

PROGRAMME SPECIFICATION – POSTGRADUATE PROGRAMMES

KEY FACTS

Programme name	Renewable Energy and Power Systems Management
Award	MSc
School	School of Mathematics, Computer Science & Engineering
Department or equivalent	Engineering
Programme code	PSRPSM
Type of study	Full time, part time
Total UK credits	180
Total ECTS	90
Partner (partnership programmes only)	
Type of partnership	

PROGRAMME SUMMARY

With an ever increasing desire for carbon footprint reduction, efficient electrical power supply and cost effective means of delivering energy, it is evident that power engineers of the future have to be mindful of a variety of disciplines. To reflect this, this programme has been designed to meet the industrial demand for the training and education of both existing and future engineers in the advanced concepts of sustainable electrical power and energy generation. The aims are to produce graduates of a high calibre with the right skills and knowledge who will be capable of leading in teams involved in the operation, control, design, regulation and management of power systems and networks of the future.

Postgraduate Certificate

For all of you completing the Postgraduate Certificate in Renewable Energy and Power Systems Management you will be able to examine the theories related to the technology and management of the power and energy industries, and synthesis and apply these to the development of power system strategies. You will have critical insight into problems related to energy and power, and be able to solve these using a range of software and practical tools. You will also use a range of techniques to undertake your scholarly work.

Postgraduate Diploma

For all of you completing the Postgraduate Diploma in Renewable Energy and Power Systems Management in addition to the above you will explore knowledge related to energy and power from different perspectives to broaden your expertise and skills. You will also evaluate critically current evidence in the energy industry and provide appropriate critiques of knowledge and techniques in the overall power engineering landscape.

MSc

For all of you completing the MSc in Renewable Energy and Power Systems Management, you will demonstrate original application of knowledge to a variety of engineering disciplines that focusses on the generation, delivery, management and economics of the power industry, and in choice of approaches to practice. You will be

engaged in research or scholarly activity that contributes new views to the development of power systems with an emphasis on renewable energy.

Aims

On completion of this programme, students will be able to work in the power industry at a variety of levels, from engineering to management. The aim of the programme is thus to provide detailed and evolving knowledge from academics and industrial experts in the area of sustainable energy as well as technologies aimed at improving current power provision. Taught modules involve the study of control systems, power generation, power control, power conditioning, power transmission, power monitoring, as well as the economics of the power industry.

WHAT WILL I BE EXPECTED TO ACHIEVE?

On successful completion of this programme, you will be expected to be able to:

Knowledge and understanding:

- Understand and evaluate the technical aspects and challenges of alternative modes of energy supply, distribution and utilisation
- Appreciate the development of and constraints on carbon and non-carbon based energy resources
- Understand the complex challenges and constraints on end-use energy efficiency

Skills:

- Integrate information across a broad range of subject areas, from engineering through economics to risk assessment
- Seek, process and interpret information from a variety of sources
- Rapidly assess the important features of new technologies

Values and attitudes:

- Recognise the need to nurture the earth's resources carefully to meet sustainable energy needs
- Develop a desire to improve the condition of the human population through technical innovation and optimal management of technology
- Demonstrate a rational and professional approach to engineering problem solving

This programme has been developed in accordance with the QAA Subject Benchmark for generic masters level programmes.

HOW WILL I LEARN?

The programme consists of eight core modules, augmented by reading and assessed coursework. Group work and individual projects are important. You will have the opportunity to attain further skills on oral presentation, team work, cognitive and research skills. Modules will be assessed on coursework, invigilated tests and unseen exams.

A feature of the programme is that some lectures are delivered by visiting lecturers from industry. A further feature is the fact that typically 50% of the students work full-time in various parts of the energy industry. This brings the benefit of information exchange based on real experience, which enhances the learning process.

The teaching and learning strategy is based on lectures, supported wherever appropriate by laboratory coursework. Assessment for the taught elements of the programme is based on coursework and written examinations.

The dissertation aims to provide you with the opportunity to deal with problems in areas where new subject knowledge is required. This involves literature search, assessment of the relevance of previous work, the development of the research task and the presentation of research results. The research dissertation is assessed primarily through a dissertation but with contributions from work carried out during the dissertation period and presentation.

WHAT TYPES OF ASSESSMENT AND FEEDBACK CAN I EXPECT?

Assessment and Assessment Criteria

Coursework and written examinations.

Assessment Criteria are descriptions, based on the intended learning outcomes, of the skills, knowledge or attitudes that you need to demonstrate in order to complete an assessment successfully, providing a mechanism by which the quality of an assessment can be measured. Grade- Related Criteria are descriptions of the level of skills, knowledge or attributes that you need to demonstrate in order to achieve a certain grade or mark in an assessment, providing a mechanism by which the quality of an assessment can be measured and placed within the overall set of marks. Assessment Criteria and Grade-Related Criteria will be made available to you to support you in completing assessments. These may be provided in programme handbooks, module specifications, on the virtual learning environment or attached to a specific assessment task.

