feels this responsive attitude will work well for continuous learning and improvement. Having a larger fully employed staff will help generate a collaborative workforce for enabling more effective and innovative DL programs in the future, especially when supported by a dedicated DL and research unit.

Support provided by the e-learning unit for both teaching staff and students seems adequate but limited in capacity.

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.

In respect to controlling for plagiarism and fraud we recommend looking for DL improvements, taking in account recent technologies (pattern/handwriting/iris recognition) and proctoring during exams.

To address the concerns, we have for the DL to support the desired competences, a real e-learning unit should contain more substantial and more dedicated expertise for instructional methods and interactive e-learning, to design and develop a more active and experiential program, needed to achieve some of the higher order competences in HE (see other comments). It appears recently new staff with more ICT and innovation affinity has been contracted, but this is an ongoing process.

There is an investment need of about M6,8 EUR for materials, which is being paid for from tuition fees (70%) and external funding (30%). A yearly intuition of EUR 4100 seems low for such a program that leans that heavily on small-scale supervision and high-cost materials. The role of the technical laboratory technician(s) therefore seems important, but at the same time undervalued. The current laboratory technician is leaving and seems to be replaced by (temporary) student-assistants. We recommend to re-evaluate this/these staff positions.

Harvest more on the experience and cases that the work field (industry and professional bodies) can offer as content to the program. It became clear from our discussion with the work field that current graduated students have much knowledge, but still are not thinking as engineers in more practical ways (be creative, solve problems in context). A

more interdisciplinary view (not only focusing on technical, but also on juridical, economic and political issues, would be welcomed by the work field and committee (if not now possibly later).

We recommend that (especially at this early stage of e-learning awareness of the CUT) that all staff follow mandatory the induction training on new teaching methodologies, and that it is not optional for existing staff.

The current status for providing support for students facing personal challenges (class, family, economic, health-related), is available but not well communicated to the students. The EEC recommends improving this.

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

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

D. Conclusions and final remarks

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

Overall

The EEC is thankful for the trust placed in us as reviewers of this potentially innovative programme. The opportunities to observe and talk with the students, faculty, and staff of the department of chemical engineering at CUT have been professional. We have learned a lot. The present situation is promising, but there are still some challenges to be met. Offering a program on this topic with such technical and applied learning goals in a largely distance learning modality puts high demands on the use of educational technology, digital teaching and learning, and the acquisition of good students.

Although the committee heard some reassuring plans for these challenges during the site visit, these plans should be become more elaborated and better reflected on paper. Finding ways to attract good students to the program, and then keep them on board till graduation will be essential. We offer the following conclusions and final remarks to justify our suggestions for improvement.

Ambition for the Programme

The EEC appreciated the ambition of the proposal, which is to offer an 18-month (full time) MSc e-learning programme in preparation of Chemical Engineers, with a specialisation in Circular (Bio) Economy and Sustainability. Learning objectives include problem-solving skills, the practical application to real-life situations, and research skills. The ambition is to further work out and start this program in September 2025.

Overall Quality Assurance, Design, Monitoring and Distance Learning Unit

We were confident that the overall Quality Assurance mechanisms, at the institutional level are in place that will help deliver this new programme. However, there are specific demands that also come with offering such a technical and highly applied program that include the recruitment of students who will be suitable for following the programme, the recruitment of industry for placements, the placement of students who are not already engineers in industry, the ongoing monitoring of the practical components including how staff professionalisation and related concerns are dealt with.

Challenges/Improvements

As noted above, we see challenges that need to be improved, and we therefore flag these as areas that were assessed as *partially compliant* - and thus need further attention leading to the overall improvement of the proposed *MSc* programme.

E. Signatures of the EEC

Name	*Signature*
Efstathios Kikkinidis	
Waheed Afzal	
Konstantinos Anastasakis	
Hans Hummel	
Sofia Matsi	

Date: 31/10/2024