Career Opportunities

The Bachelor of Engineering (Honours) Degree is the academic qualification for full professional level entry to the civil/structural engineering profession. Graduates of the programme will have reached the educational standard required for Ordinary Membership of Engineers Ireland; with appropriate professional experience the graduate of this programme will be eligible to apply for the title of Chartered Engineer awarded by Engineers Ireland.**

The BEng(Hons) in Structural Engineering at CIT covers the full range of civil engineering topics but offers additional modules in the field of structural engineering. The Civil Engineering/Structural Engineering profession works very closely with public works and the construction industry. Opportunities vary in range and location and can be exclusively office based, site based or a mixture of both. There is a continuing regional, national and international requirement for engineers, particularly civil/structural engineers with a knowledge of construction. Graduates will be well equipped to meet these demands and will find employment opportunities in Consulting Engineering Offices and with Building and Civil Engineering contractors. They may also be employed by state and semistate bodies, including local authorities.

**** For further information on entry standards to the Civil Engineering profession please refer to the Engineers Ireland website at www.engineersireland.ie**

CAO CODE
CR109

B.Eng. (HONOURS) IN STRUCTURAL ENGINEERING

Minimum Entry Requirements

Leaving Certificate Minimum Requirements: Leaving Certificate in six subjects, including either English or Irish, and including at least two C3s at Higher Level, one of which must be Mathematics.

[The requirement for HC3 Mathematics may also be satisfied by HC3 in Applied Mathematics plus HD2 in Mathematics OR by a C3 grade in the Special Engineering Entrance Examination in Mathematics, which may be run by Cork Institute of Technology].

ENQUIRIES TO

Mr. Brian D O'Rourke, Mr. John J Murphy

Department of Civil, Structural & Environmental Engineering. CIT

Tel: +353 (0) 21 4326485, 4326741

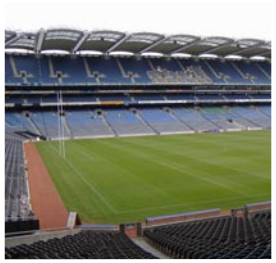
Email: brian.orourke@cit.ie, johnjustin.murphy@cit.ie

NDP
National Development Plan 2007 - 2013

CIT
Institiúid Teicneolaíochta Chorcaí
Cork Institute of Technology
Dámh na hInnealtóireachta
Faculty of Engineering

What is Structural Engineering?

Civil Engineering deals with one of the most visible signs of change and progress around us: the construction of new buildings, structures and general infrastructure. New roads, rail-links, bridges and airports are always needed. New buildings are required for the public and private sectors and older buildings are redeveloped. Massive utilities for water supply, waste treatment and power generation require the skills of Civil Engineers. Civil Engineers are required to plan, design, construct and maintain these facilities.



Specialist disciplines within Civil Engineering include Structural, Environmental, Highway and Transportation Engineering. **The BEng(Hons) in Structural Engineering at CIT covers the full range of civil engineering topics but offers additional modules in the field of structural engineering.**

Structural Engineering is the science and art of designing civil engineering facilities so that they can safely resist the forces to which they may be subjected. All structures from bridges to buildings, harbours to airports, must be able to meet these requirements. Structural Engineers aim to design these structures with safety, economy and elegance.

The Student Experience

Traditional format lectures are supplemented by tutorials, laboratory and field work. There is continuous assessment of reports, drawings and projects in addition to end of semester examinations. A Work Placement elective module is available in semester 7 of the programme – students complete this module over the summer period between year 3 and year 4.

Further Studies

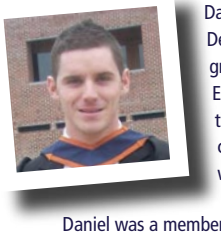
Master of Engineering (MEng)
Suitably qualified graduates of an honours degree programme in Civil, Structural or Environmental Engineering may undertake a research programme leading to the award of Master of Engineering. The Department also offers a taught MEng in Structural Engineering; the first cohort of postgraduate students registered for this new programme in 2010/11.

