

Engineering at a glance

CAO Courses

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Level 8

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Postgraduate Programmes

- Postgraduate Diploma in Embedded Systems Engineering
- Postgraduate Diploma in Structural Engineering
- Postgraduate Diploma in Civil Engineering (Environment and Energy)
- Postgraduate Diploma in Science in Construction Project Management
- Master of Architecture
- MSc in Architectural Technical Design (Taught)
- MSc in Interior Architecture (Taught)
- MEng in Chemical and Biopharmaceutical Engineering (Taught)
- MEng in Mechanical Engineering (Taught)
- MEng in Embedded Systems Engineering (Taught)
- MEng in Structural Engineering (Taught)
- MEng in Civil Engineering (Environment & Energy) (Taught)
- MSc in Construction Project Management (Taught)
- MEng (by Research)
- PhD

Engineering (Common Entry) (Honours)

CR 500 Level 8 Award

► Progression to Postgraduate Programmes

Application: CAO

Award Title: Dependent on chosen specialisation.

- BEng (Honours) in Chemical and Biopharmaceutical Engineering
- BEng (Honours) in Mechanical Engineering
- BEng (Honours) in Structural Engineering
- BEng (Honours) in Biomedical Engineering

Duration: 1 Year (2 Semesters). On successful completion of the common entry year, students enter Year 2 of the chosen specialisation BEng (Honours) programme.

Places: 50

Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 500	390*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
4	2	D3 (H) or A2 (O)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
4	2	O1/H6	O6/H7

What is Engineering?

Engineering is the practical application of science and mathematics to solve problems, and it is everywhere in the world around you. Engineering technologies improve the way that we communicate, work, travel, stay healthy, and entertain ourselves.

Engineers are problem-solvers who want to make things work more efficiently, quickly, and less expensively. From computer chips and satellites to medical devices and renewable energy technologies, engineering makes our modern life possible.

Helpful Leaving Certificate Subjects

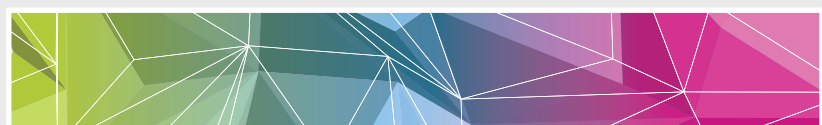
Mathematics, Physics, Chemistry, and English.

Potential Areas of Employment

- Chemical & Process Engineering
- Mechanical Engineering
- Civil, Structural & Environmental Engineering
- Biomedical Engineering

First Year at a Glance

- Engineering Mechanics: understanding the performance of engineering materials when subject to external loads and forces
- CAD & Design: computer-aided design similar to design and communications graphics in the Leaving Certificate
- Engineering Physics: introduction to geometric optics, atomic and nuclear physics, electromagnetism, and thermal physics
- Engineering Chemistry: fundamentals of atomic theory and chemical bonding; inorganic and physical chemistry
- Material Science and Engineering: understanding the nature and properties of engineering materials
- Engineering Mathematics: mathematical topics of direct relevance to professional engineering studies
- Creativity, Innovation and Teamwork - Semester 1: in addition to introducing the student to third level education and to communication studies, this module explores and discusses the various engineering professional disciplines which the student will choose to pursue in Year 2 of the BEng (Hons) programmes





First Year at a Glance *(continued)*

- Discipline Specific Elective Modules - Semester 2: choose 3 from 8 available: Structural Engineering (Mechanic 2 & Land Surveying); Mechanical Engineering (Mechanical Engineering Design, Thermofluids); Biomedical Engineering (Biomechanics, Applied Anatomy & Physiology); Chemical & Process Engineering (Industrial Biotech, Process Engineering Labs)

About the Course

The Common Engineering Honours Entry Scheme is a one year programme for students interested in engineering as a career, but who may be unsure of which discipline to follow.

The Scheme gives students the opportunity to see all four engineering disciplines first hand. Through the various modules on offer, interaction with the lecturers and site visits will assist the student to decide which discipline suits him/her best.

On successful completion of Year 1, students can enter the second year programme of their choice from any of the following Honours Engineering Degrees:

- CR 105 BEng (Honours) in Chemical and Biopharmaceutical Engineering
- CR 108 BEng (Honours) in Mechanical Engineering
- CR 109 BEng (Honours) in Structural Engineering
- CR 520 BEng (Honours) in Biomedical Engineering

Applicants are advised to visit each of the course sites for detailed descriptions at www.cit.ie

Lectures are supplemented by tutorials, laboratory and fieldwork. There is continuous assessment of reports and projects in addition to end of semester module examinations.

Career Opportunities

Graduate engineers from the Honours Engineering Degree Programmes can choose from a range of excellent career opportunities working in the private or public sector with opportunities available at both National and International Level. Many graduates ultimately progress to senior management positions in their organisations. These Honours Engineering Degree Programmes also provide a basis for suitably qualified graduates to pursue more advanced studies. Each of the four BEng (Hons) programmes from which the student chooses his/her specialisation is fully accredited by Engineers Ireland at the Bachelor (Honours) Level 8 educational standard.

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Question Time

Am I guaranteed my choice of study at the end of Year 1?

Yes. Successful completion of the Common Engineering Entry Year ensures guaranteed entry to Year 2 of BEng (Honours) programme of choice from the list given.

If I did not study Honours Mathematics in the Leaving Certificate will I struggle on the courses given that all course streams would normally require Honours Mathematics?

The Mathematics modules in Year 1 are specifically tailored to address the topics which underpin subsequent BEng (Honours) programme studies; this gives a very specific focus to student learning. While the Common Entry students undertake the same Mathematics modules as the Year 1 BEng (Honours) students, an additional module of Mathematics is undertaken in the inter-semester period in January each year.

This provides the Common Entry students with an additional learning opportunity in advance of the Semester 2 Mathematics module. Experience has shown that students who do not have the usual BEng (Honours) minimum H4 requirement do succeed in the Common Entry programme if they have also taken Leaving Certificate Physics and/or Chemistry and are committed to their Year 1 studies.

Students who do not have the H4 Maths requirement, or equivalent, and who do not have Leaving Certificate Physics or Leaving Certificate Chemistry may find the programme particularly challenging and additional work effort and application is required of these students if they are to succeed.

What is the advantage of choosing the Common Entry?

The Common Entry gives the student an opportunity to discover more about the various fields of engineering and to identify the engineering profession which is best suited to them. Entry to Year 2 of the BEng (Honours) programme of their choice, from the list identified, is guaranteed for Common Entry students who successfully complete the one year programme – there are no quotas or limits on the number of students who may enter Year 2 of a particular discipline.

The Common Entry offers those who may not have had the opportunity to take Higher Level Mathematics at Leaving Certificate, or those who may have opted out of Higher Level Mathematics during the Leaving Certificate programme, a second opportunity to attain the mathematical skills and competences required for BEng (Honours) Engineering Studies.

CIT's Academic Learning Centre provides free tuition in a number of disciplines (<http://alc.cit.ie>).

Structural Engineering (Honours)

CR 109 Level 8 Award

► Progression to Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Engineering (Honours) in Structural Engineering
Duration: 4 Years (8 Semesters)
Places: 20
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 109	420*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must score the necessary CAO points and meet the minimum entry requirements.

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
4	2	C3 (H) or (Note 1)	D3 (O/H)

Note 1: The requirement for C3 (H) Mathematics may also be satisfied by C3 (H) in Applied Mathematics plus D2 (H) in Mathematics.

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
4	2	H4 or (Note 1)	O6/H7

Note 1: The requirement for H4 Mathematics may also be satisfied by H4 in Applied Mathematics plus H6 in Mathematics.

NB: Please note the H4 grade in Mathematics can also be used to satisfy one of the H5 entry requirements.

What is 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. This course provides graduates with the skills to work as a Civil Engineer, however, an additional emphasis is placed on Structural Engineering studies thus giving the graduates enhanced skills in this area.

Helpful Leaving Certificate Subjects

Mathematics, Physics, and English.

Work Placement

There is a work placement of 8 weeks at the end of Year 3. This module is a very popular elective with students and employers; the module can create employment opportunities for the graduate when s/he completes the final year of study.

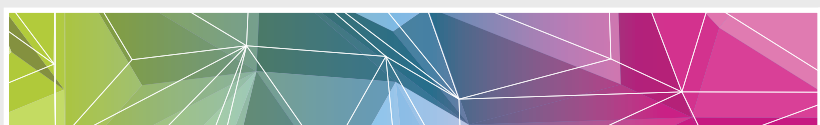
Potential Areas of Employment

- Consulting Civil & Structural Engineers

- Civil Engineering Contractors
- State/Semi-State Bodies and Utility Companies
- Local Authorities

First Year at a Glance

- Engineering Mechanics: understanding the performance of engineering materials when subject to external loads and forces
- CAD & Design: computer-aided design similar to design and communications graphics in the Leaving Certificate
- Engineering Physics: introduction to geometric optics, atomic and nuclear physics, electromagnetism, and thermal Physics
- Engineering Chemistry: fundamentals of atomic theory and chemical bonding; inorganic and physical chemistry
- Material Science and Engineering: understanding the nature and properties of engineering materials
- Engineering Mathematics: mathematical topics of direct relevance to professional engineering studies
- Land Surveying: theory and practical application of linear surveying, levelling angle measurement, and the measurement of buildings
- Communication Skills: assists students in the transition to third-level education; team projects, oral & written presentation skills
- Elective module





About the Course

The course is taught primarily through lectures, practicals, and tutorials. A significant emphasis is placed on project and experimental work with site visits and field trips making up an integral part of the coursework. There is a continuing regional, national and international requirement for structural engineers with a knowledge of construction.

Students may use appropriate work experience in the summer period between Year 3 and Year 4 to complete the module with assessment and credit allocated in Year 4. Third year students are offered guidance, advice and assistance with the necessary arrangements and approval for their work experience proposal in the second semester of Year 3.

Accreditation

The BEng (Honours) in Structural Engineering is fully accredited by Engineers Ireland for Chartered Engineer eligibility. This qualification meets the education standard for Chartered Engineer for graduates on or before 31/12/2012. For graduates after 1/1/2013 further learning is required to meet the education standard for Chartered Engineer. The taught MEng in Structural Engineering and the taught MEng in Civil Engineering (Environment and Energy), available in the Department as one year follow on courses, are fully accredited by Engineers Ireland as meeting the educational standard for Chartered Engineer from 1/1/2013. Engineers Ireland represents all engineering disciplines in Ireland and is a member of Federation Europeene 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.

Further Studies

For details, www.cit.ie/cse

Suitably qualified graduates of an Honours Degree programme in Civil, Structural or Environmental Engineering are eligible to apply for a postgraduate degree at CIT:

- > Master of Engineering in Structural Engineering (Taught)
- > Master of Engineering in Civil Engineering (Environment & Energy) (Taught)
- > Master of Engineering (by Research)

Suitably qualified graduates in Civil, Structural or Environmental Engineering may proceed to a research programme leading to a PhD.



Graduate Profile

Kieran McGrath
Graduate Internship

Career Opportunities

Graduates will be well equipped to find employment opportunities in Consulting Engineering Offices and with Building & Civil Engineering contractors. They may also be employed by state and semi-state bodies, including local authorities and utilities boards.

For further information in relation to the Civil and Structural Engineering profession please refer to the Engineers Ireland website at www.engineersireland.ie

For further information in relation to the Structural Engineering profession please refer to the Institution of Structural Engineers website at www.istructe.org/ The website for the Republic of Ireland branch of the Institution may be found at www.istructe.ie/

Contact Information

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Question Time

What is the difference between Structural Engineering and Civil Engineering?

Civil Engineering is the professional engineering discipline which deals with the design, construction and maintenance of the physical infrastructure of the built environment. This includes works such as buildings, roads, bridges, water and wastewater treatment and supply and harbour and coastal engineering works. In addition to the technical skills required for the above work a Civil Engineer will also have competencies in related fields such as project and asset management & health and safety.

Structural Engineering is a specialist discipline within Civil Engineering which deals with design, construction and maintenance of structures such as buildings, bridges, culverts, towers, masts and foundations. This course provides graduates with the skills to work as a Civil Engineer, however, an additional emphasis is placed on Structural Engineering studies thus giving the graduates enhanced skills in this area.

What level of drawing is required for this course?

Prerequisite drawing studies are not required. Drawing skills are addressed in the programme modules on the assumption that the students have no prior knowledge or skills in the area.

Kieran graduated with a BEng (Hons) in Structural Engineering in 2014. He is currently employed with ESB International as a Graduate Engineer in their Dublin office. Kieran is involved in a variety of projects, e.g. the structural assessment of the safe load capacities of existing bridges and road alignment surveys, and wind and hydro energy power generation infrastructure, where structural, environmental, energy and other engineering expertise is required.

"My studies in CIT not only gave me all the necessary analysis and design skills required to be a structural engineer, but also the necessary skills required to work in the related civil, environmental and energy engineering industries. This is a great strength of the course."

Civil Engineering

CR 051 Level 7 Award

- ▶ Progression to Level 8 Honours Degrees & Postgraduate Programmes
- ▲ Higher Certificate Option

Application: CAO
Award Title: Bachelor of Engineering in Civil Engineering
Duration: 3 Years (6 Semesters)
Places: 40
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 051	230*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Civil Engineering?

Civil Engineering deals with one of the most visible signs of change and progress around us: the construction of new buildings, structures and 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. Civil Engineers are required to plan, design, construct and maintain these facilities.

