1.	GENERAL INFORMATION	
1.	Programme Title:	Mechanical Engineering (Design)
		Mechanical Engineering (Manufacture)
	Final Amanda	Master of Colones
2.	Final Award:	Master of Science
		Mechanical Engineering (Design)
		Mechanical Engineering (Manufacture)
3	Exit Awards:	Postaraduato Cortificato, Postaraduato Diploma
5.		
4.	Awarding Body:	Glasgow Caledonian University
5.	Period of Approval:	September 2022 – August 2027
6	School:	School of Computing Engineering and Built
0.		
		Environment
7	Heat Department:	Machanical Engineering
1.	Host Department:	
8.	UCAS Code:	N/A
9.	PSB Involvement:	Institution of Mechanical Engineers
10	Place of Delivery:	Glasgow Caledonian University
10.	Thate of Delivery.	Clasgow Caledonian Oniversity
11.	Subject Benchmark Statement:	QAA Subject Benchmark Statement:
12.	Dates of PSP	October 2022
	Preparation/Revision:	

# 2. EDUCATIONAL AIMS OF THE PROGRAMME

The programmes build on the MEng (Hons) in Mechanical Systems Engineering and the MEng (Hons) in Computer-Aided Mechanical Engineering taught at GCU. The postgraduate programmes will therefore allow the School to offer an accredited route to membership of the Institution of Mechanical Engineers (IMechE) and to Chartered Engineer status (CEng).

In addition the UK-SPEC requirements also open potential routes to those honours graduates from programmes which do not hold accreditation with the IMechE. Prospective honours graduates following this path will have the opportunity to work towards the attainment of CEng status through completion of this programme supplemented with further study based on individual profile as appropriate.

The academic aims for the Postgraduate Diploma and Master of Science are fundamentally similar. However, the Master of Science provides the student with the opportunity to develop a range of additional research skills through completion of a major mechanical engineering thesis.

The educational aims of the Postgraduate Diploma are to give students an opportunity to select from the Masters programme modules, a package of learning (4 taught modules), providing elements of technical deepening/broadening and non-technical skills to meet individual requirements.

The Postgraduate Diploma and Master of Science effectively forms the link between the BEng (Hons) degree (which is heavily based on academic theory and application), and the more diversified skills base (both in terms of breadth and depth) which is expected of a practicing engineer.

The programmes also form valuable and relevant programmes of study for students from a wide range of backgrounds wishing to complete postgraduate study within the discipline of mechanical engineering in a design or a manufacture environment, through flexible full-time and part-time study modes and as part of a Continuing Professional Development (CPD) programme.

The taught component in the programme will build on the knowledge gained from the undergraduate BEng (Hons) degree (or equivalent programmes) to complete the academic formation required for a prospective Chartered Engineer. In addition to this, the structure and content will support the students' progress towards achieving the IMechE professional objectives through gaining the appropriate interpersonal skills, and higher level skills in solution development (broadening and deepening), using new and existing technologies, innovation, creativity and leadership.

The general educational aims of the programme include the following:

- providing the students with the knowledge and skills to equip them for a career as a chartered engineer within the mechanical engineering profession in a design or a manufacture environment;
- developing the students' competence in a range of appropriate specialist areas;
- developing the critical and analytical powers of the student in relation to the analysis of differing views on emerging concepts and to enable them to evaluate these against a background of a constantly changing industry;
- providing the student with the skills to adapt and respond positively to change;
- enhancing critical, analytical problem-based learning skills and the transferable skills to further develop the

students' employability as a mechanical engineer in a design or manufacture environment;

- enhancing the development of the students' managerial, communication and information technology skills;
- developing the skills and knowledge to conduct projects efficiently, ethically and safely.

In addition to the above, the main aims of the Master of Science Project component of the programme are to:

 expand the student's expertise by providing the opportunity to undertake a significant piece of independent

work, taking a holistic view of the subject area.

### 4. PROGRAMME STRUCTURES AND REQUIREMENTS, LEVELS, MODULES, CREDITS AND AWARDS

# Preamble

The structure of the proposed MSc is consistent with most other equivalent postgraduate degrees offered at GCU. The first part of the degree is comprised of taught modules set at Masters level SHE M (SQCF 11) and allocated 15 credit points each and the latter part of the degree is comprised of a Masters level project worth 60 credit points. Exit awards will be made as follows:

- Postgraduate Certificate for passes in any 4 taught modules. 60 credits at SQCF 11
- Postgraduate Diploma in Mechanical Engineering (Design) or Mechanical Engineering (Manufacture) for passes in all 7 taught modules from corresponding pathway. 120 credits at SQCF 11
- MSc in Mechanical Engineering (Design) or Mechanical Engineering (Manufacture) for passes in all 7 taught modules from corresponding pathway and a pass in the Project module. 180 credits at SQCF 11

## Selection of Taught Modules

As part of the requirement for the award of Postgraduate Diploma and Master of Science in Mechanical Engineering (Design) or Mechanical Engineering (Manufacture), a student must achieve passes in all taught modules. The taught modules are as shown in Table 4.1 and are selected as follows:

- 4 core modules (including a double credit module) must be selected for both study options
- 3 modules in the design option must be selected for 'Design' award
- 3 modules in the manufacture option must be selected for 'Manufacture' award

# MSc/PgD/PgC in Mechanical Engineering (DESIGN)

#### Table 4.1 (SCQF Level 11 Modules)

Module Code	Module Title	Credit
MMH323674	Professional Practice	15
MMN223676	Strategy and Innovation	15
MMH323561	Applied Thermofluids & CFD	15
MMH226690	Advanced Engineering Mechanics	15
MMH223558	Energy Audit & Energy Asset Management	15
MMH626691	Sustainable Materials & Manufacturing Processes	15
MMH123668	Advanced Computer-Aided Engineering	30
MMH306621	Project (Mechanical Engineering)	60
	Exit Award – Master of Science (MSc) Degree in Mechanical	180
	Engineering (Design)	

#### SCQF Level 11

Exit with Postgraduate Certificate (PgC) in Mechanical Engineering with 60 taught credits Exit with Postgraduate Diploma (PgD) in Mechanical Engineering (Design) with 120 taught credits Exit with Master of Science (MSc) Degree in Mechanical Engineering (Design) with 180 credits including Project

### MSc/PgD/PgC in Mechanical Engineering (MANUFACTURE)

SCQF Level 11

Module	Module Title	Credit				
Code						

MMH323674	Professional Practice	15
MMN223676	Strategy and Innovation	15
MMH723583	Maintenance Management	15
MMH723672	Manufacturing Management	15
MMH223558	Energy Audit & Energy Asset Management	15
MMH626691	Sustainable Materials & Manufacturing Processes	15
MMH123668	Advanced Computer-Aided Engineering	30
MMH306621	Project (Mechanical Engineering)	60
	Exit Award – Master of Science (MSc) Degree in Mechanical	180
	Engineering (Manufacture)	

Exit with Postgraduate Certificate (PgC) in Mechanical Engineering with 60 taught credits Exit with Postgraduate Diploma (PgD) in Mechanical Engineering (Manufacture) with 120 taught credits Exit with Master of Science (MSc) Degree in Mechanical Engineering (Manufacture) with 180 credits including Project

# 8. ASSESSMENT REGULATIONS

Students should expect to complete their programme of study under the <u>Regulations</u> that were in place at the commencement of their studies on that programme, unless proposed changes to University Regulations are advantageous to students.