Doctor of Philosophy (PhD)
Suitably qualified graduates in Civil, Structural or Environmental Engineering may proceed to a research programme leading to a PhD Degree.

GRADUATE PROFILE: Maurice Mansfield

Maurice Mansfield graduated with a 1st Class Honours Degree in Structural Engineering in 2006. He briefly joined RPS as a consulting engineer before going to the University of Cambridge, where he obtained the research degree of Master of Philosophy in Engineering. His thesis entitled "*The Advanced Assessment Methods of Reinforced Concrete Bridges*" tackled the difficulties associated with the appraisal of existing structures. He returned to RPS in 2007 as a consultant with the bridges team. He has experience in the public, commercial and transport sectors. In recent years Maurice has elected to broaden his experience internationally and his education and professional experience have provided him with many international opportunities. Maurice is a member of Engineers Ireland and a graduate member of the Institution of Structural Engineers.

GRADUATE PROFILE: Daniel Goulding



Daniel Goulding graduated with a 1st Class Honours Degree in Structural Engineering in 2008. Following graduation, Daniel received funding from the Environmental Protection Agency to research in the area of renewable energy. Daniel is currently completing his PhD on a part-time basis while working for Bord Gáis.

Daniel was a member of the Sigerson Cup (Higher Education Senior Football championship) winning CIT team in 2009 and was also the recipient of an All-Star award that year. In 2010 he was a key member of the Cork Senior football team which won both the Senior Football National League and the All Ireland championship.

BACHELOR OF ENGINEERING IN IN STRUCTURAL ENGINEERING

Course Programme

The course is delivered over 4 full academic years, with 2 semesters per year. Semester 1 modules are completed between September and January and Semester 2 modules between February and May.

YEAR 1

Semester 1 *(Sept – Dec)*
Creativity, Innovation & Teamwork
Engineering Maths 101
Engineering Physics 1
Engineering Mechanics
Engineering Presentation
Engineering Chemistry

Semester 2 *(Feb – May)*
Engineering Maths 102
Engineering Mechanics 2
Material Science and Engineering
Linear Surveying and Levelling
Engineering Computing 1
Electives (Choose 1)
History of Structural Engineering
Communication with German 1
IT in Communications
Free Choice Module

YEAR 2

Semester 3 *(Sept – Dec)*
Concrete Technology
Structural Design 1
Solid Mechanics & Structures 1
Structural Engineering Construction 1
Engineering Mathematics 201
Electives (Choose 1)
Numerical Methods 1, Civil Engineering Practice, Engineering Computing 2, Free Choice Module

Semester 4 *(Feb – May)*
Communication
Fluid Mechanics
Land Surveying 2
Structural Design & Detailing 1
Solid Mechanics & Structures 2
Structural Engineering Construction 2

YEAR 3

Semester 5 *(Sept – Dec)*
Soil Mechanics and Geology
Engineer in Society
Water Engineering
Structural Design & Detailing 2
Engineering Mathematics 311
Electives (Choose 1)
Building for Sustainability, Structural Engineering Lab, Building Regulatory Engineering, Free Choice Module

Semester 6 *(Feb – May)*
Contract Management
Wastewater Engineering
Theory of Structures
Building Services and Fire Engineering
Structural Design 2
Statistics for Engineering 301

YEAR 4

Semester 7 *(Sept – Dec)*
Project – Research Phase
Geotechnical Engineering
Environmental & Energy Engineering
Structural Design Office
Advanced Structural Design
Electives (Choose 1)
Work Placement Elective, Prestressed Concrete, Harbour & Coastal Engineering, Systems Analysis, Highway Engineering, Free Choice Module

Semester 8 *(Feb – May)*
Project – Implementation Phase
Foundation Engineering
Project & Construction Management
Advanced Theory of Structures
Electives (Choose 1)
Prestressed Concrete, Harbour & Coastal Engineering, Systems Analysis, Highway Engineering

Please visit: http://modules.cit.ie for a searchable access to all of the CIT's approved courses and modules.