Helpful Leaving Certificate Subjects

Mathematics, English, Physics, Design and Communication Graphics, and Construction Studies.

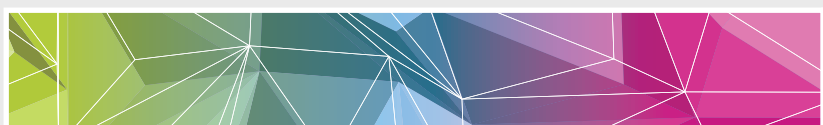
Potential Areas of Employment

Associate Engineer/Higher Technician Level in the following areas:

- Consulting Engineers
- Civil Engineering Contractors
- State/Semi-State Bodies and Utility Companies
- Local Authorities
- Self-Employed Consultant

First Year at a Glance

- **Mechanics:** understanding the performance of engineering materials when subject to external loads and forces
- **CAD:** computer-aided design similar to design and communications graphics in the Leaving Certificate
- **Construction:** domestic scale construction addressing the detailing of traditional and passive house techniques, external works and service provision
- **Health & Safety:** professional obligations under the Safety, Health and Welfare at Work Act and how to apply them to the workplace
- **Environmental Engineering:** an understanding of the environment in an engineering context; topics include water cycle, water quality, air and noise pollution, soil contamination
- **Land Surveying:** developing the ability to use specialist surveying equipment to complete land surveying and building measurement tasks
- **Material Science:** understanding the nature and properties of engineering materials
- **Mathematics**
- **Communication Skills**





About the Course

Practical sessions are carried out to provide as much “hands on” experience as possible. There is continuous assessment of reports, drawings and projects in addition to mid and end of module examinations. The Department of Civil, Structural & Environmental Engineering has active links with colleges in France, Germany, Finland and the Czech Republic and arranges student study exchanges with these colleges.

Accreditation

This course is fully accredited by Engineers Ireland. Engineers Ireland represents all engineering disciplines in Ireland and is a member of Federation Europeene d’Associations Nationales d’Ingenieurs (FEANI) through which Irish engineers are recognised in Europe. Engineers Ireland is a signatory to the Sydney and Dublin Accords through which Irish engineers are recognised in USA, Canada, Australia, New Zealand, Hong Kong, South Africa, and UK.

Further Studies

For details, see www.cit.ie/cse

Subject to availability of places, suitably qualified graduates may be considered for entry to Year 3 of

- > Bachelor of Engineering (Honours) in Structural Engineering

This is the most common progression route for graduates wishing to pursue a career in Civil/Structural Engineering. However, a civil engineering qualification provides a broad range of skills and graduates successfully seek opportunities for further studies at Honours Bachelor Degree level across a wide range of other cognate disciplines. For example, in recent years, some graduates of the programme have pursued further studies in CIT in

- > Year 3 of Bachelor of Engineering (Honours) in Sustainable Energy Engineering (CR510)
- > Year 4 of Bachelor of Science (Honours) in Construction Management (CR572)

Career Opportunities

An undergraduate education in Civil Engineering provides a very good platform not only for a career and/or further education in Civil Engineering but potentially for a much wider spectrum of employment opportunities. Graduates are likely to work in conjunction with architects, quantity surveyors, builders and also with personnel from other engineering disciplines.



Graduate Profile

Ian Casey
Engineering Technician

For further information in relation to the Civil Engineering profession please refer to the Engineers Ireland website at www.engineersireland.ie

Contact Information

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Question Time

What do Civil Engineers do?

Civil Engineering is the professional engineering discipline which deals with the design, construction and maintenance of the physical infrastructure of the built environment. This includes works such as buildings, roads, bridges, water treatment and supply, wastewater treatment, and harbour and coastal engineering works. In addition to the technical skills required for the above work a Civil Engineer will also have competencies in related fields such as project and asset management, Building Information Modelling, and health and safety.

Why study Civil Engineering?

Civil Engineers identify and analyse problems, and develop and implement solutions. In addition to technical skills Civil Engineers have competences in related fields of project management and health and safety. Civil Engineers work as individuals and in teams. The problem solving, solution implementation and management skills of Civil Engineers are applicable to a broad range of work environments and are valued by a wide range of employers.

What level of drawing is required for this course?

Prerequisite drawing studies are not required. Drawing skills are addressed in the programme modules on the assumption that the students have no prior knowledge or skills in the area.

Ian works as an Engineering Technician for Malachy Walsh and Partners, an engineering consultancy with offices in Cork, Limerick, Tralee, and London, who are involved in all aspects of civil, structural, environmental and mechanical engineering. Having completed his final year project on bridge engineering Ian has been assigned to work on various bridge schemes throughout Ireland. He believes that the range of engineering covered in the programme in CIT provides him with the opportunity to contribute to projects in other civil engineering disciplines, including coastal engineering work, structural design, road design works, and land surveys.

“The wide range of engineering topics covered in the course gives the graduate the opportunity to work in various disciplines within civil engineering and the construction sector.”

Construction Management (Honours)

CR 572 Level 8 Award

► Progression to Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Science (Honours) in Construction Management
Duration: 4 Years (8 Semesters)
Places: 20
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 572	240*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
4	2	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
4	2	O6/H7	O6/H7

What is Construction Management?

Construction Management is the overall planning, coordination, and control of a development from inception to completion. Construction Management is aimed at meeting a client's requirements in order to produce a functionally and financially viable project in the Engineering and Architectural environment.

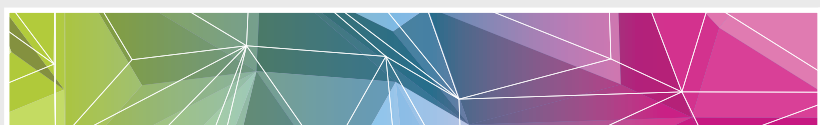
Construction Management involves the planning, design, production, adaptation, maintenance, restoration, conservation, financial and engineering management, evaluation and recycling of the built environment.

Helpful Leaving Certificate Subjects

Construction Studies, Engineering, Technology, & Science subjects.

First Year at a Glance

- Construction Industry and Procedures: Who does what in the development process i.e. types of firm (sole trader, partnerships, company); participants in the industry (clients, consultants, contractors); roles and responsibilities (construction manager, architect, quantity surveyor, building surveyor); sectors in the industry (architecture and design, planning and development, construction, health & safety, estates and facilities management); measurement of basic structures
- Construction Management Measurement & Procedures: how to measure what makes up a building i.e. interpret client requirements, and the responses of consultants and contractors; and outline the principles of measurement and complete measurement of basic construction works
- Construction Materials & Structures: testing materials for a building, i.e. identify basic structural forms; recognise equilibrium in structural forms; structural use and material properties of concrete, steel, glass, timber and plastics
- Organisation and Management: organising people to do things in the right place at the right time i.e. identify principles and practices of management in construction; describe the roles and duties of the construction manager at the pre-contract and post-contract stages of a construction project; determine the resources for construction projects





Potential Areas of Employment

- Project and Contracts Management
- Project Planning & Control
- Facilities Management
- Building Surveying
- Project Evaluation & Development
- Design Management & Administration
- Education - Teaching & Lecturing

About the Course

The course is taught primarily through lectures, practicals, and tutorials. Significant emphasis is placed on project and experimental work with site visits and field trips making up an integral part of the coursework. The student is required to submit a project evaluation and development report, and a dissertation.

Accreditation

The Construction Management Honours degree is recognised internationally because of its accreditation by the Chartered Institute of Building (CIOB) enabling graduates to find suitable employment, either in Ireland or abroad.

Further Studies

For details, see www.cit.ie

Suitably qualified graduates are eligible to apply for a postgraduate degree at CIT:

- > Postgraduate Diploma in Construction Project Management (Taught)
- > MSc in Construction Project Management (Taught)
- > MSc (by Research)

Career Opportunities

It is a challenging and rewarding career by providing the opportunity to be involved in the development of essential infrastructure in many parts of the world.

The Construction Manager is adaptable to many roles within the broader built environment. This may include: the overall management and development of construction and infrastructure projects, building control for Local and National Authorities, Education, Design, and Consultancy.

Contact Information

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Question Time

Why does a Client require a Construction Manager?

A Client requires a Construction Manager to plan, coordinate, supervise, and control complex and financially demanding developments. Most Clients would not have the necessary experience or expertise to carry out these functions, and rely on their Construction Management expert to guide them through the process.

Is a Construction Manager site based?

Not necessarily, the Construction Manager may be site-based or office based. The Construction Manager can perform a number of different roles within the Built Environment. These include working for Contracting organisations, Multidisciplinary Project Management Companies, Local and National Governmental Authorities, and Consultancies.

What are the prospects for employment in Construction Management?

Due to the variety of potential employment areas for Construction Management Graduates, the majority of recent graduates have successfully gained employment either at home or abroad.

Is the BSc (Honours) in Construction Management recognised abroad?

Yes, the Construction Management Honours degree is recognised internationally because of its accreditation by the Chartered Institute of Building (CIOB) enabling graduates to find suitable employment, either in Ireland or abroad.



Graduate Profile

Conor O'Keeffe
 Construction Manager

"Since graduating from CIT, I trained with a principal contractor under a graduate development scheme. The scheme provided technical, commercial and management experience which enabled me to utilise the knowledge I gained from the BSc Honours Degree in Construction Management. I have worked on a number of complex, inner city projects in a project management role. Achieving Chartered status (MCIQB) of the Chartered Institute of Building (MCIQB) has been my career highlight to date.

The honours degree provided me with the skills to develop a rewarding and challenging career in the construction industry. The importance of professionalism was highlighted at CIT and has given me the appetite to pursue a diverse career in construction management. I am currently based in London with a major construction organisation."

Quantity Surveying (Honours)

CR 570 Level 8 Award

► Progression to Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Science (Honours) in Quantity Surveying
Duration: 4 Years (8 Semesters)
Places: 20
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 570	285*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
4	2	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
4	2	O6/H7	O6/H7

What is Quantity Surveying?

A Quantity Surveyor manages all costs relating to building and civil engineering projects, from the initial calculations to the final figures. Quantity Surveyors seek to minimise the costs of a project and enhance value for money, while still achieving the required standards and quality. A quantity surveyor may work for either the client or the contractor, working in an office or on-site. They are involved in a project from the start, preparing estimates and costs of the work.

Helpful Leaving Certificate Subjects

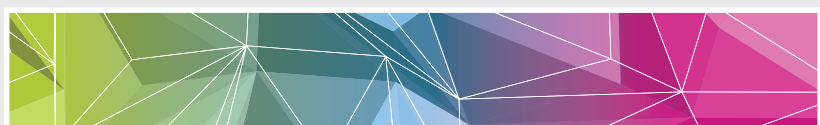
Construction Studies, and Design and Communication Graphics.

Potential Areas of Employment

- Professional Quantity Surveyor
- Contractor's Quantity Surveyor
- Estimator

First Year at a Glance

- Construction Industry and Quantity Surveying Procedures: who does what in the development process i.e. identify the types of firms, their roles and responsibilities in the construction industry; interpret client requirements, and the responses of consultants and contractors; outline the principles of measurement and complete measurement of basic construction works
- Quantity Surveying Organisation and Management: organising people to do things in the right place at the right time i.e. identify principles and practices of management in construction; describe the roles and duties of the construction manager at the pre-contact and post-contract stages of a construction project; determine the resources for construction projects
- Building and Environmental Science: how you light, heat and ventilate a building, i.e. principles of heat loss; conventional domestic heating systems; low carbon emitting domestic heating systems; domestic water supply and waste water
- Maths for Technology: maths that you would need for building





About the Course

A significant emphasis is placed on project and experimental work with site visits and field trips making up an integral part of the coursework. The course culminates with students submitting a bespoke construction project of their choosing demonstrating the application of technically appropriate, economically viable and environmentally sustainable solutions, from inception through to contract completion. Graduates, upon gaining employment, may commence their structured training leading to designation as a Chartered Surveyor.

Accreditation

The course is fully accredited by the Society of Chartered Surveyors Ireland (SCSI), The Royal Institution of Chartered Surveyors (RICS), the Chartered Institute of Civil Engineering Surveyors (CICES), and the Chartered Institute of Building (CIOB).

Further Studies

For details, see www.cit.ie

Suitably qualified graduates are eligible to apply for a postgraduate degree at CIT:

- > Postgraduate Diploma in Construction Project Management (Taught)
- > MSc in Construction Project Management (Taught)
- > MSc (by Research)

Career Opportunities

It is a challenging and rewarding career and affords the Quantity Surveyor an opportunity to travel to many parts of the world in his or her role as construction cost advisor/manager.

The Professional Quantity Surveyor is normally office based within a consultancy firm and their working hours will invariably involve visiting sites to attend site meetings and to monitor the progress and financial aspects of their construction projects.

The Contractor's Quantity Surveyor is normally site based and involves controlling construction costs for the Contractor/Builder as they occur on site. He/she also procures various subcontractors to carry out different work packages for the building contract.

Contact Information

James Kilduff
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E: james.kilduff@cit.ie

Question Time

What is the difference between a Professional QS and a Building QS?

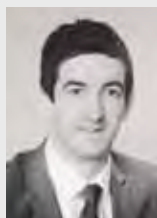
The Professional Quantity Surveyor represents the client in all aspects of construction from feasibility study to final construction costs and is normally practice based. The Contractors Quantity Surveyor works for the main contractor/builder to control construction costs as they occur on site and normally this Quantity Surveyor is site based.

How do I become Chartered?

Eligible graduates may apply to the Society of Chartered Surveyors Ireland (SCSI) for membership and undertake the Assessment of Professional Competence (APC). This is typically over two years and successful completion of this entitles them to full chartered membership of the SCSI.

