

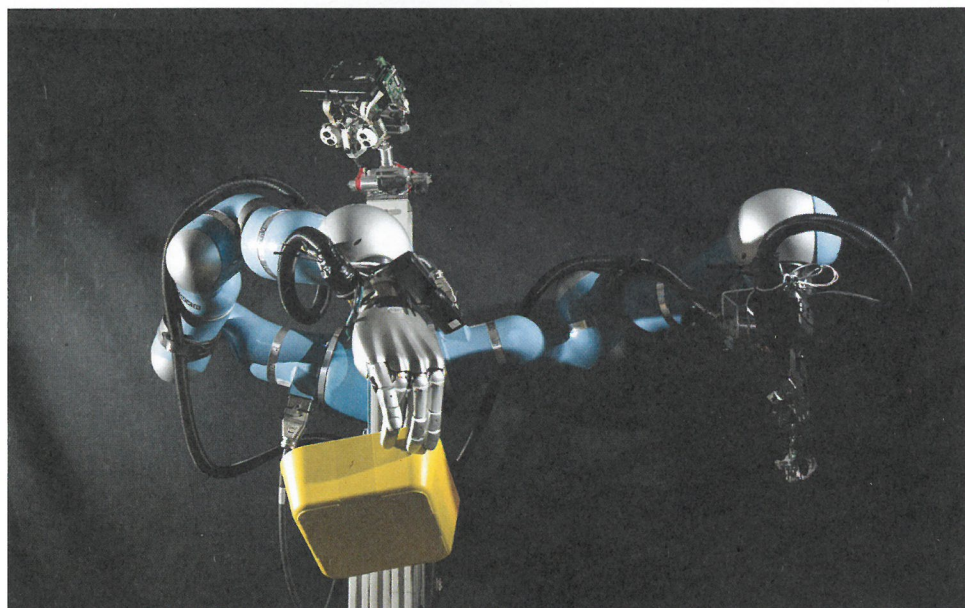


UNIVERSITY OF  
BIRMINGHAM

SCHOOL OF  
ENGINEERING

# MECHATRONIC AND ROBOTIC ENGINEERING

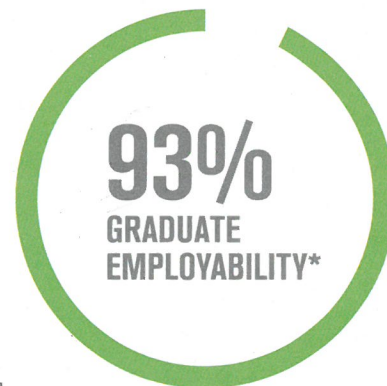
## BEng/MEng





# Mechatronic and Robotic Engineering

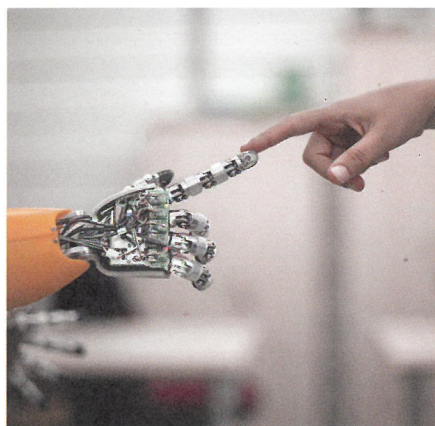
## BEng (H6H3)/MEng (HH63)



In space or underwater, in the home or at work, on or in the human body, electromechanical systems that sense and interact with their environment are an integral part of life in the 21st century. Such systems can act autonomously or under the supervision of human operators, which creates new opportunities to engineer the intelligent technologies around us.

The Department of Electronic, Electrical and Systems Engineering at the University of Birmingham is offering brand new and exciting degree programmes in Mechatronic and Robotic Engineering, driven by our breadth of research expertise and industrial collaboration. The programmes combine mechanical, computer, and electronic and electrical engineering to address the challenges of designing and deploying intelligent technologies.

You will gain skills in computer engineering, covering topics such as machine learning and data mining, which enable mechatronic systems to make decisions, to be autonomous and to be effective. You will study human-computer interaction and virtual and augmented reality, to understand how people can cooperate successfully with intelligent technologies. You will learn how to supply, manage and control electrical power and how to transfer power between the electrical and mechanical domains.

