



Doc. 300.1.2

Date: 06/06/2024

Higher Education Institution's Response

- **Higher Education Institution:**
University of Cyprus

- **Town:** Nicosia

- **Programme of study**
Name (Duration, ECTS, Cycle)

In Greek:

Μηχανικού Μηχανολογίας και Κατασκευαστικής

In English:

Master (MSc and MEng) in Mechanical and Manufacturing Engineering (M.Sc. 4 semesters, 120 ECTS and M.Eng. 3 semesters, 96 ECTS)

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

- **Programme's status:** Currently Operating

- **Concentrations (if any):**

In Greek: Concentrations

In English: Concentrations



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. Guidelines on content and structure of the report

- *The Higher Education Institution (HEI) based on the External Evaluation Committee's (EEC's) evaluation report (Doc.300.1.1 or 300.1.1/1 or 300.1.1/2 or 300.1.1/3 or 300.1.1/4) must justify whether actions have been taken in improving the quality of the programme of study in each assessment area. The answers' documentation should be brief and accurate and supported by the relevant documentation. Referral to annexes should be made only when necessary.*
- *In particular, under each assessment area and by using the 2nd column of each table, the HEI must respond on the following:*
 - *the areas of improvement and recommendations of the EEC*
 - *the conclusions and final remarks noted by the EEC*
- *The institution should respond to the EEC comments, in the designated area next each comment. The comments of the EEC should be copied from the EEC report **without any interference** in the content.*
- *In case of annexes, those should be attached and sent on separate document(s). Each document should be in *.pdf format and named as annex1, annex2, etc.*

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

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	For Official Use ONLY
<p>Formalized procedures for quality assurance at the department level should be elaborated and made publicly available.</p>	<p>Formalized procedures for quality assurance at the departmental level include the following points:</p> <ul style="list-style-type: none"> • Students’ engagement in the improvement of the educational procedures, is realized through their representatives (5 in total – elected through student elections and may include both undergraduate and postgraduate students) in the Departmental Council. • Students’ further participation in the Department’s educational process assessment involves engagement participation on a fundamental level thus enhancing its efficacy. The Postgraduate Studies Committee organizes an annual meeting with the graduate students and discusses possible issues that need the Department’s attention so as to improve the educational process. The next meeting is planned for September 2024. • The Departmental Council (08/2024 meeting; May 16, 2024) unanimously decided to seek support from UCY’s Centre of Teaching and Learning (CT&L; https://www.ucy.ac.cy/ctl/?lang=en). In conjunction with CT&L’s training seminars (offered in all MME staff for effective lecturing, digital tools teaching, mentoring, etc.), the Centre will provide student statistics across all levels, i.e., failure statistics (per course – presented in a Table eliminating course codes), statistical analysis of the final marks (per course) and analysis of the students’ evaluations (per course and per question – presented in a Table eliminating course codes) will be made available within the MME faculty, and will be assessed annually by the Departmental Council. Drop-outs will be evaluated every 2 years. MME aims to assess and remedy potentially high dropout or failure rates, as well as monitor overall student markings and academic performance. Corrective measures to address any of these issues will be taken by the Head of the Department (HoD) in collaboration with the instructors. Furthermore, at the end of each semester, HoD has access to the students’ evaluations and in the cases where high failure rates and/or negative evaluation reports are systematically observed, he/she discusses the evaluation outcome with the corresponding Academic(s)/Instructor(s). • Academic personnel have been actively involved in shaping (among others) the departmental strategy related to its postgraduate studies, through the preparation of its Strategic Plan. More precisely, at the at the 09/2020 departmental meeting (September 23, 2020), the department’s academic personnel worked effectively and collaboratively on the finalization of the 2021-2025 Departmental Strategic Plan that was drafted by the members of the Strategic Plan Committee. For the continuous monitoring and periodic revisions (once 	<p>Choose level of compliance :</p>

