



**School of Computing, Engineering and Built  
Environment**

**PgC/PgD/MSc**

**In**

**MECHANICAL ENGINEERING (DESIGN)**

**MECHANICAL ENGINEERING (MANUFACTURE)**

**Programme Specification Proforma Document (PSP)**

**Programme Specification 2019\_20**

Abridged Version

# Programme Specification Pro-forma (PSP)

## 1. GENERAL INFORMATION

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| <b>1. Programme Title:</b>                   | Mechanical Engineering (Design)<br>Mechanical Engineering (Manufacture)        |
| <b>2. Final Award:</b>                       | MSc<br>Mechanical Engineering (Design)<br>Mechanical Engineering (Manufacture) |
| <b>3. Exit Awards:</b>                       | PgC, PgD   |
| <b>4. Awarding Body:</b>                     | Glasgow Caledonian University  |
| <b>5. Reapproval Date:</b>                   | N/A  |
| <b>6. School:</b><br>Environment             | School of Computing, Engineering & Built                                       |
| <b>7. Host Division:</b>                     | Mechanical Engineering   |
| <b>8. UCAS Code:</b>                         | N/A  |
| <b>9. PSB Involvement:</b>                   | Institution of Mechanical Engineers<br>(IMechE)                                |
| <b>10. Place of Delivery:</b>                | GCU  |
| <b>11. Subject Benchmark Statements:</b>     | QAA - Engineering and EC <sub>UK</sub> UK-SPEC                                 |
| <b>12. Dates of PS Preparation/Revision:</b> | N/A  |

## 2. EDUCATIONAL AIMS OF THE PROGRAMME

The programmes build on the current MEng (Hons) in Mechanical-Electronic 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 PgD and MSc are fundamentally similar. However, the MSc 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 PgC 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 PgD/MSc 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 MSc 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) 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 SHE level M**
- Postgraduate Diploma in Mechanical Engineering (Design) or Mechanical Engineering (Manufacture) for passes in all 7 taught modules from corresponding pathway. **120 credits at SHE level M**
- 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 SHE level M**

### **Selection of Taught Modules**

As part of the requirement for the award of PgD and MSc 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

**Table 4.1 (SHE Level M Modules)**

<b>Module Code</b>	<b>Module Title (Semester)</b>	<b>Credits</b>
<b>Taught Core Modules:</b>		
MMH706486	Strategy and Innovation (A)	15
MMH323674	Professional Practice (A)	15
MMH113195	Advanced Computer-Aided Engineering (B)	30
MMH613156	Condition Monitoring (B)	15
<b>Taught Specialist Modules:</b>		
<b>Mechanical Engineering (Design):</b>		
MMH321933	Applied Thermofluids and Computational Fluid Dynamics (A)	15
MMH206614	Advanced Engineering Mechanics - Structures (A)	15
MMH306616	Advanced Engineering Mechanics - Dynamics (B)	15
<b>Mechanical Engineering (Manufacture):</b>		
MMH713154	Maintenance Management (A)	15
MMH706620	Manufacturing Management (A)	15
MMH223840	Energy Audit & Asset management (B)	15
<b>Project:</b>		
MMH621937	Project	60
<b>Exit Awards</b>		
<b>PgC (any 4 taught modules)</b>		<b>60</b>
<b>PgD Mechanical Engineering (Design or Manufacture) (7 taught modules)</b>		<b>120</b>
<b>MSc Mechanical Engineering (Design or Manufacture) (7 taught modules + project)</b>		<b>180</b>

## 8. ASSESSMENT REGULATIONS

### **Assessment rules:**

The Glasgow Caledonian University Assessment Regulations can be accessed at the following link: [http://www.gcu.ac.uk/media/gcalwebv2/theuniversity/gaq/gaqfiles/University%20Assessment%20Regulations%202013\\_14.pdf](http://www.gcu.ac.uk/media/gcalwebv2/theuniversity/gaq/gaqfiles/University%20Assessment%20Regulations%202013_14.pdf). These apply to this programme of studies in all respects. The MSc in Mechanical Engineering (Design or Manufacture) does not have any programme specific regulations that deviate from the standard University Assessment Regulations. The Programme's structure, progression and credit award framework is wholly consistent with the GCU Qualifications Framework.

An overview of assessment details are provided in the Programme Handbook.

### **Awards:**

For the awards of Postgraduate Certificate (PgC), Postgraduate Diploma (PgD) and Masters Degree:

- For the PgC and PgD awards, the aggregated pass mark is 50% for each module.
- For the MSc award, the pass mark is 50% for the Project module.
- To qualify for the award of an unnamed Postgraduate Certificate, students must complete all the programme requirements and successfully complete any 4 taught modules (60 credits at level M).
- To qualify for an award of Postgraduate Diploma in Mechanical Engineering (Design or Manufacture), students must complete all the programme requirements and successfully complete 7 taught modules from the named pathway (120 credits at level M).
- To qualify for an award of Master of Science in Mechanical Engineering (Design or Manufacture), students must complete all the programme requirements and successfully complete 7 taught modules from the named pathway and the Project module (180 credits at level M).

### **Regulations for Merit or Distinction:**

The Programme complies with the University Assessment Regulations in respect of the award of merit or distinction.

<http://www.gcu.ac.uk/gaq/regulationsandpolicies/assessmentregulationsandassociatedpolicies>

Merit: i) overall credit-weighted average of the modules used in the calculation, as specified in 18.2.3, within the range 65% to 69%, and ii) passed all modules included in the calculation at the first attempt.

Distinction: i) overall credit-weighted average of the modules used in the calculation, as specified in 18.2.3, equal to 70% or greater and ii) passed all modules at the first attempt with a mark of 55% or greater and iv) where the award has a project/dissertation module (or equivalent), the mark for that module is no less than 70%.