FREQUENTLY ASKED QUESTIONS

What are the most helpful Leaving Certificate subjects for this course?
Mathematics, Physics, Applied Mathematics, Engineering, and Chemistry.

If I am not doing any of the recommended subjects in the Leaving Certificate, can I still apply for this course?
Yes, the core fundamentals are delivered in Year 1 and we assume that students have not taken these subjects.

What standard of Mathematics is required for the course?
Minimum C3 at Higher Level is required. The requirement for HC3 Mathematics may also be satisfied by HC3 in Applied Mathematics plus HD2 in Mathematics.

Some students who apply to CIT courses may not achieve the required entry standard in Mathematics through the Leaving Certificate. For such applicants, CIT offers a second chance to reach the required entry standard through a CIT Mathematics Exam. Please see www.cit.ie for more details.

What are the typical student numbers in first year?
First year course/class size: 20-30

Is there work placement in Ireland or abroad during the course?
Work placement (minimum of ten weeks) is mandatory in Year 3. Students have the option of placement in industry in Ireland or abroad or in a research laboratory in Ireland or with one of our partner institutions abroad through the Erasmus Scheme (Finland, France, Germany, Italy, Spain, Sweden, UK, etc.).

Where can I find more information for the modules for this course?
CIT has developed a website http://modules.cit.ie which gives full details of all modules for all courses. The website also has information on recommended textbooks, average weekly workload, assessments, and exams.

Is there any professional body accreditation of the course?
This course is fully accredited by Engineers Ireland such that the student may proceed to Chartered Engineer status. Engineers Ireland represents all engineering disciplines in Ireland and is a member of Féderation Européene d'Associations Nationales d'Ingenieurs (FEANI) through which Irish engineers are recognised in Europe. Engineers Ireland is a signatory to the Washington Accord through which Irish engineers are recognised in USA, Canada, Australia, New Zealand, Hong Kong, South Africa and UK.

MECHANICAL ENGINEERING

Mechanical Engineering involves the design, manufacture and operation of products that have motion or have internal moving parts. This ranges from the design and manufacture of high performance engines, machines with atomic level precision to aircraft, wind turbines, major power plants and process equipment to the maintenance of industrial, chemical, pharmaceutical and food processing plants.

Design and project work is a major feature of the course. In the final year each student undertakes an individual project involving research, design, prototype development and experimental verification utilising the latest computer aided engineering software.

CIT Institiúid Teicneolaíochta Chorcaí
Cork Institute of Technology

EUROPEAN UNION STRUCTURAL FUNDS

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ENQUIRIES TO

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CIT

BACHELOR OF ENGINEERING (HONOURS) IN MECHANICAL ENGINEERING

www.cit.ie

Course Code CR 108

EMPLOYMENT OPPORTUNITIES

Honours Degree graduates generally gain employment as mechanical, design, manufacturing, production, process, plant, project or maintenance engineers. They work in fields such as aerospace, automotive, computer and electronic manufacture, machine and plant design, power generation, engine design, contracting and consulting.

Recent graduates have been recruited to the following areas:

- →Product Design Engineering
- →Applied R&D
- →Medical equipment and instruments
- →Industrial, commercial, agricultural and other machinery design
- →Process Engineering
- →General or Corporate Management
- →Quality Control, Standards, Reliability Engineering

COURSE STRUCTURE

This Honours Bachelor of Engineering in Mechanical Engineering aims to produce broad-based engineers of high academic and practical standards to match the needs of Irish and international industry. An emphasis is placed on Engineering fundamentals throughout and this is supplemented with management subjects, individual and group multidisciplinary and cross disciplinary projects, practical and laboratory workshops which together with the broad nature of the discipline, provides an ideal entry to the wide variety and levels of responsibility in the workforce. Design is given a high weighting from the beginning of this programme.

In third year Business and Mechanical Engineering students are brought together through an action-learning project in which multi-disciplinary teams collaborate in conception, research, design, development, experimentation, validation, prototype production and proof of concept of an innovative product; estimate its commercial potential; and plan for its exploitation. These two “Innovative Product Development” modules have won the Engineers Ireland “Best in Class” Engineering Education 2011 Award.

A major individual project is undertaken by each student in the final year. In most cases, this project has been brought back from the work placement and has real industry relevance. The results of the project are presented to the public, industry and family at the annual CIT Engineering Exhibition in April each year.

FURTHER STUDIES

Honours graduates may be eligible to apply for a postgraduate degree at Masters and PhD level, either at CIT or at other Irish and overseas colleges.

A taught Masters in Engineering in Mechanical Engineering will be available from 2012-13.

GRADUATE PROFILE

LOUISE CONNOLLY
MECHANICAL ENGINEER

Louise graduated from CIT in 2004 with an honours degree in Mechanical Engineering and joined ESB International as a graduate engineer. Louise is currently a Consultant Engineer in ESBI and works on Irish and International power plant and gas pipeline projects.

The (National) Engineers Ireland Chartered Engineer of the Year Award 2011 being presented to Louise Connolly.

GRADUATE PROFILE

NEIL MURRAY
MECHANICAL ENGINEER

Neil graduated with an Honours Mechanical Engineering Degree from CIT. He completed a Masters in MIT in the area of Aeronautics/Astronautics. Neil then entered Imperial College London as a Research Associate to pursue a PhD in Aerospace Engineering. After completing his PhD, he joined the European Space Agency (near Amsterdam) as a Research Fellow in Aerothermodynamics. “In CIT, I received a strong foundation in Mathematics, Physics and Engineering. The course developed my problem solving expertise and this has allowed me to seamlessly develop into advanced areas of research in the space industry. The course promotes flexibility and actively facilitates the student in achieving career diversity.”

BEng (Honours) in **Mechanical Engineering**
CR 108

COURSE PROGRAMME

YEAR 1

Semester 1
Engineering Physics 1
Engineering Mechanics
CAD & Design 1
Engineering Maths 101
Creativity, Innovation, & Teamwork
Engineering Workshop Practice

Semester 2
Material Science & Engineering
CAD & Design 2
Introductory ThermoFluids
Engineering Maths 102
Engineering Chemistry
Elective (Choose 1)
Sustainable Energy
Engineering Computing 1
Free Choice Module

YEAR 2

Semester 3
Numerical Methods 1
Electrical Engineering I
Mechanical Materials (2D)
Thermodynamics (Laws & Cycles)
Engineering Mathematics 211
Elective (Choose 1)
Manufacturing Technology
Solar and Geothermal Energy
Free Choice Module

Semester 4
Numerical Methods 2
Electrical Engineering II
Mechanics of Machines
Engineering Mathematics 202
Mechanical Design
Fluid Mechanics

YEAR 3

Semester 5
Engineering Design
System Dynamics & Control Eng
Applied Thermodynamics
Mechanical Materials (3D)
IPD Laboratories 1
Elective (Choose 1)
Quality Engineering
Energy Power Systems
Free Choice Module
Instrumentation for Sensors

Semester 6
Statistics for Engineering 301
Mechanics of Machines
IPD Laboratories 2
Work Placement

YEAR 4

Semester 7
Engineering Management
Fluid Dynamics
Mathematics for Engineers 402
Project
Mechatronics System Design
Elective (Choose 1)
Advanced Materials & Processes
Manufacturing Systems
Energy Systems Modelling
Free Choice Module

Semester 8
Project 2
Control Eng. and Automation
Heat Transfer
Machine Dynamics
Elasticity and Stress Analysis