

# School of Electrical and Electronic Engineering

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[www.manchester.ac.uk/eee](http://www.manchester.ac.uk/eee)

# Why these subjects?

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The world is increasingly dependent on **electrical, electronic** and **mechatronic** engineering



Sensors, wireless telemetry,  
engine management,  
traction control (not any more!)

**We make it intelligent**



Electrical,  
Electronic and  
Mechatronic  
Engineering

*Keeping you  
in touch*

Could it fly without Electrical,  
Electronic and Mechatronic  
Engineering?



We make it possible to fly!



# Electrical, Electronic and Mechatronic Engineering

*Keeping you in tune*



# Electrical, Electronic and Mechatronic Engineering

*Bringing maths  
and physics  
to life*



# Electrical, Electronic and Mechatronic Engineering

*Putting maths and  
physics to work!*



# Why these subjects?

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The world is increasingly dependent on electrical, electronic and mechatronic engineering

Can you imagine life  
without it?

# School of Electrical and Electronic Engineering

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## About Us:

- Largest of its type in the country
- ~ 500 undergraduates and ~400 postgraduate students
- 60 members of academic staff plus support staff

# School of Electrical and Electronic Engineering

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**Driven by:**

**Global  
challenges**

Manchester Energy houses some of the best facilities in the world for energy research and education

# Energy

supply, distribution, security, renewable, efficiency, clean, affordable...



# Autonomous systems



deep sea exploration, transport systems,  
nuclear/radioactive storage,  
mine detection...

# e-Agri

(Electronics in Agriculture)

## Security of food supply

- improved crop yield
- reduced use of pesticides
- extended shelf-life

# Ten reasons why...

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1. Employability
2. Teamwork
3. Clubs and groups
4. Industrial experience
5. Peer Assisted Study Scheme (PASS)
6. IET accreditation
7. Industrial partners
8. Summer jobs
9. Excellent research
10. Satisfied students

# Employability

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## The right course:

- Electrical and Electronic Engineering (EEE)
- Electronic Engineering (EE)
- Mechatronic Engineering (MTE)

# Undergraduate Courses



## The right content:

- Year 1 All courses the same (essential background material)  
**Microcontroller Project**
- Year 2 Semester one common, semester two course specific  
**Embedded Systems Project**
- Year 3 Course specific, elective course units  
**Individual Project**
- Year 4 Course specific, elective course units  
**Team Project**



# Employability

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## Example:

### Electrical Power Networks for the 21<sup>st</sup> Century - **Smart Grids**

- Renewable and low-carbon energy sources
- Electric vehicles, smart home appliances and electric heating
- Co-operation of energy producers and consumers

# Employability

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## Example:

### Electrical Power Networks for the 21<sup>st</sup> Century - **Smart Grids**

- UK power industry alone requires around **2000** electrical/electronic/mechatronic engineers EVERY YEAR for the next 15 years
- Investment of **£200bn** over the next 15-20 years

# Employability

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“The essence of a Manchester graduate is a sound grounding in electrical engineering with a focus on power engineering which, in our experience, enables them to impact our business immediately”

**Chris Murray**

Director,

UK Transmission, National Grid

**nationalgrid**

# Employability

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“We actively recruit Electrical & Electronic Engineering graduates from Manchester as we consider the skills, knowledge and quality of these graduates to be exceptionally good”

**Robert Morton**

Managing Director

National Instruments, UK & Ireland

# Teamwork

It is essential that you develop team working skills, we help with:

- Lab Groups
- Embedded Systems Project
- 4<sup>th</sup> year team project



# Clubs and groups

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- EEE Society

-  **E4C Electronics Club**

- Formula Student

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UNIVERSITY OF MANCHESTER  
STUDENTS' UNION

-  Find us on  
Facebook [www.facebook.com/EEEManchester](http://www.facebook.com/EEEManchester)

