



All About Robotic and Mechatronic Engineering

Robotic and mechatronic is an emerging field that are both high priority and high impact and graduates from this programme can contribute to the growing interest and demand in the industry for professional robotic and mechatronic engineers, both locally and abroad. As robotic and artificial intelligence become the key technology enabler for the future, graduates from the programme will be at the forefront of designing innovative products and devices. The main aim of this programme is to equip students with strong theoretical and practical skills in robotic and mechatronic to work at a professional level in related industries.

The programme will combine a broad range of multidisciplinary knowledge and skills in mechanical engineering, electrical and electronic engineering with intelligent embedded control to solve complex engineering problems. The first two years will provide a solid foundation while the final two years will provide specialisation in robotic and mechatronic. Students will take a mix of mandatory and optional modules plus a dissertation. The modules will cover concepts such as mathematics, computing, control, embedded systems, electronics and intelligent system design. Project modules are also introduced to enable students to have hands-on experience and apply the knowledge into building and designing robotic and mechatronic systems.

Accredited by:



Professor Syed Hasan

*Head of School,
School of Engineering and
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“ Artificial intelligence is the derivative of complex mathematical algorithms which has transformed the world due to immense computational power development at present however challenge remains how best to train

‘Tomorrow’s Industry Graduates’ who can embrace the challenge and play a pivotal role in the next digital revolution. M.Eng Robotic and Mechatronic Engineering programme is designed to bridge the skills gap required for next generation of engineers and technologists with the state-of-the-art facilities and expert academics at Heriot-Watt University Malaysia.

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Our Programme

MEng Robotic and Mechatronic Engineering

KPT/JPS (N/0713/6/0062) (MQA/PA18142) 03/32

Intake: September*

The programme aims to allow students to:

- Be equipped with a strong foundation in robotic and mechatronic engineering.
- Select appropriate techniques, resources, and modern engineering and IT tools to estimate, model, simulate and solve complex robotic and mechatronic engineering problems with an understanding of the limitations.
- Design a system, component or process for complex robotic and mechatronic engineering problems that meets specified needs within realistic constraints and limitations.
- Contribute effectively as an individual and as a member or leader in diverse teams in multi-disciplinary environments.
- Produce graduates with the technical, scientific, teamwork and leadership abilities associated with a professional engineer.

*Not available for Go Global programme

YEAR 1

- Mathematics for Engineers and Scientists 3
- Circuits and Analysis
- Digital Design and Programming
- Mechanics of Materials A
- Mathematics for Engineers and Scientists 4
- Dynamics
- Mechatronics Systems Group Project
- Introduction to Robotics

YEAR 2

- Design and Manufacture 2
- Signals and Systems
- Sustainable Development & Engineering Management
- Fluid Mechanics A
- Robotic and Mechatronic Design Project
- Thermodynamics A
- Time Frequency and Signal Analysis

YEAR 3

- Robotic and Mechatronic Group Project 1
- Professional and Industrial Studies
- Embedded Systems
- Linear Control
- Robotic and Mechatronic Group Project 2
- Image Processing
- Robotic Mechanical Systems

*Students will undertake a compulsory Internship/
Industrial Training at the end of Year 3.*

YEAR 4

- Project 1
- Industrial Automation and Instrumentation
- Robotics Systems Science
- Project 2
- Advanced Digital Electronic**
- Machine Vision**
- Embedded Software**

***Students take two (2) optional courses in Semester 2, Year 4.*

Skills Acquired

- Strong problem-solving and analytical thinking skills
- Proficiency in system design and programming
- Emerging technologies
- Interdisciplinary expertise
- Effective communication and strong teamwork capabilities

Career Opportunities

- Robotics Engineer
- Automation Engineer
- Mechatronics Engineer
- Biomedical Engineer
- Control Systems Engineer
- Process Engineer
- Systems Engineer
- Instrumentation Engineer
- Product Engineer



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