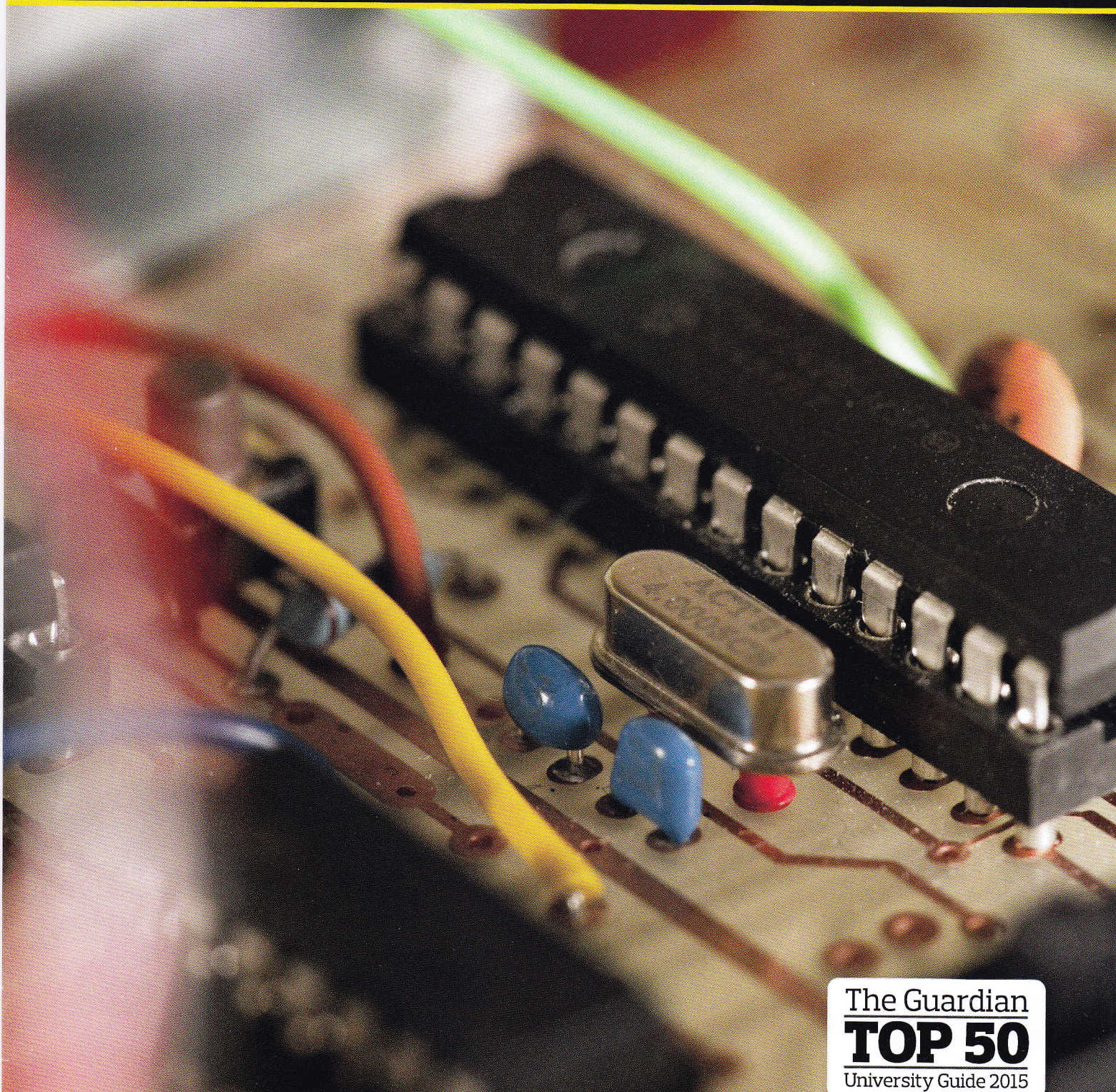


# Control and Instrumentation

## MSc



The Guardian  
**TOP 50**  
University Guide 2015

College of Engineering and Technology



UNIVERSITY  
of DERBY

[www.derby.ac.uk/engtech](http://www.derby.ac.uk/engtech)

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## Essential Information

### Location

Derby campus, Markeaton Street

### Duration

One year full time or two to three years part time

### Start dates

September or January

### Entry requirements

An undergraduate degree (at least second class) in electrical and/or electronic engineering, or a closely related discipline. Additional bridging studies may be required if your first degree does not include relevant prior learning.

### Entry requirements for EU/international students

As above (or the international equivalent qualification). If English is not your first language, you'll need to hold an IELTS of 6.0 or equivalent.

