MSc Taught Courses
Contents:

Your University 4
Your Department 5
Your City 6
What our students say 7
Your future 8
Your options 9
Our courses 10

Contact:

Dr. Nathan Porter
MSc Admissions Officer

Department of Electronic and Electrical Engineering
The University of Sheffield
Sir Frederick Mappin Building
Mappin Street
Sheffield
S1 3JD

Email: eee-mscrec@sheffield.ac.uk
Tel: +44 (0) 114 222 5442
Welcome!

A personal message from our Head of Department...

“I am delighted that you are considering study with us. Our courses teach you not only to a high standard, but how to use what you learn in a practical way, and prepare you for the challenges in life and employment ahead. It’s what makes our students some of the most sought-after and employable in the world.

Here in EEE, we pride ourselves in being able to offer you a fulfilling learning experience supported by our excellence in world leading and cutting edge research, academics who are expert in their field and a valuable administrative team dedicated to helping you.

Choose the University of Sheffield if you wish for every success in your future”.

Prof. Geraint Jewell
Head of Department
The University of Sheffield is ranked second out of UK universities earning the most research income from engineering by HESA.

Many of our research partners are global leaders in industry including household names such as Nissan and Siemens. Rolls-Royce sponsor facilities at Sheffield.

We have invested over £80 million in a fantastic state-of-the-art new engineering building; The Diamond. This is at the heart of the campus and the centrepiece for the Faculty of Engineering's continued success. The building, which can accommodate an additional 1600 students, provides cutting edge teaching and research facilities and student-led learning spaces.

Our work is ground-breaking and diverse. One of our key strengths is in bringing together people from different backgrounds with different skills, adding fresh perspectives to problem solving.
We are respected internationally for our many important contributions in the field of Electronic and Electrical Engineering. This is supported by the fact that we are ranked Top 5 in the UK in the most recent national Research Assessment Framework with 95 per cent of our research classed as being internationally recognised or higher. If you choose to carry out your research with us, you will join a vibrant community of approximately 500 postgraduate and undergraduate students. We have 42 academics (including 18 professors), a dedicated team of 21 technical and 26 administrative support staff.
Sheffield is a fantastic city to be a student. The community is diverse and one which caters for all cultural needs. It has busy energetic streets, cosmopolitan cafes, bars and restaurants, theatres, cinemas, live music, galleries and national sporting facilities. There are over 150 woodlands, 50 public parks and part of the city is within the stunning Peak District National Park which offers many visitor attractions and great opportunities for pastimes such as walking, cycling, photography and wildlife watching. If that is not enough for you, Sheffield’s central UK location and excellent transport links mean that you can easily travel to other places on your days off.
I have been studying in Sheffield for one year and it is brilliant. Really happy I chose to study in EEE.

There is a strong community spirit. Everyone’s so nice in Sheffield.

There’s something for everyone, so much to do, see, and visit - it’s hard to be bored!

You talk to anyone, they’ll talk to you. I’ve yet to meet someone who isn’t helpful.

It was my first time in the UK and I was worried but everyone was really nice and very friendly.

I will be sad to leave Sheffield, it is like another home.
Your Future

Job prospects for our MSc graduates are excellent, with potential to be employed by numerous companies such as ARUP, Ericsson Communications, HSBC, Jaguar Land Rover and Intel Asia Pacific.

The majority of Electronic and Electrical Engineering graduates entering employment find degree-related work, many in the manufacturing sector. In addition, a small number of graduates find work outside of their subject area in roles which make good use of their numeracy, analytical and problem solving skills.

At the University of Sheffield, we pride ourselves on the help and support we offer our students. As soon as you arrive to study your MSc you can start to plan for your future with the help of our excellent Careers Service and Employability Team. We offer skills sessions, advice, workshops and employer led development sessions. Both national and international companies advertise vacancies with us.

If you wish to stay in the UK to work after you graduate you will need to make sure you have an appropriate work visa.