# Industrial experience

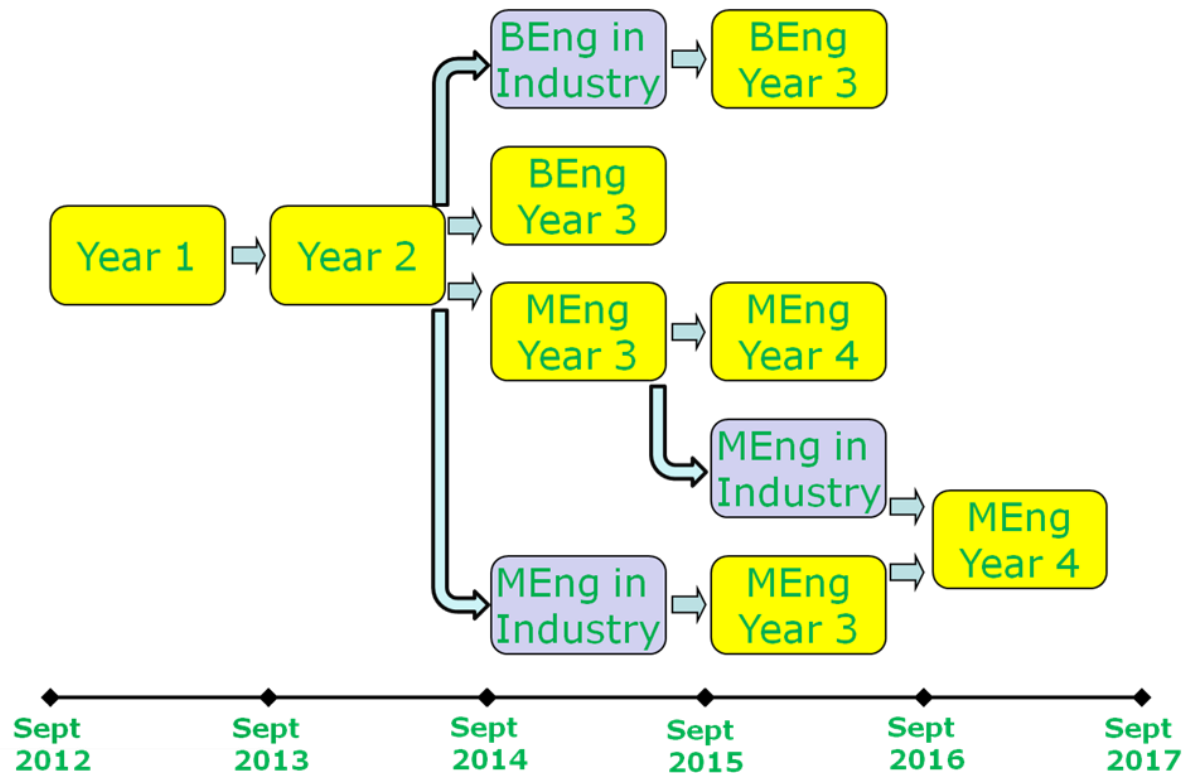
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Courses can be combined with an accredited year-long industrial placement for the award of a “**with Industrial Experience**” degree.

- Technical experience and transferable skills
- Project management skills
- Interview ‘platform’
- Helps you to make informed career choice
- Paid year – cost neutral

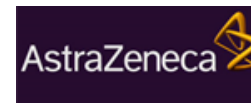
# Industrial experience

## Course Progression



# Industrial experience

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# PASS

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PASS (Peer Assisted Study Sessions/Scheme) is where students from the later years of study assist those in their first year.

# IET accreditation

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## Observations from the accreditation visit:

- The development of a strong sense of **community** within the School with extra-curricular activities including 'EEESoc' and the Electronics Club.
- Staff have been shortlisted for IET Innovation awards.
- Staff have obtained awards for the **quality** of their teaching.

