



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

**Department of Electrical and Electronic Engineering**

**MSc Electrical Power Engineering**

**September 2019**

**Programme Specifications Proforma**

## 1. GENERAL INFORMATION

<b>1. Programme Title</b>	MSc Electrical Power Engineering
<b>2. Final Award</b>	MSc Electrical Power Engineering
<b>3. Exit Awards</b>	PgD Electrical Power Engineering PgC Electrical Power Engineering
<b>4. Awarding Body</b>	Glasgow Caledonian University
<b>5. Approval Date</b>	28/3/2017
<b>6. School</b>	Computing, Engineering and the Built Environment
<b>7. Host Department</b>	Department of Electrical and Electronics Engineering
<b>8. UCAS code</b>	N/A
<b>9. PSB Involvement</b>	Institution of Engineering and Technology (IET)
<b>10. Place of Delivery</b>	Glasgow Caledonian University, Glasgow, UK
<b>11. Subject Benchmark Statement</b>	QAA Subject Benchmark for Engineering (UK-SPEC)
<b>12. Dates of PS Preparation/Revision</b>	Sep. 2019
<b>13. Mode of Delivery</b>	Full-time, Part-time
<b>14. Programme Duration</b>	1-year Full-time, 2-years Part-time

## 2. EDUCATIONAL AIMS OF THE PROGRAMME

### 2.1. Programme Philosophy

The MSc Electrical Power Engineering is designed to equip candidates with the timely skills and specialist knowledge required to significantly enhance their careers in the electrical power industry. This programme aims to develop candidates' power engineering skills via expert teaching and extensive research work conducted by staff in collaboration with industry. This will offer very exciting opportunities to understand the real challenges in future power networks and to develop innovative solutions. Moreover, during the MSc projects, students will work on topics relevant to industry problems or currently discussed in research centres.

This programme also aims to provide graduates with the ability to critically evaluate methodologies, analytical procedures and research methods in:

- Advanced power system analysis and integration of new technologies
- Advanced power electronic, HVDC and FACTS
- Condition monitoring and asset management

## **2.2. General Aims of the Programme**

The aims of this master programme are to enable the student to acquire:

- An understanding of the operational principles and management of future power networks
- An understanding of the importance of network asset management
- An ability to analyse and design power systems problems
- Managerial, communication and information technology skills
- An ability to accommodate future technological changes
- Sufficiently wide perspective of the subject area to evaluate problem solving approaches
- Knowledge to independently conduct research work

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

The proposed programme consists of 8 taught modules and an industrially relevant project. Each module is credited with 15 credits and the final dissertation is credited with 60 credits. In accordance with the University guidelines, the following exit awards are available:

- Un-named, Postgraduate Certificate, when obtaining any 60 credits of the 120 taught credits
- Postgraduate Diploma, when obtaining 120 credits
- Master of Science, 180 credits (120 credits of taught modules and 60 credits dissertation)

Hence a student accumulating ONLY 60 taught credits would be eligible for the award of Postgraduate Certificate (un-named), student completing the 8 modules and accumulating 120 credits would be eligible for the award of a Postgraduate Diploma in Electrical Power Engineering. On

successful completion of the 8 modules, and the project, the student would be awarded the MSc in Electrical Power Engineering.

*The Programme Structure is as follows:*

<b>Table 4.1: Full-Time MSc Electrical Power Engineering - Programme Structure</b>				<b>Year</b>
<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Trimester</b>	
MMH323674	Professional practice	15	A	
MMH623585	Power Electronics and Drive Systems	15	A	Y1
MMH624493	Power System Operation & Protection	15	A	
MMH120620	Control Systems	15	A	
MMH223558	Energy Audit and Energy Asset Management	15	B	
MMH624492	Smart Grid & Sustainable Energy Systems	15	B	
MMH624490	Advanced AC and DC Transmission Systems	15	B	
MMH623670	Condition Monitoring	15	B	
MMH621937	MSc Dissertation	60	A/B/C	
		180		

<b>Table 4.2: Part-Time MSc Electrical Power Engineering – programme Structure</b>				
<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Trimester</b>	<b>Year</b>
MMH323674	Professional practice	15	A	Y1
MMH120620	Control Systems	15	A	
MMH623670	Condition Monitoring	15	B	
MMH624492	Smart Grid & Sustainable Energy Systems	15	B	
MMH623585	Power Electronics and Drive Systems	15	A	Y2
MMH624493	Power System Operation & Protection	15	A	
MMH624490	Advanced AC and DC Transmission Systems	15	B	
MMH223558	Energy Audit and Energy Asset Management	15	B	
MMH621937	MSc Dissertation	60	A/B/C	
		180		

## **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)

University Assessment Regulations for Taught Post graduate Programmes, Academic Session

2018-2019 will apply to this programme.

**Programme specific aspects: None**

**Section 17:**

PgC (unnamed) may be awarded for successful completion of **any** four taught modules.

PgD Electrical Power Engineering may be awarded for successful completion of **the** eight taught modules.

***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%.

### 3. APPENDIX, Module Mapping

#### Programme Outcomes with Modules – all modules are SCQF Level 11

			Knowledge and understanding								Practice: Applied knowledge, skills and understanding						Generic cognitive skills							Communication, numeracy and ICT skills						Autonomy, accountability and working with others										
			A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	C1	C2	C3	C4	C5	C6	C7	D1	D2	D3	D4	D5	D6	E1	E2	E3	E4	E5	E6	E7	E8	E9		
1	MMH624490	Advanced AC and DC Transmission Systems	x	x		x			x	x		x		x	x	x							x	x		x	x													
2	MMH624492	Smart Grid & Sustainable Energy Systems			x		x		x		x					x				x			x		x	x	x	x				x			x					
3	MMH624493	Power System Operation & Protection	x				x		x		x			x	x	x	x			x			x	x			x							x						
4	MMH120620	Control Systems	x			x				x		x				x								x																
5	MMH223558	Energy Audit and Energy Asset Management	x		x		x				x					x		x				x	x		x	x	x		x		x				x					
6	MMH323674	Professional Practice					x		x		x					x	x	x		x	x	x		x		x	x	x	x	x	x		x	x		x	x		x	
7	MMH623585	Power Electronics and Drive Systems	x			x				x		x	x	x	x								x			x	x							x		x			x	
8	MMH623670	Condition Monitoring	x	x			x	x	x		x					x							x	x			x	x								x				
9	MMH621937	MSc Dissertation	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x				x	x	x	x	x	x			x