Alternatively you can go on to study a PhD with us like many other students who choose to stay in Sheffield. Find out more about PhD study: www.sheffield.ac.uk/postgraduate/research

For more information on careers: www.sheffield.ac.uk/careers/students/degree/eee
Your options

We currently offer the following MSc courses. Most are full time, one year*, taught courses and start in late September,

- MSc Electrical and Electronic Engineering
- MSc Data Communications
- MSc Semiconductor Photonics and Electronics
- MSc Wireless Communication Systems
- MSc Advanced Electrical Machines, Power Electronics and Drives
- MSc Bioengineering: Imaging and Sensing * this course is taught over 2 years

There are two 15-week semesters. Most of the MSc courses consist of core modules, optional modules and an individual project. The project takes place over the summer.

When is the deadline for application?

There is no official deadline for applications. However, due to high demand and the limited places available we advise that you apply as soon as possible. You must allow sufficient time to process funding, the issue of your CAS number (Confirmation of Acceptance for Study) and finally, your visa.

Will you be automatically accepted?

All applications are considered on an individual basis by the admissions tutors and therefore offers may vary.

What are the entry requirements?

Our typical requirement is a minimum of a 2:1 degree or an equivalent international degree qualification. This must be in a relevant subject area and from a reputable institution. In addition, we require candidates to have a suitable English language qualification such as a minimum score of 6.5 (with 6 in each component) in the IELTS exam or equivalent. An IELTS=6 and a summer course would be suitable.

What supporting documents are needed?

You should apply online to: https://www.shef.ac.uk/postgradapplication

Your application should include as many of the following documents as possible:

- Your official degree certificate (translated)
- Your official degree transcript (translated)
- Your English qualifications
- Two references (at least one must be academic)

If you have yet to recieve your degree certificate, or English qualifications, you can still apply. Please submit your most recent documents.
Biomedical Imaging and Sensing is, in the broadest sense, a set of competencies from engineering and sciences to support future quantitative biology and personalised medicine.

The course will provide you with theoretical and practical knowledge to develop methods and systems for disease understanding, diagnosis, prognosis and therapeutics where imaging and sensing play a key role.

You will focus on the methods and systems and, hence, the foundations on engineering and science, however through an interdisiplinary seminar series and your final project, you will be exposed to the unmet clinical needs in biology and medicine and will be introduced to interdisiplinary research.

Offered on a full-time basis over two years, the course requires completion of nine modules (3 compulsory, 6 optional) and a major research project dissertation.
Our MSc in Electronic and Electrical Engineering allows students to develop their understanding of electronic devices and systems and is ideal preparation for a career in industry or research.

The highly flexible nature of the course means you’ll have the opportunity to experience a wide range of topics across electronic and electrical engineering or to specialise in an area that particularly interests you.

Our department is internationally recognised for the quality of its research and you’ll be taught by academic staff who are leading innovations in areas such as the development of high performance nanostructure electronic devices and the design of next-generation communication and radar systems.

This course is offered on a full-time basis over a year, starting in September. It requires completion of eight modules and a major research project dissertation.

