



Bachelor of Engineering in

# Automation and Robotics

Automation & Robotics is combination of the two most utilised technologies in todays manufacturing environments. Exploring the control of production equipment and the operation of cutting edge robotics.



Engineers with skills in this area are now in high demand in the manufacturing sector, with many large companies struggling to fill all of their required positions due to a shortage of graduates.

## Why study this course?

The Faculty of Engineering & Informatics at TUS Athlone has a long tradition of delivering engineering programmes that meet the ever-changing needs of modern industry. Our close relationship with industry ensures that our programmes have a practical and applied focus that will give you hands-on experience in the most relevant areas to today's enterprises.

The Bachelor of Engineering in Automation and Robotics programme provides students with a detailed understanding of the fundamental principles of automation, control and robotics found within modern manufacturing industries. Students develop their skills and knowledge working alongside experienced lecturers.

## Contact Us

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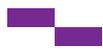
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The programme of study utilises our strong industrial links, whereby our students get to experience the industry that they will be working in through industrial visits and teaching and learning that is grounded in contemporary industrial best practices.

Over the three years of the programme, students will work with robotic systems and automation cells incorporating vision systems and explore the relationships between mechanical, electronic and software engineering as applied to modern 'smart' machines commonly used in the manufacturing industry,

Almost 50% of our student's time is spent in state-of-the-art laboratories developing practical engineering skills. The other 50% is spent on engineering theory and its application to real-world problems.

In year three of the programme, students undertake a four-month work placement from January to April. The placement carries 20 credits and must fulfil prescribed criteria to which the employer will agree in advance. Placements may be done in Ireland or abroad.

Students undertaking this programme of study will develop their problem-solving skills and reasoning techniques, develop an ability to appraise automation systems, identify areas of potential improvement, bring about corrective action and where applicable suggest and implement alternative solutions.

### What will I study?

#### Year 1:

- Communications for Manufacturing,
- Mathematics,
- Engineering Science,
- Mechanics,
- Engineering Materials,

- Engineering Workshop and Graphics,
- Electronics Technology,
- Processing of Engineering Materials.

#### Year 2:

- Mathematics,
- Sensor Systems,
- Mechanics,
- Computer Aided Design,
- Electronics Technology,
- Control and Power Technology,
- Introduction to Robotics,
- Automation Practice,
- Engineering Economics.

#### Year 3:

- Statistics and Lean Sigma,
- Mathematics,
- Robotics Programming and Vision,
- Control and Mechatronic Systems,
- Computer Networks,
- Industrial Placement,
- Project Evaluation and Management,
- Manufacturing Systems and Operations Management.

### Career Opportunities

As a graduate from this level 7 degree, you will have specialised knowledge of automation and robotics which can lead to direct employment in the manufacturing industry. Graduates will find employment in the manufacturing sector generally, across a broad range of industries, such as the medical device, electronics, agricultural and pharmaceutical sectors. Typical jobs include automation engineering, process development, fault-finding, as well as working in multi-disciplinary teams in a modern manufacturing environment.

### Entry requirements

- Grade O6 at ordinary level in five subjects in the Leaving Certificate examination. Two of these subjects must be mathematics and a language (English or Irish).
- QQI FET/FETAC Applicants.