# Industrial partners

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The School has strategic industrial partners for both **teaching** and **research**:

- National Instruments (NI)
- Rolls-Royce
- National Grid
- Syngenta



# Summer jobs

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Summer jobs (internships) are good for you financially and they develop your skills, we offer:

- Research focused
- Teaching development

opportunities.

# Excellent research

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Graded 2<sup>nd</sup> in the UK for research **quality** in the latest Research Assessment Exercise (RAE).

This means when you graduate you will have the education and knowledge **needed** by industry now and in the **future**, which is what makes our graduates so popular.

Ranked 2<sup>nd</sup>  
for Research Quality

# Excellent research

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- National Grid High Voltage Research Laboratory
- Oxford Instruments VG Semicon Molecular Beam Epitaxy Laboratory
- Rolls-Royce University Technology Centre
- Syngenta Sensors University Innovation Centre
- Agilent Technologies Milimeter-Wave Laboratory

# Satisfied students

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**96%** Overall Satisfaction

the  
**National  
Student  
Survey**



# Satisfied students

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HOME / UNIVERSITY GUIDE

# UNIVERSITY GUIDE 2012

in association with



HOME SEARCH FEATURES METHODOLOGY

## THE SUNDAY TIMES UNIVERSITY LEAGUE TABLES

Data analysis by SPA Future Thinking [View all tables](#)

### Electronic and electrical engineering

Rank	Institution	Town	Teaching excellence	Entry points	Graduate jobs	Unemployment (%)	Firsts/2:1s (%)	Dropout rate	Total (%)
1	University of Manchester	Manchester	92.5	387	-	7.4	61.9	10.9	83.9
2	University of Southampton	Southampton	75.1	448	96.9	4.3	74.3	2.4	82.9
3	University of Bath	Bath	83.9	416	-	5.2	57.4	5.0	82.4
4=	Imperial College London	London	73.5	491	-	11.6	78.5	4.3	81.0
4=	Loughborough University	Loughborough	82.3	351	99.0	7.5	65.2	3.3	81.0
4=	University of York	York	90.6	373	-	8.9	63.2	19.5	81.0
7	University of Bristol	Bristol	77.9	433	-	10.6	69.7	4.8	79.7
8=	University College London	London	73.4	443	-	-	77.9	-	78.7
8=	University of Sheffield	Sheffield	80.8	373	-	6.6	62.7	2.7	78.7
10	University of Strathclyde	Glasgow	78.8	404	-	8.3	59.4	8.0	77.0
11	University of East London	London	82.9	-	-	-	47.3	4.5	76.2
12	University of Edinburgh	Edinburgh	78.9	388	-	-	72.4	12.6	75.3

# Fees and funding

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## **Tuition fees for 2012 entry:**

How much?            £9,000

Fee reduction dependent on family income, a leaflet giving details is available.

# Fees and funding

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## **Power Academy** (IET + Industry)

Who?	Home/EU (EEE/MTE only)
To qualify:	Competitive
How much?	£2,200 per year + Contribution to Tuition Fees + Other benefits

# Fees and funding

## Power Academy (IET + Industry)



# Fees and funding

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- IET
- Whitworth scholarship
- BP
- National Instruments
- Procter & Gamble

# Entry requirements

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## Standard MEng offer:

- AAA - "A" levels (Maths + Physics or Electronics or Further maths)
- DDD - National Diploma (Electrical Engineering discipline including a distinction in Advanced Maths at level III)

# We give you...

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- IET membership in your first year
- A microcontroller development system - but you have to build it!
- A National Instruments myDAQ



NATIONAL INSTRUMENTS

# LabVIEW™

**Certified Associate Developer**

# School of Electrical and Electronic Engineering

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Making modern life possible,  
sustainable, enjoyable

[ug-eee@manchester.ac.uk](mailto:ug-eee@manchester.ac.uk)  
[www.manchester.ac.uk/eee](http://www.manchester.ac.uk/eee)