Can a Quantity Surveyor work also as a Project Manager?

The project management role can be undertaken by any of the construction professions, provided they have the necessary management skills and capability.



Graduate Profile

Liam O'Shea
Quantity Surveyor

"In 2007, I graduated with a BSc (Honours) in Quantity Surveying. I am employed by Michael Barrett Partnership in Cork and I work on a diverse range of both public and private sector projects. My responsibilities include cost management of construction contracts at both pre and post contract stages.

CIT has provided me with an excellent understanding of the roles and responsibilities of Quantity Surveyors."

Construction (Common Entry)

CR 052 Level 7 Award

- ▶ Progression to Level 8 Honours Degrees & Postgraduate Programmes
- ▲ Higher Certificate Option

Application: CAO

Award Title: Depends on Specialisation. Choose from:

- BSc in Construction Management
- BSc in Quantity Surveying

Duration: 3 Years (6 Semesters)

Places: 40

Location: CIT Bishopstown Campus, Cork

CAO Points in 2015

Round 1

CR 052

220*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Construction?

Construction is a process of the built environment which involves many areas of employment. For modern, complex buildings it involves the commissioning, management, design, and assembly of huge amounts of raw materials and the use of considerable labour resources.

Helpful Leaving Certificate Subjects

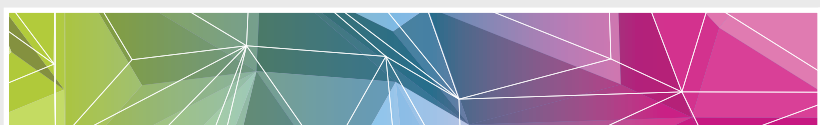
Construction Studies, and Design and Communication Graphics.

Potential Areas of Employment

- Site Management
- Quantity Surveying/Estimating
- Project Planning and Management
- Working with Developers, Designers and Contracting Organisations

First Year at a Glance

- Construction Technology: site visit, analysis and set up; introduction to foundations, walls, floors, insulation, radon protection; building regulations; and roofs
- Building and Environmental Science: how you light, heat and ventilate a building, i.e. principles of heat loss; conventional domestic heating systems; low carbon emitting domestic heating systems; domestic water supply and waste water
- Construction Graphics: how to communicate what is in a building by drawing and computer aided design, i.e., drawing equipment, sheet layout, lettering, lines, scales, dimensioning and representation of materials; geometrical setting out of arches; freehand drawing; location floor plans; reading and interpretation of a drawing; and AutoCAD
- Construction Materials & Structures: testing materials for a building; identify basic structural forms; recognise equilibrium in structural forms; structural use and material properties of concrete, steel, glass, timber and plastics
- Maths for Technology: maths that you would need for Building





About the Course

For the first two years of the programme students follow a common curriculum. Students who successfully complete Year 1 and Year 2 may choose either the Bachelor of Science in Construction Management or the Bachelor of Science in Quantity Surveying in Year 3.

The Construction Manager monitors the progress and quality of the work on site, supervising and coordinating subcontractors and specialist suppliers.

The objective of Quantity Surveying is to control cost, limit risk and add value to a project.

In addition to lectures, time is also given to practical work in surveying, drawing, project work and Computer Aided Design (CAD).

Accreditation

This course qualifies for exemptions from the Chartered Institute of Building.

Further Studies

For details, see www.cit.ie

Suitably qualified graduates may apply for entry to Year 4 (final) of:

- > Bachelor of Science (Honours) in Construction Management
- or
- > Bachelor of Science (Honours) in Quantity Surveying

Career Opportunities

The principal areas of employment are as surveyors or as construction managers with contracting organisations, government departments, semi-state bodies, and private practice companies.

Contact Information

Tim McNamara
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Question Time

What is the advantage of studying the Common Entry?
The student has the flexibility of the common two years of the course before having to decide on which specialist option they want to graduate in.

What level of drawing is required for this course?
Drawing is a useful skill but not essential. It helps students understand the technology that they will ultimately be managing or measuring.



Graduate Profile

Gerry O'Rourke
Project Manager

A previous Lord Pilkington Prize Gold Medallist, Gerry is currently working as a project manager for MACE Limited, a major Construction Management Company in the UK. "The course is very focused, ensuring that up to date methods are to the fore."

Gerry aims to rise to the top of his profession and having already achieved first in the world for his Construction Management Project, his future seems assured.



Graduate Profile

Nadine Scallan
Chartered Quantity Surveyor

"I am currently employed as a Senior Surveyor. Projects with which I have been involved to date include housing and apartment developments, hotels, an art gallery and a health centre. My role on these projects extends from preparing budgets, bills of quantities, interim valuations, project cost control and cost reviews to the preparation and agreement of final accounts. What I enjoy most about my job is the range and variety of projects."

Architecture (Honours)

CK 606 Level 8 Award

► Progression to Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Science (Honours) in Architecture
Duration: 4 Years (8 Semesters)
Places: 45
Location: Cork Centre for Architectural Education, Copley St., Cork

CAO Points in 2015	Round 1
CK 606	440*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English and Irish Grade
4	2	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English and Irish Grade
4	2	O6/H7	O6/H7

What is Architecture?

Architecture explores new ways of living, investigates new technologies and materials, and strives to ensure that new buildings, towns and landscapes are environmentally sustainable. Architecture combines art, science and technology in the design and construction of buildings and their surroundings within a socio-cultural context. Architects engage themselves in all aspects and stages of the architectural process from design, through planning, to construction and management. They are involved in projects of a diverse nature, including the design of domestic, retail, leisure, health, commercial, industrial and educational buildings, towns and urban landscapes.

Helpful Leaving Certificate Subjects

Art, Mathematics, English, Design and Communication Graphics, and a Science subject.

Where will I be studying?

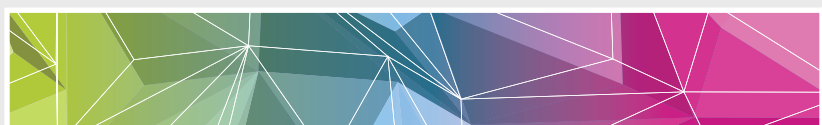
The majority of lectures, practicals, and studio work are held in the Cork Centre for Architectural Education in Copley Street, Cork city. Some instruction may take place in the CIT campus and the University College Cork (UCC) campus.

Potential Areas of Employment

- Private Practice
- Commercial
- Government Organisation
- Local Authority

First Year at a Glance

- Design Studio: basic design project and sketchbooks involving individual and group work; basic graphic techniques; sketching and painting; pencil drawing to scale; freehand drawing; model-making; and photography
- Construction, Materials and Structures: introduction to the basic principles which are pertinent to the issues of building construction and materials, structural design and analysis for architecture
- Applied Technology Studio: preparation of technical drawings and models; design of components for simple building types; options for construction and detailing of simple building types; modelling and testing the behaviour of simple structural members subjected to forces
- History and Theory of Architecture: examines the spatial, formal and structural components of key buildings from Ancient Greece through the Roman, Early Christian, Byzantine, Romanesque and Gothic periods to the Renaissance, reflecting on how these responded to the cultures and societies in which they were produced





About the Course

The BSc (Honours) Degree in Architecture is jointly offered by Cork Institute of Technology (CIT) and University College Cork (UCC).

This is a studio and project-led course integrating the three pillars of architectural education; design, technology and the humanities. The first year of study provides a foundation in design and the built environment, appropriate to both the discipline of architecture and associated design courses.

The following years of study will become progressively more architecturally focused whilst still allowing and encouraging experimentation and research into associated disciplines. Transferrable skills in communication, team working, computer aided design, and management are also developed.

This exciting and innovative Honours Degree programme has been developed with the support of the local architectural profession and in consultation with the Royal Institute of Architects of Ireland (RIAI).

Accreditation

Combined with the Master of Architecture, it is accredited by the RIAI. Together with two years' work experience in an architect's office and a Postgraduate Certificate in Architectural Professional Practice and Experience, this will allow you to register as a professional architect.

Registration provides for legal protection of the title of "Architect", as required by the Irish Building Control Act 2007.

Further Studies

For details, see <http://architecture.cit.ie>

Suitably qualified graduates will be eligible to enter a Master of Architecture programme, which together with a Certificate in Architectural Professional Practice and Practical Experience, will provide the overall education programme geared towards professional accreditation.



Career Opportunities

The study of Architecture provides opportunities to develop a wide range of transferrable skills. Graduates will have had rich experience of working in teams, working to deadlines, developing abilities in verbal and graphic communication and most importantly, skills in creativity, design and innovation - the essential ingredients of success in the contemporary economy.

Architecture itself provides exciting and widely varied career opportunities. Graduates may specialise in certain types of buildings, or concentrate on a particular area such as design, technology, architectural conservation or project management.

Graduates may work as part of a team in private practice, or in the architectural section of a commercial organisation or a Government Department or Local Authority.

Contact Information

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Gerry McCarthy
Cork Centre for Architectural Education
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E: gerrymccarthy@ucc.ie

Question Time

How is my time split between CIT and UCC?

This is a joint programme between CIT and UCC. It is housed in the Cork Centre for Architectural Education, Copley Street, Cork.

How much of my time is devoted to studio and project work?

50% is devoted to studio.

What kind of personal skills do I need?

You need to be a creative, innovative, logical, critical thinker... think outside the box!

What is the difference between Architectural Technology and Architecture?

Architectural Technology can be described as the technical design of the building while Architecture focuses on the creative aspects of spatial and aesthetic design in the total building.

Architectural Technology

(Honours)

CR 560 Level 8 Award

►► Progression to Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Science (Honours) in Architectural Technology
Duration: 4 Years (8 Semesters)
Places: 36 – 40 (between CR 560 and CR 090)
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 560	290*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
4	2	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
4	2	O6/H7	O6/H7

What is Architectural Technology?

The Architectural Technologist is involved with the technical issues of the architectural design process and plays the role of a technical designer. S/he is a team player who provides an expertise in technical design principles and knowledge in the development of the built environment. S/he is an organiser and coordinator of the diverse disciplines involved in the design and construction process.

Helpful Leaving Certificate Subjects

Art, Mathematics, English, Design and Communication Graphics, and a Science subject.

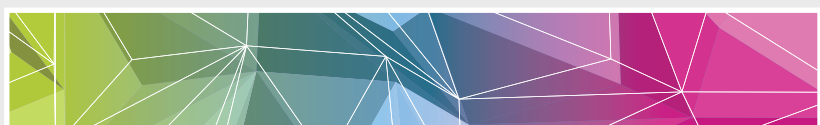
Potential Areas of Employment

- Private Practice
- Commercial
- Government Organisation
- Local Authority

First Year at a Glance

The core of the learning experience takes place in the studio through technical design projects and the application and integration of knowledge and skills explored in lecture modules. The focus of the Year 1 studio is the exploration of simple structures in wood, steel, concrete and masonry and construction detailing.

Lectures include Technology Materials and Structure (wood, steel, concrete, and masonry), Environmental Science and Services (sustainability, climate, resources), while skills developed include teamwork, problem solving, communication, drawing, and basic computer graphics.





About the Course

This is a studio-led course involving working drawings and other construction related projects, with a range of lectures and site visits designed to contribute to the student's comprehension and to the development of project work.

Students in Year 4 of the programme have the opportunity to pursue specific areas of research critical to the built environment and architectural practice. Students identify individual areas of interest in the architectural process and conduct intensive research leading to expertise. These emerging specialisms are sought by architectural practices and allied disciplines in architecture and construction and provide graduates with competitive skills.

Accreditation

This course is in the process of accreditation review by the Royal Institute of Architects in Ireland. This course is fully accredited by the Chartered Institute of Building.

Further Studies

For details, see <http://architecture.cit.ie>

Suitably qualified graduates are eligible to apply for a postgraduate degree at CIT.

- > MSc in Architectural Technical Design

Career Opportunities

A graduate of Architectural Technology is a critical member of the Design Team, as s/he has an excellent appreciation and knowledge of the other Design Team discipline roles, and is involved in the coordination and development of a project at all stages.

Graduates may specialise in certain building typologies or concentrate on a particular area such as technical design, technology, architectural conservation or project management. Graduates may work as part of a team in private practice, or in the architectural section of a commercial organisation or a Government Department or Local Authority.

Contact Information

Katherine Keane
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T: 021 433 5970
E: katherine.keane@cit.ie

Question Time

How much of my time is devoted to studio and project work?

Approximately 50% of time is devoted to studio and project work.

How helpful is it to have Design and Communication Graphics at Leaving Cert level?

Design and Communication Graphics would provide a solid foundation for this programme.

What is the difference between Architectural Technology and Architecture?

Architectural Technology can be described as the technical design of the building while Architecture focuses on the creative aspects of spatial and aesthetic design in the total building.



Graduate Profile

Michael Wixted
Architectural Technologist

After graduation, Michael began work with EML Architects and from the onset was working on multiple projects, completing construction drawings on residential apartments, submitting planning applications for school extensions and fire stations.

Michael is currently working on a €30 million R&D facility. "Without a doubt, the education I received at CIT has provided me with an amazing start in my career field and is the reason why I have been able to excel at what I do."

Architectural Technology

CR 090 Level 7 Award

► Progression to Level 8 Honours Degree & Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Science in Architectural Technology
Duration: 3 Years (6 Semesters)
Places: 36 – 40 (between CR 090 and CR 560)
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 090	240*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Architectural Technology?