**MSc Electronic and Electrical Engineering**

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<thead>
<tr>
<th>Modules</th>
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</thead>
<tbody>
<tr>
<td>AC Machines</td>
</tr>
<tr>
<td>Advanced Control of Electric Drives</td>
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<tr>
<td>Energy Storage Management</td>
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<tr>
<td>Motion Control and Servo Drives</td>
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<tr>
<td>Permanent Magnet Machines and Actuators</td>
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<td>Power Electronics Converters</td>
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<tr>
<td>Power Semiconductor Devices</td>
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<tr>
<td>Advanced Computer Systems</td>
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<tr>
<td>Advanced Integrated Electronics</td>
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<tr>
<td>Advanced Signal Processing</td>
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<tr>
<td>Semiconductor Materials</td>
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<tr>
<td>Principles of Semiconductor Device Technology</td>
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<tr>
<td>Packaging and Reliability of Microsystems</td>
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<tr>
<td>Nanoscale Electronic Devices</td>
</tr>
<tr>
<td>Energy Efficient Semiconductor Devices</td>
</tr>
<tr>
<td>Optical Communication Devices and Systems</td>
</tr>
<tr>
<td>Computer Vision</td>
</tr>
<tr>
<td>Electronic Communication Technologies</td>
</tr>
<tr>
<td>Data Coding Techniques for Communications and Storage</td>
</tr>
<tr>
<td>Principles of Communications</td>
</tr>
<tr>
<td>Antennas, Propagation and Satellite Systems</td>
</tr>
<tr>
<td>Mobile Networks and Physical Layer Protocols</td>
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<tr>
<td>System Design</td>
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<tr>
<td>Broadband Wireless Techniques</td>
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<tr>
<td>Wireless Packet Data Networks and Protocols</td>
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MSc Data Communications

The efficient transfer of information around the world is a vital part of today’s global economy and there is a huge demand for engineers with skills in data communications.

This course draws upon the expertise of both the Departments of Electronic and Electrical Engineering and Computer Science to ensure students have the range of skills and knowledge needed to make an impact in this rapidly developing field.

You will be taught about all aspects of data communication systems, from transmission methods and hardware, to information coding, focusing on the latest advances in technology.

This course requires completion of eight modules (6 compulsory, 2 optional) and a major research project dissertation.

Network and Inter-Network Architectures
Network Performance Analysis
Data Coding Techniques for Communications and Storage
Advanced Communication Principles
Mobile Networks and Physical Layer Protocols
Foundations of Object-Orientated Programming

OR

Object-Oriented Programming and Software Design
This specialist masters course is ideal preparation for anyone interested in working in the fast growing field of modern optoelectronics and photonics engineering, as well as providing those already working in the industry with the opportunity to update their knowledge and skills.

The department has a large, dedicated research focus in this area and this is reflected in our world-class semiconductor growth, fabrication and characterization facilities. The course is led and taught by academics with wide ranging high-profile research spanning several of the key developing areas of optoelectronics and photonics.

You’ll gain a comprehensive understanding of the physical, structural, optical, electronic properties of semiconductor materials used in modern electronic devices.

This course consists of 7 compulsory modules and a major research project.

MSc Semiconductor Photonics and Electronics

Semiconductor Materials
Principles of Semiconductor Device Technology
Packaging and Reliability of Microsystems
Nanoscale Electronic Devices
Energy Efficient Semiconductor Devices
Optical Communication Devices and Systems
Compound Semiconductor Device Manufacture
The growing need for powerful and effective wireless communication systems has created a vibrant global market for communications engineers with specialist skills in wireless technology. Sheffield is one of a very small group of UK universities with the expertise to meet this demand.

Wireless communication is a key research theme within the department, which means you’ll be taught by staff who are involved in cutting-edge research in the field.

This Masters course has a strong R&D bias and has been designed to provide the theory underpinning communication systems, alongside knowledge of the latest innovations in technology.

This course is offered on a full-time basis over a year, and requires completion of eight modules (6 compulsory, 2 optional) and a major research project dissertation.
MSc Advanced Electrical Machines, Power Electronics and Drives

Power electronic converters are a vital feature of a wide variety of modern technologies, such as hybrid and all-electric vehicles, renewable energy systems and aerospace technology.

Our MSc in Advanced Electrical Machines, Power Electronics and Drives has been developed to provide students with in-depth knowledge of the key component technologies within electrical machines and how they can be integrated into advanced systems.

Topics discussed include AC machines, motion control and servo drives, permanent magnet machines and actuators, and energy storage and management. The course is delivered by academic staff who are at the forefront of research in electrical power engineering.

The course requires completion of eight modules (6 compulsory, 2 optional) and a major research project dissertation. The course is modular, allowing students some flexibility in the design of their degree.
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