MSc Electrical Power Systems Engineering (Distance Learning)

The course will develop your understanding of how future electrical networks will be designed and operated. It will provide you with a solid understanding of the characteristics of components such as generators, lines, cables, transformers and power electronics devices. It has been designed in a flexible format, supporting those who work in industry.

Find out more about MSc Electrical Power Systems Engineering (Distance Learning).

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<th>2.5-5 year part-time MSc</th>
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<td>September and February</td>
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6th Best university in the UK (QS World University Rankings, 2018)

29th Best university in the world (QS World University Rankings, 2018)

Flexible format
Transform your career while you continue working
WHAT YOU WILL STUDY

You can expect to study units covering topics such as:

**ELECTRICAL ENERGY SYSTEMS**
- Structure of Electrical Energy systems
- Basic analytical skills for electrical energy systems
- Components associated with electrical energy systems

**ANALYSIS OF ELECTRICAL POWER AND ENERGY SYSTEMS**
- Faults in power systems
- Analysis and control of large networks
- Analysis and control of power electronics systems

**POWER SYSTEM PLANT, ASSET MANAGEMENT AND CONDITION MONITORING**
- Basic principles
- Design of major power system plant components (transformers, overhead lines, cables and switchgear)
- Asset management and condition monitoring
- Substation and system design

**POWER SYSTEM OPERATION AND ECONOMICS**
- Optimisation
- Market and economics
- Security
- Investment

**SMART GRIDS AND SUSTAINABLE ELECTRICITY SYSTEMS**
- Distributed low carbon technologies
- Smart grids
- Sustainable energy systems

**POWER SYSTEM DYNAMICS AND QUALITY OF SUPPLY**
- Power System Dynamics
- Quality of Supply
- Reliability

**POWER SYSTEM PROTECTION**
- Introduction to protection systems
- Conventional protection systems
- Advanced protection systems

**TECHNIQUES FOR RESEARCH AND INDUSTRY**
- Project Planning
- Information Sources (literature reviews, referencing)
- Case Studies
- Intellectual Property
- Business planning
- Health and Safety in the Workplace
- Academic Malpractice and Professional Ethics
- Report writing

**DISSERTATION PROJECT**
- Your dissertation project will ideally be based on a problem you and your company need to resolve, ensuring the programme delivers value for both you and your employer.
- This is presented as a 15,000 – 20,000 word report based on the research programme selected.

YOUR PROGRAMME DIRECTOR Dr James Brooks

“This programme represents a transformational change in one of the world’s oldest and best regarded power systems MSc courses. The opportunity to transition to online learning has allowed us to revamp material and look deeply at our educational and assessment practices. I’m really proud of what the academics and support staff here at the University of Manchester have produced and I believe that this course will provide great benefits to both you and your employer. The course will provide you with the tools and techniques to keep pace with the rapidly evolving electricity industry, covering the latest developments and delivering up-to-date training in all aspects of electrical power systems.”

Carlos Manuel Gouveia Pereira, May 2018
Technical Project Manager at Siemens Gamesa Renewable Energy, Denmark

“This course prepares me on actual and important subjects about power systems. The knowledge obtained will without any doubt give me more confidence and tools to tackle the daily engineering challenges our society face.

On top of that, it will give me the satisfaction and personal realisation of expanding and improving my knowledge in an area I am deeply interested in.”

NEXT STEPS

Please contact us to find out more or arrange a personal consultation with an academic on the course.

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Email: power-systems@manchester.ac.uk
www.manchester.ac.uk/power-systems