The Architectural Technologist is involved with the technical issues of the architectural design process and plays the role of a technical designer. S/he is a team player who provides an expertise in technical design principles and knowledge in the development of the built environment. S/he is an organiser and coordinator of the diverse disciplines involved in the design and construction process.

Lectures include Technology Materials and Structure (wood, steel, concrete, and masonry), Environmental Science and Services (sustainability, climate, resources), while skills developed include teamwork, problem solving, communication, drawing, and basic computer graphics.

Helpful Leaving Certificate Subjects

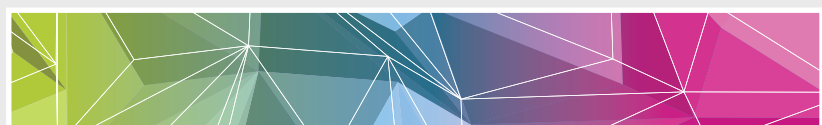
Art, Mathematics, English, Design and Communication Graphics, and a Science subject.

Potential Areas of Employment

- Private Practice
- Commercial
- Government Organisation
- Local Authority

First Year at a Glance

The core of the learning experience takes place in the studio through technical design projects and the application and integration of knowledge and skills explored in lecture modules. The focus of the Year 1 studio is the exploration of simple structures in wood, steel, concrete and masonry and construction detailing.





About the Course

This is a studio-led course involving working drawings and other construction related projects, with a range of lectures and site visits designed to contribute to the student's comprehension and to the development of project work. Over the duration of the course, the student develops skills related specifically to Architectural Technology as well as an appreciation of the role and requirements of other members of the building team.

A graduate of Architectural Technology is a critical member of the Design Team, as s/he has an excellent appreciation and knowledge of the other Design Team discipline roles, and is involved in the coordination and development of a project at all stages.

Accreditation

This course is in the process of accreditation review by The Royal Institute of Architects of Ireland. This course qualifies for exemptions from the Chartered Institute of Building.

Further Studies

For details, see <http://architecture.cit.ie>

Subject to availability of places, suitably qualified graduates are eligible to apply for entry to Year 4 (final) of > Bachelor of Science (Honours) in Architectural Technology

The course also maintains co-operative links with other construction-related courses within the Institute and in other colleges.

Career Opportunities

Graduates may specialise in certain building typologies or concentrate on a particular area such as technical design, technology, architectural conservation or project management.

Graduates may work as part of a team in private practice, or in the architectural section of a commercial organisation or a Government Department or Local Authority.

Contact Information

Katherine Keane
Department of Architecture
T: 021 433 5970
E: katherine.keane@cit.ie

Question Time

How much of my time is devoted to studio and project work?

Approximately 50% of time is devoted to studio and project work.

How helpful is it to have Design and Communication Graphics at Leaving Certificate level?

Design and Communication Graphics would provide a solid foundation for this programme.

What is the difference between Architectural Technology and Architecture?

Architectural Technology can be described as the technical design of the building while Architecture focuses on the creative aspects of spatial and aesthetic design in the total building.



Graduate Profile

Siobhán Keating
Architectural Technician/Associate

Siobhán is an Associate with O'Riordan Staehli Architects with particular expertise and responsibility for Fire & Safety on all projects.

"My Degree gave me a strong technical foundation with excellent drafting skills, detail design, and architectural appreciation. This is a challenging and interesting career.

I work very closely with all members of the Design Team – Clients, Quantity Surveyors, Engineers and Contractors, ensuring that the full coordination of all the building elements complements the building design."

Interior Architecture (Honours)

CR 565 Level 8 Award

► Progression to Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Science (Honours) in Interior Architecture
Duration: 4 Years (8 Semesters)
Places: 36 – 40 (between CR 565 and CR 053)
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 565	300*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
4	2	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
4	2	O6/H7	O6/H7

What is Interior Architecture?

Interior Architecture involves the design of interiors of buildings, their layout and space planning, fitting, technical and structural resolution, furnishing and decoration, and the preparation of all technical drawings and written documentation, necessary for the carrying out of the work.

The design work of the Interior Architect includes domestic, commercial, leisure, retail, educational and healthcare interior projects. Interior architectural design encompasses many types of interiors and utilises accompanying skills.

Helpful Leaving Certificate Subjects

Art, English, Mathematics, Design and Communication Graphics, and a Science subject.

Potential Areas of Employment

- Private Practice
- Commercial
- Government Organisation
- Local Authority

First Year at a Glance

The core of the learning experience takes place in the studio through architectural design projects and the application and integration of knowledge and skills explored in lecture modules.

The focus of the year 1 studio is simple spatial design and design of domestic scale interior space including the exploration of the processes used to create interior architecture.

Lectures include History (western architecture and design and key buildings), Technology Materials and Structure (wood, steel, concrete, and masonry), while skills developed include communication, graphic techniques, sketching, drawing, model making, problem solving, and teamwork.





About the Course

Interior Architecture is specific to a building's interior. It stands at the intersection of Architecture, design of the built environment, sustainability, and conservation. Unlike interior design, it is architecture within the confines of an existing building. As such, the course requires a level of technical competence to compare with that of the architect, as the responsibilities to the client and community are similar.

This course examines contemporary practice in interior architecture and teaches you about our architectural heritage, how buildings work, and how to create high quality spatial experiences.

Interior Architecture involves the design of interiors of buildings, their layout, fitting, furnishing and decoration and the preparation of all technical drawings and written documentation necessary for the carrying out of the work.

The design work of the Interior Architect includes domestic, commercial, leisure, retail, educational, and healthcare interior projects. Interior architectural design encompasses many types of interiors and utilises accompanying skills.

At CIT, Interior Architecture covers the spectrum of industry specialisms. It involves the initial design and plan for use to accommodate a changed purpose, or a significantly revised design for adaptive reuse of the building shell. It considers structural adaptation, sustainable redevelopment strategies, use of light, air movement, ventilation, horizontal/vertical circulation, and servicing. The practice of Interior Architecture responds to multiple user needs and a wider social responsibility.

The core of this programme is the design studio where skills in design and representation are integrated with mastery of content from other modules. The emphasis is the development of strong commercial design and analytical skills in a studio-based environment.

Modules in the award stage of the Honours Degree will include a comprehensive Design Project, as well as modules in the areas of Conservation; Sustainability; Research Methods; and Professional Practice.

Accreditation

This course is in the process of accreditation review by The Royal Institute of British Architects part 1 and the European Council of Interior Architects. This course is fully accredited by the Chartered Institute of Building.



Graduate Profile

Donal Sheehan
Architectural Designer

Further Studies

For details, see <http://architecture.cit.ie>

Suitably qualified graduates are eligible to apply for a postgraduate degree at CIT.

> MSc in Interior Architecture

Career Opportunities

This course qualifies graduates to work in architectural practice, interior design firms, and allied disciplines in the capacity of Interior Architect as a designer with a developed area of focus and expertise or in entry management positions.

The graduate will be proficient in master-planning, spatial design and the materiality of complex interior schemes that involve multiple floors and mixed uses. The graduate is also oriented to commercial architectural practice with a strong understanding of sustainable design. The graduate will be able to develop designs and their attendant working drawings, and will deal with contractors, suppliers, and local authorities. The graduate may also select self-employment after a suitable period of practical experience.

Contact Information

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Question Time

How much of your time is devoted to studio/project work?
Approximately 50% of time is devoted to studio and project work.

What is the difference between Interior Architecture and Architectural Technology?
Interior Architecture includes aesthetic design of all interior aspects of a building. Architectural Technology can be described as technical design.

Am I qualified as an Interior Designer?
This programme is designed to graduate candidates who will practice in Interior Architecture which includes interior design.

"I am currently working in New York City for Reveal Design Group. My responsibilities as an architectural designer involves working on all phases of design, including pre-design, schematic design, design development and construction documentation. I'm also directly involved in establishing the company's brand through the use of social media, and initiating the development of an internship programme.

I am a team member of the following design projects: the Andaz Resort in Costa Rica, a town house overlooking Central Park, the Westin Hotel in Times Square, the retrofit of a yacht on the Hudson, and the lighting design for Tadao Ando's Morimoto restaurant in Soho."

Interior Architecture

CR 053 Level 7 Award

► Progression to Level 8 Honours Degree & Postgraduate Programmes

Application: CAO

Award Title: Bachelor of Science in Interior Architecture

Duration: 3 Years (6 Semesters)

Places: 36 – 40 (between CR 053 and CR 565)

Location: CIT Bishopstown Campus, Cork

CAO Points in 2015

Round 1

CR 053

245*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Interior Architecture?

Interior Architecture involves the design of interiors of buildings, their layout and space planning, fitting, technical and structural resolution, furnishing and decoration, and the preparation of all technical drawings and written documentation necessary for the carrying out of the work.

The design work of the Interior Architect includes domestic, commercial, leisure, retail, educational and healthcare interior projects. Interior architectural design encompasses many types of interiors and utilises accompanying skills.

Helpful Leaving Certificate Subjects

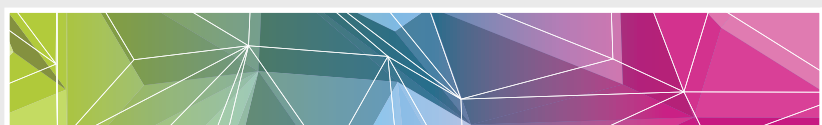
Art, Construction Studies, and Design and Communication Graphics.

Potential Areas of Employment

- Private Practice
- Commercial
- Government Organisation
- Local Authority

First Year at a Glance

- Interior Architecture Studio: introduction to simple spatial design; processes that are commonly used to organise and support study; research, analysis and studio design projects
- Graphics: introduces you to the core of communication skills appropriate for a career in interior architecture; construction industry drawing conventions and techniques in order to clearly communicate design proposals
- Technology Materials & Structures: introduction to building technology; site and foundations; construction systems in wood and in steel; components of frame, floor, roof, skin/enclosure openings, windows & doors and relevant building regulations
- Architectural History & Theory: explores the foundations of western architecture examining the spatial, formal and structural components of key buildings from Ancient Greece to the Renaissance





About the Course

This course qualifies graduates to work in architectural and interior design firms, in junior management positions, and prepares the individual to choose self-employment after a suitable period of practical experience.

This mainly studio based course is taught through formal lectures and tutorials. It has a significant amount of time allocated to studio and project work. There is a high technical input, supplementing the design drawing and presentation content.

This course examines contemporary practice in interior architecture and teaches you about our architectural heritage, how buildings work, and how to create high quality spatial experiences.

Accreditation

This course is in the process of accreditation review by The Royal Institute of British Architects part 1 and the European Council of Interior Architects. This course is fully accredited by the Chartered Institute of Building.

Further Studies

For details, see <http://architecture.cit.ie>

Subject to availability of places, suitably qualified graduates are eligible to apply for entry to Year 4 (final) of > Bachelor of Science (Honours) in Interior Architecture

Career Opportunities

This course qualifies graduates to work in architectural practice, interior design firms, and allied disciplines in the capacity of Interior Architect as a designer with a developed area of focus and expertise or in entry management positions.

The graduate will be proficient in master-planning, spatial design and the materiality of complex interior schemes that involve multiple floors and mixed uses. The graduate is also oriented to commercial architectural practice with a strong understanding of sustainable design. The graduate will be able to develop designs and their attendant working drawings, and will deal with contractors, suppliers, and local authorities. The graduate may also select self-employment after a suitable period of practical experience.

Contact Information

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Katherine Keane
Department of Architecture
T: 021 433 5970
E: katherine.keane@cit.ie

Question Time

How much of your time is devoted to studio/project work?
Approximately 50% of time is devoted to studio and project work.

What is the difference between Interior Architecture and Architectural Technology?
Interior Architecture includes aesthetic design of all interior aspects of a building including technical resolution. Architectural Technology can be described as technical design.

Am I qualified as an Interior Designer?
This programme is designed to graduate candidates who will practice in Interior Architecture which includes interior design.

What is the difference between Interior Architecture and Interior Design?
Interior Architecture is specific to a building's interior. It stands at the intersection of Architecture, design of the built environment, sustainability, and conservation. Unlike interior design, it is architecture within the confines of an existing building. As such, the course, requires a level of technical competence to compare with that of the architect, as the responsibilities to the client and community are similar.



Graduate Profile

Breeda O'Donoghue
Senior Designer

Breeda works with Houseworks Cork as a Senior Designer. Working exclusively with SieMatic Kitchens, Breeda began work with six months post-qualification training in Dublin, before joining the Cork showrooms as its only designer. Breeda has earned a wealth of experience in dealing with private and commercial projects alike. Her work ranges from presenting the SieMatic range in the showroom to preparing detailed design layouts for prospective clients.

Breeda was awarded Young Designer for Kitchens by the Bathrooms & Kitchens Industry Awards in the UK.

Building Services Engineering

CR 072 Level 7 Award

- ▶ Progression to Level 8 Honours Degrees & Postgraduate Programmes
- ▲ Higher Certificate Option

Application: CAO
Award Title: Bachelor of Engineering in Building Services Engineering
Duration: 3 Years (6 Semesters)
Places: 30
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 072	No Offers

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Building Services Engineering?

Building Services Engineering helps to deliver innovative and sustainable project solutions which bring building environments to life. It involves the design of the services that allow people to function within an enclosed structure such as an office block, a sports centre, a shopping centre, a hi-tech factory or a hospital. Building Services Engineers are involved in the optimisation and the interaction between building fabric performance and human comfort. This requires the design of systems that can maintain an internal environment with the correct air quality, lighting levels and heating/cooling levels. They are also central to provision of services e.g. hot/cold fluids, vacuum gases, lighting and ventilation, clean room, for an industrial process such as a pharmaceutical plant. All of these must be delivered in the most environmentally sustainable way.