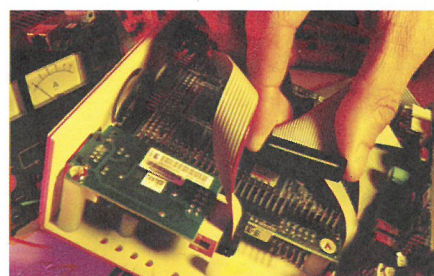


You will learn how to make your systems aware of the situation they are working in, combining computer engineering with capabilities in sensor devices, signal analysis and analogue and digital electronics.

The first year of the degree programme is shared with all students in the School of Engineering, giving you a background in mechanics, materials, energy transfer, programming and engineering mathematics as well as electrical and electronic devices. In project work you will be introduced to the demands of working in multidisciplinary teams which are part of modern engineering. The second year will include a substantial mechatronics group project encompassing electromagnetics, data acquisition, control and embedded computing which unifies your learning across course modules. In the later years of the degree you will take specialist courses which define your expertise.

You will also carry out an individual mechatronics research project which will be defined in consultation with a subject expert. Graduates of the programme will have the blend of mechatronic and software integration skills required for successful careers in robotics, in all forms of transport, in medical technologies, in advanced manufacturing and in space technologies, in research and development and in product design.

Our membership of the Electronic Skills Foundation enables students on this programme to apply for scholarships providing both bursaries and summer placements in addition to any other scholarships for which they qualify or apply.



### FACT FILE

#### Entry requirements:

MEng: AAA with A level Mathematics  
BEng: AAB with A level Mathematics  
Equivalent qualifications are also accepted such as IB, BTEC, and overseas qualifications. Please contact the School for more information.

### LEARN MORE

Admissions Tutor  
Dr Tim Jackson  
Tel: +44 (0)121 414 4230  
Email: [ug-admissions-eng@contacts.bham.ac.uk](mailto:ug-admissions-eng@contacts.bham.ac.uk)

[www.birmingham.ac.uk/beng-mechatronic](http://www.birmingham.ac.uk/beng-mechatronic)

[www.birmingham.ac.uk/meng-mechatronic](http://www.birmingham.ac.uk/meng-mechatronic)

This leaflet was written several months in advance of the start of the academic year. It is intended to provide prospective students with a general picture of the programmes and courses offered by the School. Please note that not all programmes or all courses are offered every year. Also, because our research is constantly exploring new areas and directions of study some courses may be discontinued and new ones offered in their place.

\* DESTINATION OF LEAVERS FROM HIGHER EDUCATION 2015/16



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# Mechatronic and Robotic Engineering

## Year 2 onwards

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### YEAR 2

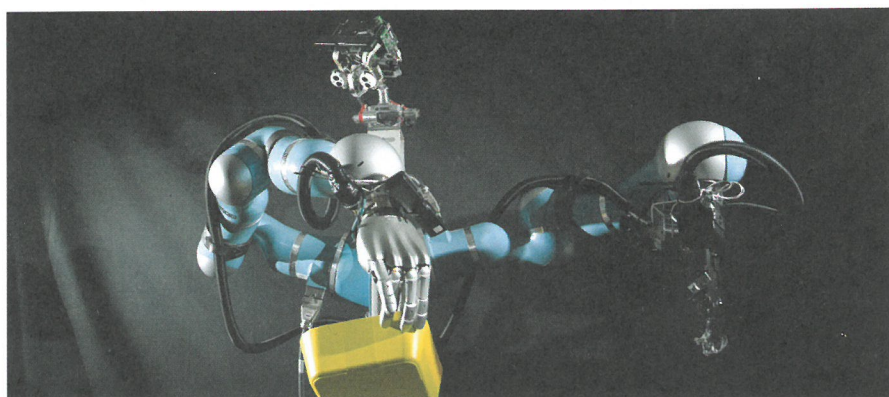
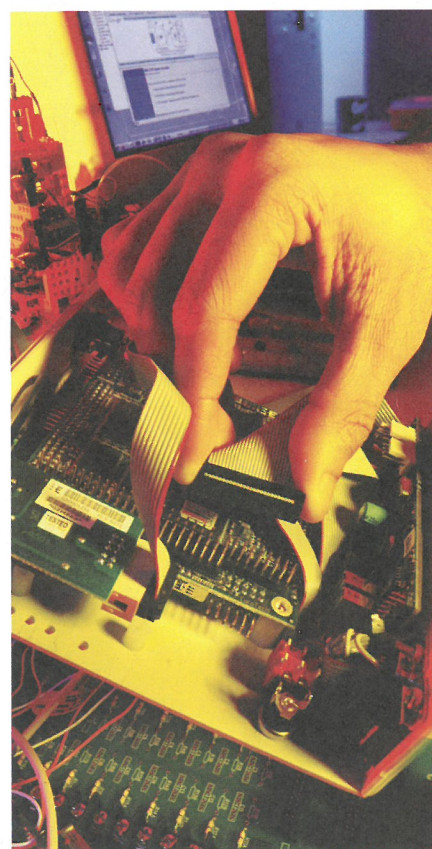
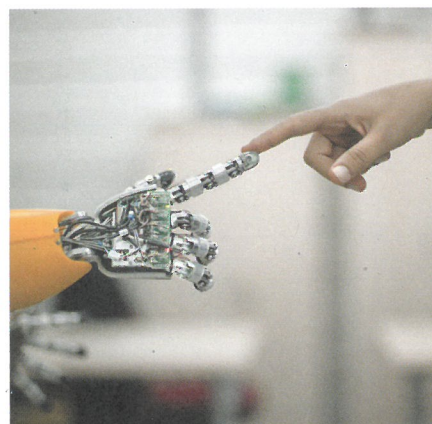
The second year will include a substantial mechatronics group project encompassing electromagnetics, data acquisition, control and embedded computing, which unifies your learning across course modules.