	<p>per year) of the departmental goals set in the Strategic Plan related to its mission and vision, the Department at its 08/2024 meeting that was held on the 26th of May 2024, re-appointed the Strategic Plan Committee (consisting of 4 faculty members) (https://www.ucy.ac.cy/mme/home/the-department/?lang=en).</p> <ul style="list-style-type: none"> • The Departmental Council (08/2024 meeting; May 16, 2024) decided to establish an External Advisory Board (EAB). The EAB will be teamed by 11 distinguished academics and investigators from abroad as well as investigators / executive personnel from the industry. The EAB will meet bi-annually to internally assess the Department and suggest actions in order to meet the goals of the Department’s Strategic Plan. The EAB will also foster links between the Department and the local (and international) industry while it will also serve to bridge the gap between the academia, the society and the market. • In 2023, the Department’s Postgraduate Studies Committee evaluated the outcome of the Study Program evaluation results. Based on that, a document on the implementation of improvement actions in the graduate program of study was prepared and submitted to UCY’s Internal Quality Assurance Committee after being approved by the Departmental Council (08/2023; November 8, 2023). • Concerning plagiarism, UCY provides antiplagiarism online tools <i>SafeAssign</i> and <i>Turnitin</i> to academic staff through Blackboard (https://help.blackboard.com/SafeAssign/Instructor/Language_Support); https://help.blackboard.com/Learn/Instructor/Ultra/Grade/Turnitin). UCY has well-established policies and procedures to safeguard the quality and the fairness of exams. Plagiarism cases are reported to the Disciplinary Committee for Student Issues, an institution-wide committee pertinent cases are thoroughly investigated. Penalties include the following: (a) verbal reprimand; (b) written reprimand; (c) graded penalties for offenses related to exams or assignments; (d) in-campus social work (unpaid); (e) suspension of student benefits, except benefits that affect learning.; (f) Imposition of a fine for partial or total compensation for damages caused to equipment or the buildings or any other property of the University (g) Expulsion from the University for a period of one or two semesters. (h) Removal from Student Register. (i) Combination of the aforementioned penalties. Non-compliance with a penalty is considered a disciplinary offense, while students who do not fulfill any sentence that it has been imposed on them, they don't get a degree. 	
<p>Furthermore, clearer quantitative admission criteria should be introduced.</p>	<p>The department follows the University regulations concerning the admission criteria set for postgraduate studies, as appearing under the following link: https://www.ucy.ac.cy/graduateschool/research/admission-requirements/?lang=en</p>	<p>Choose level of compliance :</p>

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

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	For Official Use ONLY
<p>Based on the interview with students and EEC’s understanding of programme structure, the balance between compulsory and elective courses offered may need to be reviewed and improved to better tailor for the needs of students.</p>	<p>The Department is underway revising its MEng and MSc graduate programs. The Departmental Council (05/2024 meeting; March 27, 2024) unanimously decided to adapt the ECTS units from 120 ECTS in to 96 ECTS for the MSc program (in line with the MEng program). This decision facilitates the completion of the graduate programs in 3 semesters, in line with the National Qualifications Framework for Master Programmes guidelines. Moreover, the Department decided to restructure the Masters’ programs by introducing specific tracks (confirmed at the 9/2024 meeting that was held on the 5th of June 2024). Following the EEC’s recommendation, in the new programs, the number and content of compulsory and elective courses have been balanced to better tailor the student’s needs. An indicative form of the restructured Master programs is provided in Annex I. It is expected that the revising process will be completed by the end of 2024.</p>	<p>Choose level of compliance:</p>

3. Teaching staff (ESG 1.5)

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	For Official Use ONLY
<p>The EEC found that professional development for the teaching staff would benefit from the implementation of a mentorship programme in the Department to facilitate the academic promotion procedures.</p>	<p>Informally faculty seeks mentoring from other faculty members on a voluntary basis. Moreover, the Department Chair ensures that new faculty members have accurate information on academic personnel processes, obligations related to teaching, research and administration and clear guidelines on promotion procedures. As far as teaching mentoring is concerned, the Centre for Teaching and Learning is working towards the implementation of the <u>UCY policy for Quality Assurance in Teaching</u>, has under Area II: “Initial training, ongoing faculty professional development, and networking” in Action: B. “Ongoing professional development for faculty and teaching staff”, developed a “Mentors” policy. The policy was approved by the Senate (16/2019/ΣΥΓΚΛΗΤΟΣ) to be applied on a voluntary basis. More information can be found under: https://www.ucy.ac.cy/ctl/mentors/?lang=en.</p>	<p>Choose level of compliance:</p>