First Year at a Glance

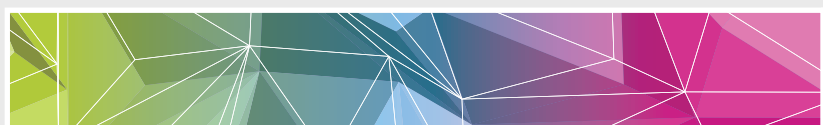
- The Science of Energy: the theory behind energy conversion processes
- Systems Design: the design and commissioning of building services such as heating, lighting, water supplies, security and communications
- Mathematics: developing mathematical tools which underlie industrial systems
- Communication Skills: engineers usually work in multidisciplinary teams so good communication skills are essential for successful project outcomes
- 3D CAD: CAD allows engineers to communicate their ideas graphically

Helpful Leaving Certificate Subjects

Mathematics, Physics, Engineering, and Chemistry.

Potential Areas of Employment

- Assistant Design Engineer
- Site based Engineer
- Commissioning of installed systems for handover to the client
- Sales Engineer
- CAD Technician
- Estimator for Mechanical and Electrical Services
- Building Services Coordinator





About the Course

The course encompasses topics such as thermal performance of buildings, human comfort, external climate, air conditioning and ventilation design, heating systems, hot and cold water, electrical power and distribution, and renewable energy systems. It covers the fundamentals of Building Services Design. Students need a firm grounding in the fundamentals of engineering science before they can undertake engineering design. First year is structured to deliver these fundamentals through a range of modules such as Thermofluids, Mechanics, and Electrical Principles. It is essential that engineers can communicate their ideas and designs effectively. These practical skills are developed in the Creativity, Innovation & Teamwork module, and the Computer Aided Design (CAD) module.

In Year 2 and Year 3 students focus on the core design elements of Building Services. This typically involves the design of heating systems, ventilation systems, water systems, electrical power systems, electrical distribution systems and lighting systems. Incorporation of renewable technologies into the design is essential. A major Building Services design project in Year 3 allows the students to demonstrate their design ability as well as their project management skills.

Further Studies

For details, see www.cit.ie

Degree holders who achieve the specified level of academic performance are eligible to apply for entry to the one year add-on

- > Bachelor of Engineering (Honours) in Building Energy Systems
or
- > Bachelor of Engineering (Honours) in Process Plant Technology
or Year 3 (carrying exemptions) of
- > Bachelor of Engineering (Honours) in Sustainable Energy Engineering

Career Opportunities

Graduates can join consulting engineering companies. They are employed as an assistant engineer and are mentored by a senior engineer as they further develop their skills in the design of building services systems from concept stage to construction stage. Graduates then progress to the lead design engineer either on mechanical or electrical systems. From there they advance to engineering manager, ultimately responsible for a design team.

Graduates also join Mechanical and Electrical Contracting companies. These companies are responsible for the installation, testing, and handover of building services systems. Graduates would typically start as an assistant to a senior site engineer. They learn the project management skills necessary to run a multi-million euro project including planning a project over a year, purchasing of main plant (boilers, pumps, air handling units, transformers etc.) and solving day to day engineering problems associated with installing large piping, ducting and electrical systems, liaising with architects, structural engineers and clients. These engineers can progress quickly to Project Managers responsible for all aspects of the project (financial and technical).

Other career paths include commissioning engineering equipment design, equipment sales, and CAD technicians.

Contact Information

Fergus Delaney
Department of Process, Energy and Transport Engineering
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E: fergus.delaney@cit.ie

Question Time

Has the course professional accreditation?

The course is accredited by Engineers Ireland for membership at Associate Engineer level.

Is this course about construction of buildings?

No, this course is about evaluating the performance of buildings and the design of the mechanical and electrical systems for buildings. There is some construction covered to enable students to evaluate the heat loss in winter and solar heat gain in summer associated with different types of wall, roofs, and glazing systems.

What type of projects do Building Services Engineers get involved in?

Systems need to be designed for new and existing houses, new and existing commercial buildings, biomedical research and production facilities, computer chip cleanrooms, hospitals, museums, art galleries, airports, pharmaceutical companies, digital centres, etc.

Is there much variety in the work?

Yes, projects typically last about a year. Each job has new challenges and new problems to solve.



Graduate Profile

John O'Sullivan
Building Services Engineer

"I graduated as a building services engineer and was employed by one of Ireland's largest multidiscipline engineering consultancy firms, Project Management. I work in the design of heating, ventilation & air-condition systems for buildings that were located in different parts of Europe.

My typical day is always varied - today could be a site survey of an existing ventilation system or Air Handling Unit, but tomorrow could be the calculation of a heating load inside a new pharmaceutical building. With technology so advanced today, we can design/change something today in Cork, for a project in Belgium that could be installed tomorrow."

Mechanical Engineering

(Honours)

CR 108 Level 8 Award

►► Progression to Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Engineering (Honours) in Mechanical Engineering
Duration: 4 Years (8 Semesters)
Places: 20
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 108	415*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must score the necessary CAO points and meet the minimum entry requirements.

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
4	2	C3 (H) or (Note 1)	D3 (O/H)

Note 1: The requirement for C3 (H) Mathematics may also be satisfied by C3 (H) in Applied Mathematics plus D2 (H) in Mathematics.

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
4	2	H4 or (Note 1)	O6/H7

Note 1: The requirement for H4 Mathematics may also be satisfied by H4 in Applied Mathematics plus H6 in Mathematics.

NB: Please note the H4 grade in Mathematics can also be used to satisfy one of the H5 entry requirements.

What is 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 construction, commissioning and maintenance of industrial, chemical, pharmaceutical and food processing plants.

Helpful Leaving Certificate Subjects

Mathematics, Physics, Applied Mathematics, Engineering, Design and Communication Graphics, and Chemistry.

Work Placement or Project

Formal work placement (minimum of ten weeks) is an integral element of the course and takes place in Year 3.

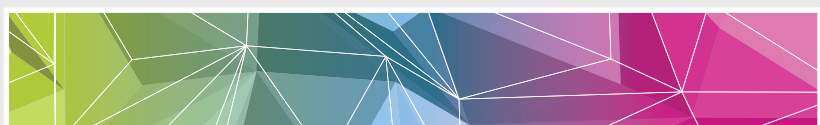
Potential Areas of Employment

- Mechanical Design
- Medical Devices
- Manufacturing and Precision Engineering
- Process industries including chemical and bio pharmaceutical

- Aerospace
- Project Engineering
- Offshore Oil and Gas
- Biomedical device design and manufacture

First Year at a Glance

- Engineering Physics: application of physics to engineering problems
- Properties of Materials: appropriate choice of materials to use for a particular engineering/device application
- Engineering Computing: programming for engineering applications using numerical methods
- Thermo/Fluid Mechanics: application of hot and cold fluid systems in engineering
- Mechanics: understanding the performance of engineering materials when subject to external loads and forces
- Engineering Chemistry: application of chemistry to engineering problems
- 3D CAD: computer-aided design (CAD) is similar to design and communication graphics in the Leaving Certificate exam
- Workshop: shaping and application of metal components
- Mathematics





About the Course

Design and project work is a major feature of the course. The Innovative Project Development modules in Year 3 enable students, working in teams, to bring a concept from the idea stage through to a finished prototype, considering the technical performance and commercial potential of their designs. In the final year, each student undertakes an individual project involving research, design, prototype development and experimental verification to meet a real need.

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

Students have the option of work placement in industry in Ireland or abroad or in a research laboratory in Ireland or with one of our partner institutions abroad (France, Germany, Italy, UK, etc.).

Accreditation

This BEng (Honours) course in Mechanical Engineering is fully accredited by Engineers Ireland for Chartered Engineer eligibility. This qualification meets the education standard for Chartered Engineer for graduates on or before 31/12/2012. For graduates after 1/1/2013 further learning is required to meet the education standard for Chartered Engineer. Engineers Ireland represents all engineering disciplines in Ireland and is a member of Federation Europeene 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.

Further Studies

For details, see www.cit.ie

Suitably qualified graduates are eligible to apply for a postgraduate degree at CIT.

- > MEng in Mechanical Engineering (Taught)
- > MEng (by Research)
- > PhD

Career Opportunities

Mechanical Engineering is a broad-based discipline offering career opportunities in design, manufacturing, technical support in a wide range of industries including oil/gas, power generation, plant construction, medical

devices, aerospace and automotive. Many mechanical engineers also progress into general management roles where their analytical skills are greatly valued.

Contact Information

Dr Lorraine Howard
Department of Mechanical, Biomedical and Manufacturing Engineering
T: 021 433 5423
E: lorraine.howard@cit.ie

Question Time

What level of design is involved with Mechanical Engineering?

Design is the main focus of the programme and utilises all the modern computer-aided design tools for 3D solid modelling, stress analysis, system simulation etc.

Can I progress to further studies?

Yes, many graduates have progressed to Masters (Taught) and to PhD research either in CIT or in other institutions in Ireland and abroad.

Are there opportunities to travel?

Undergraduates have the opportunity to travel as part of the Work Placement module in Year 3. Graduates from the programme are employed across the world. Though many graduates are based in Ireland their work involves travel to and communication with people and companies across the globe.

Are there any events I should attend to learn more about Mechanical Engineering?

CIT Bishopstown Campus hosts the Cork Mechanical, Manufacturing & Biomedical Engineering Annual Exhibition every April. Please see www.cit.ie for details.

Can you give me details about the two scholarships available for CR108?

The CIT-Janssen 4 year scholarship is worth €2,250 per year. Janssen is one of the world's leading research-based pharmaceutical organisations and is part of the Johnson & Johnson family of companies, the largest diversified healthcare group in the world.

The CIT-Abbott Vascular is worth approximately €3,000 per year. Abbott Vascular is one of the world's leading vascular care businesses, part of the Abbott Global Health Care. The scholarship is awarded to a registered student based on their performance in Year 1, for the following 3 years of the course.

Both Janssen and Abbott-Vascular's support for each scholarship is a major endorsement of the relevance of the course to the Mechanical Engineering industry.



Graduate Profile

Connor Barry
Mechanical Engineer

Connor graduated with an Honours Mechanical Engineering Degree and was recruited by Abbott Ireland onto their Professional Development Programme (PDP). This programme identifies the highest performing graduates with leadership potential and provides participants an opportunity to apply their skills in different areas and divisions throughout Abbott during four rotations over a two year period.

Connor is presently based in Columbus (Ohio). In April 2012, Connor received the award of Graduate Employee of the Year at the GradIreland Awards.

Mechanical Engineering

CR 071 Level 7 Award

- ▶ Progression to Level 8 Honours Degrees & Postgraduate Programmes
- ▲ Higher Certificate Option

Application: CAO
Award Title: Bachelor of Engineering in Mechanical Engineering
Duration: 3 Years (6 Semesters)
Places: 80
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 071	305*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Mechanical Engineering?

Mechanical Engineers play a crucial role in a wide range of industries, among them air, rail, sea and road. They are involved in high precision processes such as the design and manufacture of prosthetic devices and robotic mechanisms.

The physical scale of their work ranges from nanoscale motors and pumps through to high speed trains, wind turbines, and rocket/vehicles for space exploration. Mechanical Engineering enables students to learn how to systematically design essential machine elements and using three dimensional computer aided design modelling software, to display and test these models.

Helpful Leaving Certificate Subjects

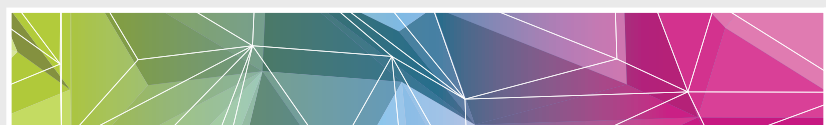
Mathematics, Physics, Applied Mathematics, Engineering, Design and Communication Graphics, and Chemistry.

Potential Areas of Employment

- Design Technician/Engineer
- Plant Inspector/Quality Manager
- Manufacturing Technician/Engineer
- Technical Sales Engineer

First Year at a Glance

- Mechatronics: interaction between mechanical and electronic components
- 3D CAD: computer-aided design (CAD) is similar to design and communication graphics in the Leaving Certificate exam
- Properties of Materials: appropriate choice of materials to use for a particular engineering/device application
- Mechanics: understanding the performance of engineering materials when subject to external loads and forces
- Automobile Engineering: analysing automobile engines
- Thermo/Fluid Mechanics: application of hot and cold fluid systems in engineering
- Workshop: shaping and application of metal components
- Mathematics





About the Course

This course has a strong emphasis on the practical side of mechanical engineering, exposing the student to many "hands on" modules in workshops and laboratories. Modules on the course are grouped into streams that run over the three years: Workshop Practice, Mechatronics, Mechanical Design and Computer Aided Engineering, Mechanics, Thermofluids, Materials, Management, Projects, Mathematics and Elective Options. Graduates are prepared to progress to further study or to take up challenging and varied careers in industry.

Recent Projects have taken place in the following areas:

- Engine Development and Design
- Sports Equipment & Training Aids
- 3D Modelling
- Automation Systems
- Sustainable Engineering

Further Studies

For details, see www.cit.ie

Suitably qualified graduates are eligible to apply for entry to the one year add-on

- > Bachelor of Engineering (Honours) in Process Plant Technology
or
- > Bachelor of Engineering (Honours) in Advanced Manufacturing Technology

A limited number of candidates may also be considered for entry to:

- Year 3 (which necessitates two further years of study)
- > Bachelor of Engineering (Honours) in Mechanical Engineering

Career Opportunities

Mechanical Engineering is a discipline of Engineering that applies the principles of physics and materials science for analysis, design, manufacturing, and maintenance of mechanical systems. It is the branch of engineering that involves the production and usage of heat and mechanical power for the design, production, and operation of machines and tools.

