

## COURSE DETAILS

### STAGE 1

This entails study of various subjects that focus on the Engineering/Design and Manufacturing aspects of Mechanical Engineering as well as a scientific insight to engineering. Students will also study Communications and Computer Applications for Engineering.

### STAGE 2

A further nine subjects are covered over two semesters. The course focuses on aspects of Manufacturing and Design and also on the Electro-Pneumatic areas of Engineering Technology. A year long project is undertaken.

## JOB OPPORTUNITIES

Graduates of the course will be able to work as manufacturing/process and design technicians. They will have knowledge of Draftsmanship/CAD, Manufacturing Processes and Control, Computer Applications and Programming.

## FURTHER STUDIES

Students who achieve Merit or Distinction level in their examinations at the end of Year 2 of the Course will be eligible for progression to the following internal Diploma Courses. Examination results as well as interview may form a part of selection procedure for any of these courses.

- National Diploma in Engineering (Tool Design)

- National Diploma in Engineering (Industrial Automation)

- National Diploma in Technology (Quality Management)

Furthermore it is expected that students achieving a Merit or Distinction in their Examinations at end of Year 2 will be suitably qualified for progression to most Mechanical Engineering Diploma Courses at other Institutes of Technology in Ireland.

## HOW TO APPLY

Applications can be made through the normal CAO Application procedure. Course Code: **SG303**

### **For More Information**

Contact Frank Carter, Head of Dept. Mechanical and Electronic Engineering  
**Tel:** (071) 9155225 or **email:** carter.frank@itsligo.ie

Information on this and other fulltime courses is available on the IT Sligo website at:  
[www.itsligo.ie/schools/eng](http://www.itsligo.ie/schools/eng)

## MECHANICAL ENGINEERING - THE ORIGIN OF THE FUTURE

The Institute of Technology Sligo has led the development of Quality education in Ireland. Ireland's manufacturing industry supplies OEM components and after market products, mainly to Europe. A substantial number of enterprises are Irish owned, with the remainder divided between European, Japanese and American parent companies. The industry is mainly export-focused, well established and fully geared to a tight cost structure. Ireland's Mechanical Engineers support this industry in a wide range of areas including expertise in manufacturing, precision and light engineering, electronics and rubber/plastic products, chemical and pharmaceutical, automotive, healthcare and consumer. Graduates from Institute of Technology Sligo contribute enormously to this important aspect of Ireland's economy. To play your part and continue this wonderful success story choose your career, be a Mechanical Engineer.

## WHAT IS MECHANICAL ENGINEERING

Mechanical engineers play a vital role in our advanced technological world. After qualification you could be enhancing the design of a Formula 1 racing car, developing robotic devices to perform precise surgery, designing a replacement for the internal combustion engine, or applying sophisticated state-of-the-art computer analysis to anything from a ring-pull can to a communications satellite. The work of a professional Mechanical Engineer can be extremely challenging and fulfilling, requiring innovation, design and analysis together with team working, leadership and IT skills. Mechanical Engineering places special emphasis on the interaction between mechanical engineering and electronic engineering including programming and robotics. Such knowledge can be applied, for example, to machine design, automation and automobiles where mechanical technology and intelligent electronic systems are increasingly a feature of the finished product. Knowledge of computer programming and control is also very important in product manufacturing and assembly.

## MECHANICAL ENGINEERING PROJECT

Mechanical Engineering Projects are geared towards enhancing the student's skills in a number of ways:

- Gathering Information
- Proper Planning
- Regular Meetings
- Professional Record Keeping
- Design and Construction

The experience gained in project work can be extremely valuable in helping students to define the kind of work they would like to do after graduation.

It also counts heavily in the eyes of industrial recruiters. Students use CAD and workshop skills to realise their own ideas, and to build working equipment. Previous projects have included, go karts, land yachts, an off-road buggy, as well as many automation projects for crushing drinks cans, and sorting engineering components.



## FACILITIES

The facilities provided at the Mechanical Engineering Department are among the most up to date in the country at any third level institute. The addition of new facilities for Engineering Science, Materials Science and Computer Aided Design equipment following the building of the Engineering Block and the new General Engineering Workshop provide an excellent platform for provision of the course. In particular the following technologies are of direct relevance and use for the subjects provided.

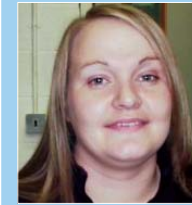
- Design and Analysis Technology  
Various computer laboratories with the following software: Pro Engineer, Solid Edge, AutoCAD, Alpha CAM and hardware and printing/plotting facilities.

- Manufacturing Technology  
State of the art CNC DMG milling machines, 3D rapid prototyping facilities and vacuum casting equipment, CNC Turning, and various laboratories with turning, milling, grinding, welding and fitting facilities. Festo / National Instruments machine automation and control development facilities.

- Measurement Technology  
Zeiss 850 Co-ordinate Measurement Machine, Renishaw Cyclone Scanner, Hommel Surface Analysis Machine.

- Materials Testing and Science Technology  
Instron Tension/Torsion High Frequency Fatigue Test Machines, Hounsfield 50KN Tension/Compression Low Frequency Fatigue Machine, Various Material Hardness Test Machines. Nikon Microscopes for microscopy and specimen mounting and inspection facilities with image analysis. Rheometrics V for Dynamic Thermal Mechanical Testing of Polymers.

## A GRADUATE'S VIEW



Sinead O'Flaherty

*Mechanical Technician*

*Galway-Mayo IT*

My Mechanical Engineering education started in 1993 with a two year National Certificate in Mechanical Engineering from the Institute of Technology Sligo. This was a practical and wide ranging course which confirmed to me my interest in Mechanical Engineering. Next I went on to study a National Diploma in Engineering in Tool Design. This course is well known and highly respected in Ireland, and straight after my exams I was able to get a job as a Tool Designer in G. Bruss GmbH in Sligo. In this job I was able to put into practice the subjects I liked in College like Technical Drawing, Mould Design and Material Properties.

I now work as a Mechanical Technician in the Galway-Mayo Institute of Technology where I study for my Degree part-time.

I would highly recommend the educational route I took of a National Certificate in Mechanical Engineering first and then the National Diploma in Engineering in Tool Design. The Certificate gives you an excellent understanding of Mechanical Engineering and points you in the direction you are good at. The National Diploma in Engineering in Tool Design I found extremely interesting, it combined 12 months of Industrial placement with modules of lectures. These Industrial placements and the practical experience I received on the course gave me a huge advantage getting a job in Industry.