### Suitable for applicants from



# Control and Instrumentation

MSc

## The course aims to

- Develop your skills and knowledge in areas such as automotive, aerospace, petrochemical and scientific and manufacturing applications.
- Allow you to apply for Chartered Engineer status when you graduate; this course has been developed to meet all the requirements.
- Provide you with the support of an experienced team of published researchers who will enable you to develop your own skills and scholarly interests.

## About the course

This course is accredited by the Institute of Measurement and Control and aims to equip you with the knowledge required for professional registration as a Chartered Engineer (CEng).

During the course, you'll focus on advanced aspects of control and instrumentation, alongside broader engineering topics. You'll deepen your knowledge of control and instrumentation while addressing current engineering issues and technological advances across a broad spectrum of subjects. The optional modules allow you to develop your expertise in related topics, such as embedded systems and industrial electronics. These will be supported by studies in research methods and advanced management theories. During your Independent Engineering Scholarship module, you'll undertake applied research in a particular field to a very advanced level.

This course is flexible, so you'll have some choice in the specialist subject modules you take and the ways you learn. You'll study some modules through lectures and tutorials, one online and one in your workplace. There is time given to both independent study and group work, and your assignment will give you the opportunity to gain valuable teamwork experience.

## Course content

This course is made up of three stages – Postgraduate Certificate, Postgraduate Diploma and Masters.

### Postgraduate Certificate

You'll study these modules:

#### Research Methods: Application and Evaluation

This module will advise, guide and develop the skills required for identifying and applying appropriate research methods and developing an overall research plan. Your learning will include how to identify, evaluate and apply different research philosophies, research approaches, research strategies, research methods and methods of data collection and analysis.

#### Intelligent Instrumentation Systems

This module aims to give you an in-depth understanding of the basis of instrumentation, advanced signal processing and the operation of currently used sensors and modern instrumentation techniques and applications. It will also underpin your ability to appreciate the application of intelligent instrumentation systems in a variety of sectors, including manufacturing industry, instrument production and development and medical research and practice.

#### Embedded System Design

Embedded systems are products in which tiny computers are hidden in order to undertake a control function. They appear in a wide variety of forms, including the car, domestic appliances, stage, office or medical equipment, and industrial machinery. In this module industrially relevant hardware and software design skills are developed, including embedded C programming, and working with a real-time operating system. The wider contexts of embedded devices are explored, for example relating to real time, low power or high reliability.

### Postgraduate Diploma

You'll study these modules:

#### CPD and Strategic Management

During this module you'll develop your managerial skills in preparation for work in a global industry environment. You will study

Accredited by:

**Institute of  
Measurement  
and Control**



strategic concepts and learn how to transfer them into your own industry or specialism using a structured approach. You will focus on managing the global future by analysis rather than by instinct and become adept at forecasting and financial analysis, while considering business ethics.

### Modern Control System Design

Modern control system design is an integral part of modern society. It appears in numerous applications all around us, including aerospace, entertainment, motor vehicle and office environments. You will analyse advanced control systems using analytical techniques and computer tools. You'll be introduced to optimal control techniques, solutions to the linear quadratic regulator and linear quadratic Gaussian problems.

You'll also choose one of these modules:

#### Industrial Electronics

This module is designed to consolidate your postgraduate and industrial knowledge and the practical implementation of your objectives in an industrial context. We will locate relevant issues in an academic context to promote the links between conceptual analysis and industrial practice, making possible an accurate evaluation of the project's objectives.

#### Negotiated Technical Module

You will engage with a specific aspect of the technology used within your subject area at masters level. The module includes project management, target-setting and the practical implementation of your objectives in an industrial context. We will locate relevant issues in an academic context to promote the links between conceptual analysis and industrial practice, making possible an accurate evaluation of the project's objectives.

#### Masters

You'll study this module:

#### Independent Engineering Scholarship

This module provides you with an opportunity to apply and enhance the knowledge and intellectual skills gained during your programme and develop your specialist skills in an area of your choice. The aim is to develop your ability to work independently, in a chosen topic, using

appropriate research and design concepts, and analytical, test, measurement, and evaluation techniques in order to produce a finished artefact or product. You will be challenged to demonstrate a critical understanding of how the boundaries of knowledge are advanced through research in the production of clear, logically argued, and original work related to your field of study.

#### Similar courses:

- MPhil Technology
- PhD Technology

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## Essential Information

### How To Apply

[www.derby.ac.uk/applyonline](http://www.derby.ac.uk/applyonline)

### Fees for UK/EU students

2014/2015 fees were £495 per 20 credit module. You'll study the equivalent of nine 20 credit modules in total. Please check our website for the latest information.

### Fees for international students

2014/2015 fees were £11,260 per year. Please check our website for the latest information.

### Contact us

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### Follow us on





Order your prospectus online:  
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If you'd like this information in large print,  
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The information in this leaflet was correct at the time of printing;  
please check our website for the most up to date information.

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