Employment opportunities are in the high-tech manufacturing industries at technician engineer level dealing with design, production, manufacturing, quality, estimating, planning and the operation and maintenance of high-tech automated manufacturing equipment. Other opportunities are in technical and sales support with contracting, consulting engineers, and servicing companies.

Contact Information

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Department of Mechanical, Biomedical and Manufacturing Engineering
T: 021 433 5424
E: bernard.ocallaghan@cit.ie

Question Time

What level of design is involved with Mechanical Engineering?

Design is a central theme of the programme and students use the latest 3D modeling software to develop and communicate their ideas.

Has the course professional accreditation?

This course in Mechanical Engineering is fully accredited by Engineers Ireland for Associate Engineer eligibility.

Is there much practical work on the course?

Students get hands-on practice in mechanical workshop, welding, computer-aided design, mechatronics, and also have the option of selecting elective modules in automotive engineering. The course is designed to give an overall balance between practical activities and theory.

Are there any events I should attend to learn more about Mechanical Engineering?

CIT Bishopstown Campus hosts the Cork Mechanical, Manufacturing & Biomedical Engineering Annual Exhibition every April, the largest exhibition of its kind in Ireland. Please see www.cit.ie for details.



Graduate Profile

Graham Canty
Mechanical Engineer

Graham graduated with a Level 7 Mechanical Engineering Degree and progressed to an Honours Degree in Mechanical Engineering. He now works for Bord Gáis as a Mechanical Engineer.

Graham managed to merge a very successful academic career with an inspired sporting career. He played Sigerson Football with CIT, U21 and Senior Championship with Cork and captained Ireland on a tour of Australia in the International Rules. He also captained Cork to a Senior All-Ireland Football Championship.

Biomedical Engineering (Honours)

CR 520 Level 8 Award

► Progression to Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Engineering (Honours) in Biomedical Engineering
Duration: 4 Years (8 Semesters)
Places: 20
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 520	435*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must score the necessary CAO points and meet the minimum entry requirements.

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
4	2	C3 (H) or (Note 1)	D3 (O/H)

Note 1: The requirement for C3 (H) Mathematics may also be satisfied by C3 (H) in Applied Mathematics plus D2 (H) in Mathematics.

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
4	2	H4 or (Note 1)	O6/H7

Note 1: The requirement for H4 Mathematics may also be satisfied by H4 in Applied Mathematics plus H6 in Mathematics.

NB: Please note the H4 grade in Mathematics can also be used to satisfy one of the H5 entry requirements.

What is Biomedical Engineering?

Biomedical Engineering combines engineering with an appreciation of the functioning of the human body, whether healthy, injured or diseased. The medical device sector in Ireland is very strong; there are 250 medical technology companies in Ireland, exporting €7.2b worth of product annually and employing 25,000 people (figures from the Irish Medical Device Association). Products include prosthetic devices to provide the disabled with tools to improve their quality of life, disposable plastic and wound care products, and precision implants including pacemakers, microelectronic devices, orthopaedic implants, diagnostics, contact lenses and stents. In the clinical context, biomedical engineers play a key role in designing, sourcing and maintaining equipment, facilities and services within hospitals.

Helpful Leaving Certificate Subjects

Mathematics, Physics, Biology, and Engineering.

Work Placement

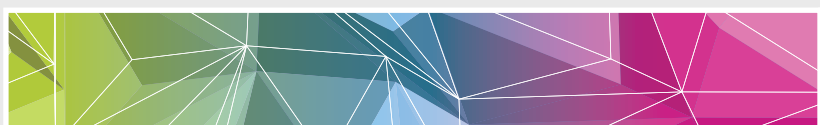
Formal work placement (minimum of ten weeks) is an integral element of the course and takes place in Year 3.

Potential Areas of Employment

- Biomedical Device Design and Manufacture
- Research & Development
- Engineering Support within Clinical Environments
- Regulated Industries e.g. Healthcare/Food

First Year at a Glance

- Engineering Physics: application of physics to engineering problems
- Properties of Materials: appropriate choice of materials to use for a particular engineering/device application
- Biomechanics: analysis of the joint/muscle forces on the body
- Engineering Chemistry: application of chemistry to engineering problems
- Thermo/Fluid Mechanics: application of hot and cold fluid systems in engineering
- CAD: computer-aided design similar to design and communication graphics in the Leaving Certificate exam
- Practical Manufacturing of Metal Components
- Anatomy
- Mathematics
- Biology





About the Course

The course covers topics from the design and development of artificial joints, to equipment for medical diagnosis and treatment, to the implanting of biomaterials or biomedical devices in the human body. Biomedical Engineers are therefore required at all stages from product design, to product manufacture, to technical support and interfacing with medical users in clinical environments. It uses engineering principles to understand and control biological systems and therefore also requires a working knowledge of physiology, anatomy, and biological science.

This course integrates the study of biological systems, biomedical devices and clinical engineering with traditional mechanical, electrical and manufacturing engineering. Projects are carried out in conjunction with industry, with medical practitioners, and with the Biomedical Engineering unit of Cork University Hospital.

Students have the option of work placement in industry in Ireland or abroad or in a research laboratory in Ireland or with one of our partner institutions abroad (France, Germany, Italy, UK, etc.).

Further Studies

For details, see www.cit.ie/bioeng and www.medic.ie

Suitably qualified graduates are eligible to progress to the taught Masters' programmes or to research at either Master's or PhD level. CIT has also set up the Medical Engineering Design and Innovation Centre (MEDIC) as a vehicle for Biomedical Device research.

Career Opportunities

Graduates can look forward to careers in the medical device industry, in the design and manufacture of medical devices, in research roles within industry or in academic research. Graduates can also enter the hospital or clinical environment to work as clinical engineers.

Contact Information

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W: www.cit.ie/bioeng

Question Time

What is the difference between Biomedical Science and Biomedical Engineering?

Biomedical Engineering combines engineering principles with an appreciation of the functioning of the human body, whether healthy, injured or diseased in order to design and manufacture products or provide technical support. Biomedical engineers can work in hospitals, in manufacturing plants, and in the research and development environment.

Biomedical scientists investigate into samples of tissue and body fluids in order to diagnose disease and monitor the treatment of patients therefore, it is largely laboratory based.

What does a Biomedical Engineer produce?

Solutions to problems! Design of devices, instrumentation or processes in a clinical, manufacturing or research environment.

Is there a scholarship available for the course?

Yes. The CIT-DePuy Synthes scholarship was launched in 2012 and is worth €2,250 per year for the successful candidate. DePuy Synthes (a Johnson & Johnson company) is a major multi-national employer in the Cork region, manufacturing artificial joints in Ringaskiddy in Cork. DePuy Synthes's support for the scholarship is a major endorsement of the relevance of the course to the biomedical industry.

Has the course professional accreditation?

This BEng (Honours) course in Biomedical Engineering is fully accredited by Engineers Ireland for Chartered Engineer eligibility. This qualification meets the education standard for Chartered Engineer for graduates on or before 31/12/2012.

For graduates after 1/1/2013 further learning is required to meet the education standard for Chartered Engineer. Engineers Ireland represents all engineering disciplines in Ireland and is a member of Federation Europeene 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.

Are there any events I should attend to learn more about Biomedical Engineering?

CIT Bishopstown Campus hosts the Cork Mechanical, Manufacturing & Biomedical Engineering Annual Exhibition in April, it is the largest exhibition of its kind in Ireland. Please see www.cit.ie for details.



Graduate Profile

Lucy O'Sullivan
Biomedical Engineer

"After graduation, I spent six months on a graduate internship with Teleflex (a worldwide biomedical company) in both Athlone and Malaysia, three months each in the Quality department and in R&D.

When I returned, I was employed by DePuy Synthes Ireland in its manufacturing plant in Ringaskiddy, Cork. I work on the quality aspects of products being transferred into the Cork plant from DePuy Synthes plants in other countries."

Biomedical Engineering

CR 075 Level 7 Award

- ▶ Progression to Level 8 Honours Degrees & Postgraduate Programmes
- ▲ Higher Certificate Option

Application: CAO
Award Title: Bachelor of Engineering in Biomedical Engineering
Duration: 3 Years (6 Semesters)
Places: 40
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 075	305*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Biomedical Engineering?

Biomedical Engineering combines engineering with an appreciation of the functioning of the human body, whether healthy, injured or diseased. In the clinical context, biomedical engineers play a key role in designing, sourcing and maintaining equipment, facilities and services within hospitals. Products include prosthetic devices to provide the disabled with tools to improve their quality of life, disposable plastic and wound care products, and precision metal implants including pacemakers, microelectronic devices, orthopaedic implants, diagnostics, contact lenses and stents.

Helpful Leaving Certificate Subjects

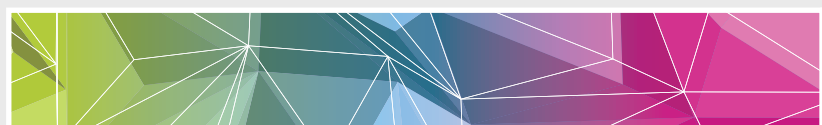
Mathematics, Physics, Biology, and Engineering.

Potential Areas of Employment

- Biomedical Device Design and Manufacturing
- Clinical Environment
- Research & Development
- Engineering Support within Clinical Environments
- Regulated Industries e.g. Healthcare/Food

First Year at a Glance

- Material Science: understanding the nature and properties of engineering materials
- Mechanics: understanding the performance of engineering materials when subject to external loads and forces
- Thermo/Fluid Mechanics: application of hot and cold fluid systems in engineering
- CAD: computer-aided design similar to design and communication graphics in the Leaving Certificate exam
- Instrumentation: understanding the operation and behaviour of medical equipment and devices
- Anatomy
- Mathematics
- Biology





About the Course

The course is delivered through formal lectures, tutorials, practical and project work. There are a number of dedicated Biomedical Engineering laboratories containing leading edge technology. These facilitate teaching and research both at undergraduate and postgraduate level and include:

- Gait Analysis Lab
- Biomaterial Lab
- Hurley Helmet Testing Rig
- Instron Dynamic Testing Machine
- Non-Contact 3D Light Scanner
- Rapid Prototyping Machine

Projects are carried out in conjunction with industry, with medical practitioners and with the Biomedical Engineering Unit of Cork University Hospital.

Further Studies

For details, see www.cit.ie/bioeng

Subject to availability of places, suitably qualified graduates may apply to Year 3 of

> Bachelor of Engineering (Honours) in Biomedical Engineering

or the one year add-on

> Bachelor of Engineering (Honours) in Advanced Manufacturing Technology

Career Opportunities

Graduates will be qualified to work as biomedical engineering technologists within the healthcare, medical device industries, in research and development facilities, and also in clinical/hospital environments.

Contact Information

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W: www.cit.ie/bioeng

Question Time

What does a Biomedical Engineer produce?

Medical devices, instrumentation, or processes in a clinical or manufacturing environment.

What is the difference between Biomedical Science and Biomedical Engineering?

Biomedical Engineering combines engineering principles with an appreciation of the functioning of the human body, whether healthy, injured or diseased in order to design and manufacture products or provide technical support. Biomedical engineers can work in hospitals, in manufacturing plants and in research and development environment.

Biomedical scientists investigate into samples of tissue and body fluids in order to diagnose disease and monitor the treatment of patients. Therefore, it is largely laboratory based.

Has the course professional accreditation?

This course in Biomedical Engineering is fully accredited by Engineers Ireland for Associate Engineer eligibility.

Are there any events I should attend to learn more about Biomedical Engineering?

CIT Bishopstown Campus hosts the Cork Mechanical, Manufacturing & Biomedical Engineering Annual Exhibition in April, it is the largest exhibition of its kind in Ireland. Please see www.cit.ie for details.



Graduate Profile

Denise Cronnelly
Quality Engineer

Denise undertook a MEng in Biomedical Engineering before commencing employment as a Quality Engineer with Boston Scientific in Clonmel where it manufactures implantable pacemakers and defibrillators.

Denise's role as a Quality Engineer is varied and encompasses elements such as process optimisation, equipment validation, and aspects of regulatory compliance.

Electronic Engineering (Honours)

CR 590 Level 8 Award

► Progression to Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Engineering (Honours) in Electronic Engineering
Duration: 4 Years (8 Semesters)
Places: 40 (between CR 590 and CR 061)
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 590	300*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
4	2	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
4	2	O6/H7	O6/H7

What is Electronic Engineering?

Small, lightweight, portable devices like Smartphones and tablets combine wireless technology with processing power to provide internet, communications and leisure functionality while on the move. They are now driving how we live, work and play. Combining low power consumption with microchip design, telecommunication and control circuitry (hardware) and the operating system software, they are the ultimate electronic system. CIT's CR 590 programme is designed to equip engineers to work at this level.

Helpful Leaving Certificate Subjects

Engineering and Physics.