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

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	For Official Use ONLY
Clearer quantitative admission criteria should be introduced.	The Department complies with the University regulations concerning the admission criteria set for postgraduate studies, as appearing under the following link: https://www.ucy.ac.cy/graduateschool/research/admission-requirements/?lang=en	Choose level of compliance:

5. Learning resources and student support
 (ESG 1.6)

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	For Official Use ONLY
<p>Recommended literature on some courses needs to be revised regularly. Physical resources for teaching will benefit from consolidating facilities in the new premises on one campus.</p>	<p>The literature provided in postgraduate courses is indicative. The instructors systematically monitor new editions and enrich the bibliography with new valuable books as well as peer-reviewed scientific articles and review papers. Examples are provided in Annex II.</p>	<p>Choose level of compliance:</p>

6. Additional for doctoral programmes (ALL ESG)

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	For Official Use ONLY
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7. Eligibility (Joint programme)
 (ALL ESG)

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	For Official Use ONLY
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B. Conclusions and final remarks

Conclusions and final remarks by EEC	Actions Taken by the Institution	For Official Use ONLY
<p>The EEC found that the academic personnel carry the skills necessary for good teaching and research. Recent investments in consolidating all available facilities and infrastructure within one campus is expected to give a major boost to the coherence of all the programmes under evaluation and will significantly improves student experience. In general, EEC found all the programmes under evaluation mostly compliant with regulations, while improvements at varying levels of importance are recommended to address specific partially compliant aspects.</p> <p>Education quality assurance system exists at university level, and MME nominally adopts this. However, EEC could not find in the application and presentation materials coherent formalized procedures at MME level that regularly assess quality and continuously improve student experience in the courses. Formalized procedures for quality assurance at the department level should be elaborated and made publicly available. Some elements of procedures are stated in the application materials, but it remains unclear how the system actually works. For example, it is unclear how information flows from course evaluation forms to relevant committees and further acted on for improvement of failure and dropout rates. The committee also fully appreciates intolerance to plagiarism, but penalties in the form of social work appear non-compliant and outdated.</p> <p>The BSc programme has consistent policies for admission. This</p>	<p>The points appearing in Conclusions and final remarks have already been addressed in previous sections.</p>	<p>Choose level of compliance:</p>

<p>programme fulfils all the requirements for professional registration with local authorities, ETEK. Students feel generally well supported by the department personnel, lecture halls and library. However, EEC could not find any quantitative criteria for admission to the MSc, MEng and PhD programmes. Nevertheless, the PhD programme is strong, attracting motivated students also from abroad. The qualification examination of the PhD programme does not seem to formally include a literature survey on the PhD topic to justify the set of objectives. The outcome options of the PhD defense and subsequent actions are not specified. The internal coherence of the masters programmes and their placement between the BSc and the PhD programmes need to be revised, particularly the balance of topics between compulsory and elective courses.</p>		
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C. Higher Education Institution academic representatives

<i>Name</i>	<i>Position</i>	<i>Signature</i>
Theodora Krasia	Chairperson	
Triantafyllos Stylianopoulos	Coordinator of the MME Postgraduate Studies Committee	
Click to enter Name	Click to enter Position	
Click to enter Name	Click to enter Position	
Click to enter Name	Click to enter Position	
Click to enter Name	Click to enter Position	