Feedback on assessment

Feedback will be provided in line with our Assessment and Feedback Policy. In particular, you will normally be provided with feedback within three weeks of the submission deadline or assessment date. This would normally include a provisional grade or mark. For end of module examinations or an equivalent significant task (e.g. an end of module project), feedback will normally be provided within four weeks. The timescale for feedback on final year projects or dissertations may be longer. The full policy can be found at:

https://www.city.ac.uk/_data/assets/pdf_file/0008/68921/assessment_and_feedback_policy.pdf

Assessment Regulations

In order to pass your Programme, you should complete successfully or be exempted from the relevant modules and assessments and will therefore acquire the required number of credits.

The pass mark for each module is 50%.

If you fail an assessment component or a module, the following will apply:

1. Compensation: where you fail up to a total of 20 credits at first or resit attempt (15 for a Postgraduate Certificate), you may be allowed compensation if:
 - Compensation is permitted for the module involved (see the What will I Study section of the programme specification), and
 - It can be demonstrated that you have satisfied all the Learning Outcomes of the modules in the Programme, and
 - A minimum overall mark of no more than 10% below the module pass mark has been achieved in the module to be compensated, and
 - An aggregate mark of 50% has been achieved overall.

Where you are eligible for compensation at the first attempt, this will be applied in the first instance rather than offering a resit opportunity.

If you receive a compensated pass in a module you will be awarded the credit for that module. The original component marks will be retained in the record of marks and your original module mark will be used for the purpose of your Award calculation.

2. Resit: Where you are not eligible for compensation at the first attempt, you will be offered one resit attempt.

If you are successful in the resit, you will be awarded the credit for that module. The mark for each assessment component that is subject to a resit will be capped at the pass for the module. This capped mark will be used in the calculation of the final module mark together with the original marks for the components that you passed at first attempt.

If you do not meet the pass requirements for a module and do not complete your resit by the date specified you will not progress and the Assessment Board will require that you be withdrawn from the Programme.

If you fail to meet the requirements for the Programme, the Assessment Board will consider whether you are eligible for an Exit Award, as per the table below.

If you would like to know more about the way in which assessment works at City, please see the full version of the Assessment Regulations at:

http://www.city.ac.uk/data/assets/word_doc/0003/69249/s19.doc

WHAT AWARD CAN I GET?

Master's Degree:

	HE Level	Credits	Weighting (%)	Class	% required
Taught	7	120	67	With Distinction	70
Dissertation	7	60	33	With Merit	60

				Without classification	50
<u>Postgraduate Diploma:</u>					
	HE Level	Credits	Weighting (%)	Class	% required
Taught	7	120	100	With Distinction	70
				With Merit	60
				Without classification	50
<u>Postgraduate Certificate:</u>					
Part	HE Level	Credits	Weighting (%)	Class	% required
Taught	7	60	100	Without classification	50

WHAT WILL I STUDY?

The programme consists of 9 compulsory modules, plus the dissertation.

Module Title	SITS Code	Module Credits	Core/ Elective	Can be Compensated?	Level
Intro. to Power Systems & Energy Management	EPM874	15	C	Y	7
Transmission & Distribution Sys. Management	EPM875	15	C	Y	7
Power Electronics	EPM501	15	C	Y	7
Power Systems Protection and Grid Stability	EPM990	15	C	Y	7
Systems Modelling	EPM744	15	C	Y	7
Renewable Energy Fundamentals & Sustainable Energy Technologies	EPM879	15	C	Y	7
Power Systems Design and Simulation	EPM423	15	C	Y	7
Economics of the Power Industry	EPM101	15	C	Y	7
Dissertation	EPM949	60	C	N	7

You are not normally required to pass all taught modules before progressing to the dissertation.

TO WHAT KIND OF CAREER MIGHT I GO ON?

Visiting lecturers from the power industry will be more than happy to advise on career pathways and provide information on the type of work involved in the profession. Due to the variety of subjects taught, employment is possible as a power engineer, power control engineer, or on the economics side is a managerial post.

If you would like more information on the Careers support available at City, please go to: <http://www.city.ac.uk/careers/for-students-and-recent-graduates>.

WHAT STUDY ABROAD OPTIONS ARE AVAILABLE?

From time to time opportunities could arise for study abroad. Such opportunities are usually through Erasmus programmes and you would be encouraged to apply.

WHAT PLACEMENT OPPORTUNITIES ARE AVAILABLE?

The School Professional Liaison Unit provides support to prepare CVs, interviews and application for internships.

WILL I GET ANY PROFESSIONAL RECOGNITION?

Accrediting Body: Institution of Engineering and Technology

Accrediting Body: Institute of Measurement Control (InstMC)

Nature of Accreditation: Further learning for CEng

HOW DO I ENTER THE PROGRAMME?

A minimum of Lower Second Class degree, or equivalent, in an Engineering, Scientific or Mathematical discipline will normally be required.

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