Potential Areas of Employment

- Test/Development/Design in Electronic Systems
- Telecomms Network Software/Hardware Design/Support
- IT Software Development
- R&D in Product Development

First Year at a Glance

- Year 1 is a good mix of practice and theory so on average that's about 12 hours in the class and 12 hours in the laboratory
- Theory: about how basic electronic circuits work, e.g. resistors, transistors, digital gates
- Software: how to write software
- Mathematics: this is required as everything in engineering has a formula which tells you how it works
- Laboratory work: you will build and test circuits. You will learn how to present your work, written and verbally





About the Course

Electronic systems are used for the collection, processing and transmission of information. From the most sophisticated machines in industry, to cars, to household appliances and to personal items, all have the same thing in common: they are "intelligent". On a printed circuit board (PCB), surrounded by analogue and digital circuitry, there is a microprocessor, or maybe several, which has a clock (heartbeat). On every cycle the microprocessor executes an instruction from whatever programming it is running (software) – this ability is what makes the system intelligent. Intelligence, control and communications, theory and practice form the core material of this course.

Further Studies

For details, see <http://e-eng.cit.ie>

Suitably qualified graduates are eligible to apply for a postgraduate degree at CIT:

- > MEng in Embedded Systems Engineering (Taught)
- > MEng (by Research)
- > PhD

Career Opportunities

In its report of January 2012, the Irish Government Expert Group on Future Skills Needs (EGRSN) states that the country will increasingly depend in all areas on Information Communications Technology (ICT) graduates. Nationally, 75,000 people are employed in 8,000 ICT companies. The CIT Electronic Engineer skillset creates access to many ICT sector job opportunities. Technical know-how, ability to problem solve, and to learn independently makes the graduate highly versatile and highly marketable.

For a snapshot of ICT in the greater Cork area, visit www.ceia.ie

Contact Information

Michael Murray
Department of Electrical & Electronic Engineering
T: 021 433 5463
E: michael.murray@cit.ie

Question Time

What level of Mathematics is required?

Grade 06/H7 in the Leaving Certificate exam is the minimum requirement, however, a higher grade is recommended.

Can you give me examples of the type of work I will be able to do?

Test, develop, design electronic circuits or microchips (hardware), write programmes (software) for products, computer packages, games, mobile phone networks, provide technical support for products.

Will I be working in a factory?

The majority of electronic engineers work in nice offices! A huge amount of work is actually done on computers. But if it's hardware then it will need building and testing in a lab. Mostly, the product will then be outsourced to other parts of the world for manufacture.



Graduate Profile

Ciara Murphy
Transmission Engineer

"After graduation, I worked with Surecom Network Solutions in Dublin. My projects include planning radio links in the UK and planning sites in Australia to support their telecoms network.

The work involves equipment specification, installation and operation. On other projects, I have worked in conjunction with 3 and Vodafone.

It is very interesting and I have already gained so much experience. My Degree was a great foundation in many ways."

Electronic Engineering

CR 061 Level 7 Award

- ▶ Progression to Level 8 Honours Degree & Postgraduate Programmes
- ▲ Higher Certificate Option

Application: CAO
Award Title: Bachelor of Engineering in Electronic Engineering
Duration: 3 Years (6 Semesters)
Places: 40 (between CR 061 and CR 590)
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 061	240*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Electronic Engineering?

Small, lightweight, portable devices like Smartphones and tablets combine wireless technology with processing power to provide internet, communications and leisure functionality while on the move. They are now driving how we live, work and play. Combining low power consumption with microchip design, telecommunication and control circuitry (hardware) and the operating system software, they are the ultimate electronic system. CIT's CR 061 course is designed to equip technologists to work at this level.

Helpful Leaving Certificate Subjects

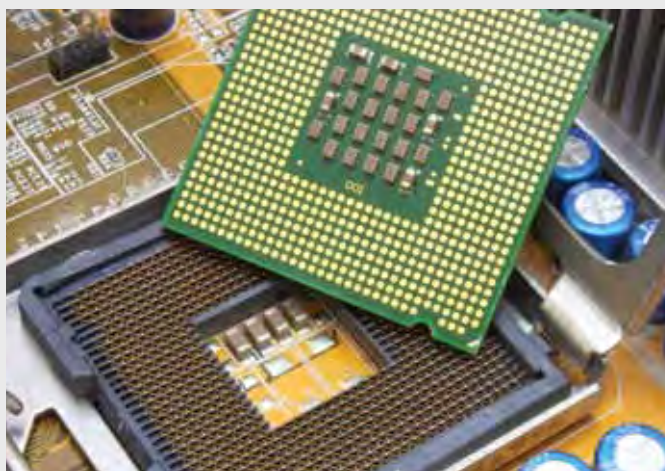
Engineering and Physics.

Potential Areas of Employment

- Test/Development/Design in Electronic Systems
- Telecomms Network Software/Hardware Design/Support
- IT Software Development
- R&D in Product Development

First Year at a Glance

- Year 1 is a good mix of practice and theory so on average that's about 12 hours in the class and 12 hours in the laboratory
- Theory: about how basic electronic circuits work, e.g. resistors, transistors, digital gates
- Software: how to write software
- Mathematics: this is required as everything in engineering has a formula which tells you how it works
- Laboratory work: you will build and test circuits. You will learn how to present your work, written and verbally





About the Course

Electronic engineering is used for the collection, processing, and transmission of information. From the most sophisticated machines in industry, to cars, to household appliances, to personal items, all have the same thing in common: they are "intelligent". On a printed circuit board (PCB), surrounded by analogue and digital circuitry, there is a microprocessor, or maybe several, which has a clock (heartbeat). On every cycle the microprocessor executes an instruction from whatever programming it is running (software) – this ability is what makes the system intelligent. Intelligence, control and communications, theory and practice form the core material of this course.

Further Studies

For details, see <http://e-eng.cit.ie>

Suitably qualified graduates are eligible to apply for entry to Year 4 (final) of
> Bachelor of Engineering (Honours) in Electronic Engineering

Career Opportunities

In its report of January 2012, the Irish Government Expert Group on Future Skills Needs (EGRSN) states that the country will increasingly depend on Information Communications Technology (ICT) graduates in all areas. Nationally, 75,000 people are employed in 8,000 ICT companies. The CIT Level 7 Electronic Engineering skillset creates access to many ICT sector job opportunities.

Technical know-how and practical ability makes the graduate highly versatile and highly marketable.

For a snapshot of ICT in the greater Cork area, visit www.ceia.ie

Contact Information

Michael Murray
Department of Electrical & Electronic Engineering
T: 021 433 5463
E: michael.murray@cit.ie

Question Time

What is the difference between Electronic Engineering and Electrical Engineering?

Electronic Engineering is small scale, low voltage, component level, microchips and programming.

Electrical Engineering is high power, mains electricity, generation, power lines, transformers, motor/generators and automation.

Has the course professional accreditation?

Yes. The Level 7 in Electronic Engineering is accredited by Engineers Ireland for Associate Membership.

What level of Mathematics is required?

Grade 06/H7 in the Leaving Certificate exam is the minimum requirement, however, a higher grade is recommended.



Graduate Profile

Seán O'Sullivan
Product Support

"I graduated in 2011 with a Level 7 Degree and I am currently working in the iOS department of Apple Inc. My job is providing technical support for iPods, iPads and iPhones. It is a great place to work and the salary is excellent.

I am working very much in the area that I studied and it has equipped me very well. I can thoroughly recommend the BEng in Electronic Engineering."

Electrical Engineering (Honours)

CR 580 Level 8 Award

►► Progression to Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Engineering (Honours) in Electrical Engineering
Duration: 4 Years (8 Semesters)
Places: 40 (between CR 580 and CR 062)
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 580	315*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
4	2	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
4	2	O6/H7	O6/H7

What is Electrical Engineering?

Providing electrical power in a modern economy is about generation, distribution and usage in a safe, economic and sustainable way. Fossil fuel energy now combines with solar, wind and tidal energy to create "embedded" generation which needs a "smart grid" to automatically switch users and suppliers in and out while maintaining the quality of the supply. CIT's Electrical Engineering course is designed to equip engineers for this environment.



Helpful Leaving Certificate Subjects

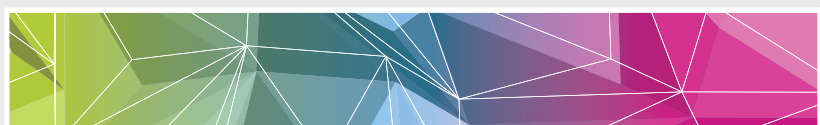
Engineering and Physics.

Potential Areas of Employment

- Energy Generation/Transmission
- Building Supply/Installation/Services/Maintenance
- Consultancy/Contract Management
- Process/Automation Industry

First Year at a Glance

- Year 1 is a good mix of practice and theory so on average that's about 12 hours in the class and 12 hours in the laboratory
- Theory: how electricity is generated, transmitted and distributed and there are also classes in electronic circuits, writing programmes and CAD
- Mathematics: this is required as everything in engineering has a formula which tells you how it works
- Laboratory work: you will build, test and do measurements and also you will learn how to present your work, written and verbally





About the Course

The general fields of study are Renewable Generation, Transmission and Distribution, Plant Automation, Motor Control, Power Systems Planning, and Industrial Management and Services. The syllabus is designed to prepare graduates for work in electrical power and automation systems. The high academic standard of the course is complemented by a strong emphasis on applications and project work. State-of-the-art lab equipment and software prepares graduates for the work environment. Class work is supplemented by field trips to major employers within the greater locality.

Further Studies

For details, see <http://e-eng.cit.ie>

Suitably qualified graduates are eligible to apply for a postgraduate degree at CIT.

- > MEng (by Research)
- > PhD

Career Opportunities

Graduates will have acquired both the knowledge and the competence to work as engineers in generation and distribution of electrical energy, in the control of automated production systems, with particular emphasis on power drives and aspects of robotic control, in the design and maintenance of Combined Heat and Power (CHP) units and in embedded generation systems. Also design/application/maintenance of renewable sources of electrical energy such as wind energy and fuel cells. Graduates can expect to find employment in the energy generation, transmission and grid control section of the market, directly or through consultancy, plus in the area of automation as utilised in modern processes.

Contact Information

Dr Joe Connell
Department of Electrical & Electronic Engineering
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E: joe.connell@cit.ie

Question Time

Can I become an electrician?

No. An electrician is a well-established trade which has its own development programme and its own target job market. Third level programmes are designed to equip graduates to work at design/development level and then to liaise with skilled trades for implementation.

What is the difference between Electronic Engineering and Electrical Engineering?

Electronic Engineering is small scale, low voltage, component level, microchips and programming.

Electrical Engineering is high power, mains electricity, generation, power lines, transformers, motor/generators and automation.

What elements of renewable energy are covered in the course?

Modules dealing with all current renewable areas are dealt with on a mandatory basis because of their relevance. There is also an opportunity to explore these areas further through elective modules.

What level of Mathematics is required?

Grade O6/H7 in the Leaving Certificate exam is the minimum requirement, however, a higher grade is recommended.



Graduate Profile

Stephen Tracey
Power Engineer

"After graduation, I joined ESB Networks on a 3 year graduate engineer programme. I spent the first year on network data analysis and software design and the second year on Health & Safety IT Development, during which I attended UCD to complete a Diploma in Health & Safety in the workplace.

Currently, in Year 3, I am with ESB International designing and upgrading High Voltage Substations. The work is highly challenging and interesting and my studies prepared me well for it."

Electrical Engineering

CR 062 Level 7 Award

- ▶ Progression to Level 8 Honours Degree & Postgraduate Programmes
- ▲ Higher Certificate Option

Application: CAO
Award Title: Bachelor of Engineering in Electrical Engineering
Duration: 3 Years (6 Semesters)
Places: 40 (between CR 062 and CR 580)
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 062	250*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Electrical Engineering?

Providing electrical power in a modern economy is about generation, distribution and usage in a safe, economic and sustainable way. Fossil fuel energy now combines with solar, wind and tidal energy to create "embedded" generation which needs a "smart grid" to automatically switch users and suppliers in and out while maintaining the quality of the supply. CIT's Electrical Engineering course is designed to equip technologists for this environment.

Helpful Leaving Certificate Subjects

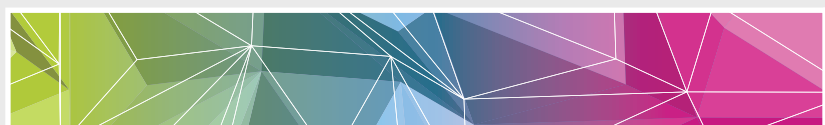
Engineering and Physics.

Potential Areas of Employment

- Energy Generation/Transmission
- Building Supply/Installation/Services/Maintenance
- Commissioning
- Process/Automation Industry

First Year at a Glance

- Year 1 is a good mix of practice and theory so on average that's about 12 hours in the class and 12 hours in the laboratory
- Theory: how electricity is generated, transmitted and distributed and there are also classes in electronic circuits, writing programmes and CAD
- Mathematics: This is required as everything in engineering has a formula which tells you how it works
- Laboratory work: you will build, test and do measurements and also you will learn how to present your work, written and verbally





About the Course

The general fields of study are Renewable Generation, Transmission and Distribution, Plant Automation, Motor Control, Power Systems Planning, and Industrial Management and Services. The syllabus is designed to prepare graduates for work in electrical power and automation systems. The high academic standard of the course is complemented by a strong emphasis on applications and project work. State-of-the-art lab equipment and software prepares graduates for the work environment. Class work is supplemented by field trips to major employers within the greater locality.