### YEAR 3 AND 4

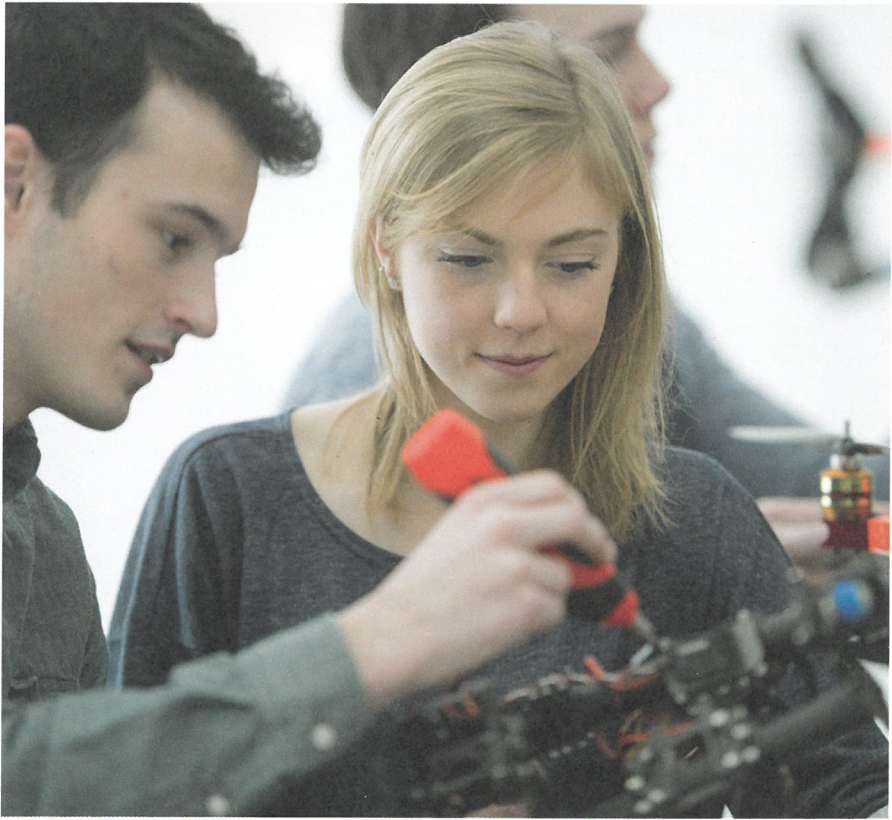
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Year 1	Year 2	Year 3	Year 4
Integrated Design Project 1	Integrated Design Project 2	Integrated Design Project 3	Individual Research Project (Mechatronics)
Electrical Engineering	Electrical Energy and Control	Electronic Engineering	Sensing and Control for Autonomous Systems
Computing	Mechanics	Mechatronic Design	Core and optional modules from key Mechatronic and Robotic themes
Engineering Materials	Digital and Embedded Systems	Virtual Augmented Reality	
Mechanics	Circuits, Devices, Electromagnetics	<b>BEng:</b> Research project <b>MEng:</b> Compulsory modules on key themes	
Fluid Mechanics	Engineering Maths		
Engineering Maths			

These are current modules and may be subject to change. For the most up-to-date list please visit: [www.birmingham.ac.uk/eese](http://www.birmingham.ac.uk/eese)