Date: June 6, 2024

Annex I

Degree to be offered	ECTS	Duration (semesters)
<p>MSc in Mechanical Engineering with tracks (specialisation in ...“track title”).</p> <ul style="list-style-type: none"> ✓ Track 1. “MSc in Mechanical Engineering, specialisation in Advanced Materials” ✓ Track 2. “MSc in Mechanical Engineering, specialisation in Computational Mechanics” ✓ Track 3. “MSc in Robotic Systems and Intelligent Manufacturing (RIM)” 	<p>MSc (96 ECTS)</p> <ul style="list-style-type: none"> • 24 core courses (3x8 ECTS) • 32 from a single track (4x8 ECTS) • 40 thesis (should be >1/3 of total) 	3 – 8
<p>MSc in Mechanical Engineering (general–horizontal, all areas, anything not covered by tracks)</p>	<p>MSc (96 ECTS)</p> <ul style="list-style-type: none"> • 24 core courses (3x8 ECTS) • 32-(2x8 from any track + 2x8 Dept/Faculty/UCY) • 40 thesis (should be >1/3 of total) 	3 – 8
<p>MEng in Mechanical Engineering (general–horizontal, all areas, anything not covered by tracks)</p>	<p>MEng (96 ECTS)</p> <ul style="list-style-type: none"> • 24 core courses (3x8 ECTS) • 48 (6x8 ECTS from any track) • 24 (3x8 from Dept/Faculty/UCY) 	3 – 8

Annex II

Postgraduate Courses		
Course Code – Course Name	Existing Bibliography	Updated Bibliography
MME518 Theory and Applications of Incompressible Newtonian and non-Newtonian Flows	Frank White, Fluid Mechanics, 8th edition, McGraw-Hill, 2017. Frank White, Viscous Fluid Flow, McGraw-Hill, 1991.	Frank White, Fluid Mechanics, 9th edition, McGraw-Hill, 2021. Frank White, Viscous Fluid Flow, 4th edition, McGraw-Hill, 2022. James Grotberg, Biofluid Mechanics: Analysis and applications. Cambridge University Press, 2021.
MME551 Nonlinear Mechanics of Solids and Structures	Lawrence E. Malvern. Introduction to the Mechanics of a Continuous Medium. ISBN-13: 978-0134876030 Allan F. Bower. Applied Mechanics of Solids. ISBN-13: 978-1439802472 Yuen-Cheng Fung. Classical and Computational Solid Mechanics. ISBN-13: 978-9810241247 G.T. Mase, G.E. Mase. Continuum mechanics for engineers. ISBN-13: 978-0849388309 A.J.M. Spencer. Continuum Mechanics. ISBN-13: 978-0486435947 Vlado A. Lubarda. Elastoplasticity Theory. ISBN-13: 978-1420040784 Aleksey D. Drozdov. Finite Elasticity and Viscoelasticity: A Course in the Nonlinear Mechanics of Solids. ISBN-13: 978-9810224332 J. Bonet, R.D. Wood. Nonlinear Continuum Mechanics for Finite Element Analysis. ISBN-13: 978-0521838702	Lawrence E. Malvern. Introduction to the Mechanics of a Continuous Medium. ISBN-13: 978-0134876030 G.A. Holzapfel. Nonlinear Solid Mechanics: A Continuum Approach for Engineering. ISBN-13: 978-0471823193 Ray W. Ogden. Non-linear Elastic Deformations. ISBN-13: 978-0486696485 G.T. Mase, G.E. Mase. Continuum mechanics for engineers. ISBN-13: 978-0849388309 Vlado A. Lubarda. Elastoplasticity Theory. ISBN-13: 978-1420040784 J. Bonet, R.D. Wood. Nonlinear Continuum Mechanics for Finite Element Analysis. ISBN-13: 978-0521838702 R. de Borst, M.A. Crisfield, J.J.C. Remmers, C.V. Verhoosel. Nonlinear Finite Element Analysis of Solids and Structures. ISBN-13: 978-0470666449 C.-J. Bathe. Finite Element Procedures. ISBN-13: 978-0979004957



<p>MME512</p> <p>Advanced Engineering Thermodynamics</p>	<p>Printed notes in Greek (S. Kassinos)</p>	<p>Class Notes (print form) in English by S. Kassinos</p> <p>ChatGPT "Thermo Guru" Assistant by S. Kassinos</p> <p>William Reynolds - Thermodynamic Properties in SI (1979)</p> <p>Yunus Çengel, Michael Boles – Thermodynamics, an Engineering Approach, https://www.mheducation.com/highered/product/thermodynamics-engineering-approach-boles-cengel/M9781266664489.html</p> <p>William Reynolds, Piero Colonna - Thermodynamics Fundamentals & Engineering Applications (2018), https://www.cambridge.org/highereducation/books/thermodynamics/4F53402087B26F32BC8DC00DE5ED068#overview</p>
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