Further Studies

For details, see <http://e-eng.cit.ie>

Suitably qualified graduates are eligible to apply for entry to Year 4 (final) of

- > Bachelor of Engineering (Honours) in Electrical Engineering

Career Opportunities

Graduates will have acquired both the knowledge and the competence to work in generation and distribution of electrical energy, in the control of automated production systems with particular emphasis on power drives and aspects of robotic control, in the maintenance of Combined Heat and Power (CHP) and in embedded generation systems. Graduates will also have acquired the competence to work in the application and maintenance of renewable sources of electrical energy such as wind energy and fuel cells. Graduates can expect to find employment in the energy generation, transmission and grid control section of the market plus in the area of automation as utilised in modern processes.

Contact Information

Dr Joe Connell
Department of Electrical & Electronic Engineering
T: 021 433 5475
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Question Time

What is the difference between Electronic Engineering and Electrical Engineering?

Electronic Engineering is small scale, low voltage, component level, microchips and programming. Electrical Engineering is high power, mains electricity, generation, power lines, transformers, motor/generators and automation.

Has the course professional accreditation?

The Level 7 in Electrical Engineering is accredited by Engineers Ireland for Associate membership.



Graduate Profile

Harry O'Farrell
Energy Consultant

Can I become an electrician?

No. An electrician is a well-established trade which has its own development programme and its own target job market. Third level programmes are designed to equip graduates to deal with projects at design/development level and when approved/ agreed, the work is implemented by skilled trades.

What elements of renewable energy are covered in the course?

Modules dealing with current renewable areas are dealt with on a mandatory basis because of their relevance. There is also an opportunity to explore these areas further through elective modules.

What level of Mathematics is required?

Grade 06/H7 in the Leaving Certificate exam is the minimum requirement, however, a higher grade is recommended.



"I completed my Level 7 in 2009 and Level 8 in 2010. I then joined Energy Services Ltd. In Cork who are energy consultants specialising in energy procurement, supply/demand side management internationally.

My projects so far include embedded generation, power transmission/distribution, including wind farms, and consumption monitoring and assessment at home, in Europe and as far away as Central Asia.

My training as an electrician plus my undergraduate programmes have prepared me well for this work. Power/electrical engineering is an excellent career and there is significant demand for it."

Chemical & Biopharmaceutical Engineering (Honours)

CR 105 Level 8 Award

► Progression to Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Engineering (Honours) in Chemical & Biopharmaceutical Engineering
Duration: 4 Years (8 Semesters)
Places: 30
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 105	425*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must score the necessary CAO points and meet the minimum entry requirements.

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
4	2	C3 (H) or (Note 1)	D3 (O/H)

Note 1: The requirement for C3 (H) Mathematics may also be satisfied by C3 (H) in Applied Mathematics plus D2 (H) in Mathematics.

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
4	2	H4 or (Note 1)	O6/H7

Note 1: The requirement for H4 Mathematics may also be satisfied by H4 in Applied Mathematics plus H6 in Mathematics.

NB: Please note the H4 grade in Mathematics can also be used to satisfy one of the H5 entry requirements.

What is Chemical & Biopharmaceutical Engineering?

Chemical Engineering is all about change; creating life enhancing products and services by applying scientific and mathematical understanding to design, control and improve processes that change raw materials into useful products. Chemical Engineers are world leaders in producing medicines, clean energy and water and other key products in a cost effective, safe and environmentally-friendly manner.

Helpful Leaving Certificate Subjects

Mathematics, Chemistry, Biology, Physics, and Applied Mathematics. We recommend that you have two of the three science subjects.

Work Placement

A salaried placement is part of Year 3 and is spent either in industry or with a consultancy (subject to availability).

Potential Areas of Employment

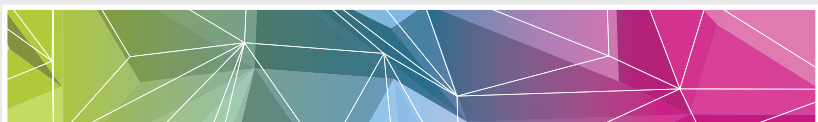
- Pharmaceuticals & Biopharmaceuticals
- Food & Beverages

- Oil & Gas
- Energy & Environment
- Building Products
- Consultancy

First Year at a Glance

Learners of this programme are exposed to a broad range of mathematical, scientific, engineering and technological knowledge, methods and techniques that allow them to research, critique, derive and apply relevant solutions from their studies and practical work.

- Mathematics: is the language of engineering, students will use mathematics to model, analyse, predict and control the behaviour of complex chemical and pharmaceutical systems
- Communications: students need to communicate effectively on complex engineering activities with the engineering community and with society at large
- Engineering Science: students will learn the fundamentals of physics and chemistry to allow them to understand the scientific basis of chemical engineering
- Engineering Laboratory Practices: students will learn how to operate items of chemical and biopharmaceutical process equipment in a professional and safe manner





First Year at a Glance *(continued)*

- Principles of Process Engineering: students are introduced to material and energy balances on reactive processes and unreactive processes
- Cellular Microbiology: students will learn how cells can be used to produce useful biotechnology products

About the Course

Chemical Engineering is ideally suited to students with ability in mathematics and science, who enjoy problem solving and aspire to well-paid, satisfying jobs at home and abroad. With 30 years' experience, we have demonstrated that fulfilling, world-class careers can be achieved by graduates.

Lectures are supplemented by laboratory sessions, project work and team exercises. The course is comprehensive, addressing sectors from heavy chemicals like oil and gas to high value products like pharmaceuticals, as well as issues like energy efficiency, waste minimisation and environmental protection, all in the context of safe and sustainable operations.

Also visit: www.whynotchemeng.com and www.cit.ie/chemeng

Accreditation

The Institution of Chemical Engineers (IChemE) has accredited the chemical engineering degree at Master level. Accreditation is for a period of 5 years at Master Level, effective from the academic year 2015/2016 up to and including academic year 2019/2020.

When these graduates seek Chartered Chemical Engineer status with IChemE, their CIT degree means they will fully satisfy the academic requirements, without the need to demonstrate further learning to Master level. They will have demonstrated that they have the chemical engineering knowledge and understanding required for a Chartered Member of IChemE.

Engineers Ireland represents all engineering disciplines in Ireland and is a member of Federation Europeene 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.

Contact Information

Noel Duffy
Department of Process, Energy and Transport Engineering
T: 021 433 5882
E: noel.duffy@cit.ie



Graduate Profile

Erin Reidy
Graduate Engineer

Further Studies

For details, see www.cit.ie/chemeng

Suitably qualified graduates are eligible to apply for a postgraduate degree at CIT:

- > MEng in Chemical and Biopharmaceutical Engineering (Taught)
- > MEng (by Research)
- > PhD

Career Opportunities

With over 30 years of graduates, alumni may be found in North America, Australia, and the Far East, at levels from vice-president of corporations to recent hires. Many of the graduates remain in technical support roles, others develop into managerial positions as production, engineering, human resources and general managers. The 'typical' graduate is engaged in the region, in the greater Munster area, in the pharmaceutical and biopharmaceutical sector. Starting salary for chemical engineers is usually the highest of all engineers, reflecting the world-wide demand for their skills.

Question Time

How proficient at Mathematics should I be?

As with all engineering programmes, Mathematics is used as a tool to communicate ideas and to solve problems so you should be comfortable with Mathematics.

Can I pursue a career in pharmaceuticals?

Many graduates pursue careers in the fine chemical, pharmaceutical and biopharmaceutical industries where they are involved with plant design, commissioning, operations and optimisation.

Who will be teaching me?

The lecturers are Chemical Engineers and most have spent significant amounts of time working in the Process Industry, and as a result can bring real life experiences to the classroom.

Will I have lectures where there are hundreds of other students?

CIT prides itself on the fact that all courses are taught in a small class environment (typically 30 students per class), ensuring that students have every opportunity to interact with their lecturers and succeed in their studies.

"Based in MSD Brinny, I am currently involved in production support engineering and clean utilities. This involves work on various projects to reduce costs and improve the processes. These projects take me to all areas of the site from sterile manufacturing to environmental engineering. MSD Brinny Biopharmaceuticals treat cancers, arthritis, Hepatitis C, and Crohn's disease. They are made on-site through biotech fermentation, purification, sterile filling and packaging, and released to 90 countries.

This degree prepared me for my career in industry where I use technical, practical and team-work based skills every day."

Sustainable Energy Engineering (Honours)

CR 510 Level 8 Award

► Progression to Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Engineering (Honours) in Sustainable Energy Engineering
Duration: 4 Years (8 Semesters)
Places: 30
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 510	300*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
4	2	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 6 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
4	2	O6/H7	O6/H7

What is Sustainable Energy Engineering?

Sustainable Energy Engineering involves the understanding and application of the engineering and technological principles of energy conversion and use. Energy is one of the driving forces behind civilization and the future challenge is to source this energy in a sustainable fashion. Renewable energy has saved Ireland over €1 billion fossil fuel imports in past five years.

Helpful Leaving Certificate Subjects

Mathematics, Physics, Engineering, Construction Studies, Design and Communication Graphics, and Applied Mathematics.

Work Placement

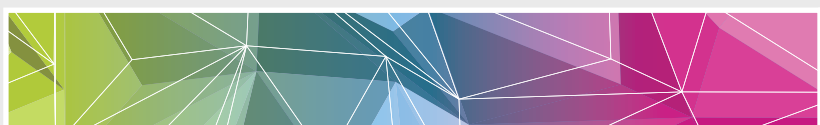
There is work placement for a minimum period of 10 weeks in Year 3.

Potential Areas of Employment

- Energy Management
- Energy Systems Design
- Energy Project Management
- R&D Energy Engineer
- Process Engineer
- Design Engineer
- Engineering Consultant

First Year at a Glance

- Sustainable Energy: study of energy resources and the necessity for energy sustainable sources
- The Science of Energy: the theory behind energy conversion processes
- Electrical Principles: fundamentals of electrical and electronic circuits
- Computer Control Applications: use of sensors, microprocessors & programming to control processes
- Mathematics: developing mathematical tools which underlie sustainable energy engineering
- Mechanics: basic principles of forces and movements that are fundamental to engineering design
- Engineering Chemistry: applying science of chemistry to engineering principles
- 3D CAD: CAD allows engineers to communicate their ideas graphically





About the Course

Attention is given to component scale and systems design along with efficient management, control and measurement of energy supply systems. The first two years of the course introduce and develop the fundamental components of an engineering discipline. The third and fourth years extend the specialist nature of the course.

Modules are delivered by staff from many different disciplines, allowing the student to gain understanding of the roles of a range of engineering disciplines involved in the energy and sustainability field. Site visits are organised which have included: wind farms, hydroelectric power stations, and solar installations. Visiting speakers provide industry input to the programme and have included GSK, Phillips 66, OpenHydro, Arups, Kingspan, Stryker, and Abbotts. Most of these companies now employ graduates from the programme.

A major individual research 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 and industry at the annual CIT Engineering Exhibition in April.

Some of the Final Year projects will be based on the CIT ZERO2020 Building Project (www.zero2020energy.com) which aims to have net zero energy use once fully retrofitted with a new low energy façade and 25kW of solar photovoltaics linked to a 2kW wind turbine.

Other Final Year projects will be based on the €1 million NSBET microgrid project (National Sustainable Building Energy Testbed) (<http://nimbus.cit.ie/tec>) a collaboration between CIT and UTRC which provides a micro heat and power grid to the Nimbus Research Building, and allows research on smart grids, supply and demand side energy management technologies, and new product research and development. Nimbus is located at the CIT Bishopstown Campus.

There is a mandatory work placement module for a minimum of 10 weeks at the end of the third year, however, in most instances the company will extend this over the summer up to 6 months in total. The student will be placed in an energy related industry, consultancy, government agency (SEAI), or research group. The placement will be assessed by means of presentations, reports and research project development. There are opportunities for students to spend this period abroad on a European exchange.

Accreditation

This programme is accredited at undergraduate level by the Energy Institute which enables graduates to progress towards Chartered Engineer.



Graduate Profile

Julie McGrath
Graduate Engineer

Further Studies

For details, see www.cit.ie/energyeng

Honours Degree holders who achieve the specified level of academic performance are eligible to apply for a postgraduate course of study, both at CIT and at other third level colleges in Ireland and abroad.

Career Opportunities

Graduates over the past 5 years have been employed as process engineers, design engineers and energy analysts. All major industry now requires that its energy use be minimised, and so energy graduates are working in all sectors of industry, including, biopharmaceutical, biomedical devices, energy supply utilities, and manufacturers of energy systems.

Contact Information

Chris Gibbons
Department of Process, Energy and Transport Engineering
T: 021 433 5428
E: chris.gibbons@cit.ie

Question Time

How proficient in mathematics should I be?

Mathematics is used in all engineering disciplines and provides the tools for complex problems to be understood and solved. You would need to be comfortable with maths and we recommend a minimum Grade 03.

Is there a shortage of graduates in the Sustainable Energy field?

Yes. Globally there is shortage of Engineers who specialise in Energy Engineering.

What kinds of Energy Systems are available at CIT?

- 2.4kW Wind Turbine
- Wind Monitoring Masts
- Solar Thermal Collectors
- Artificial Sky Unit
- EV Charging Point
- Zero Energy Building Retrofit
- 4 Wheel Rolling Road and Engine Test Bed
- CIT/UTRC Low Energy Building Test Bed (<http://nimbus.cit.ie/tec>)

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.

Julie completed a Level 7 Degree in Civil Engineering and transferred into Year 3 of the BEng in Sustainable Energy Degree in 2008.

She completed 6 months' work placement in Chris Mee Safety Engineering which involved gaining a working knowledge of the new Standard (ISO 14064), for Greenhouse Gas Management or Carbon Footprint measurement.

Julie undertook a final year project in Wind Energy and graduated in 2010. Julie now works for Bord Gáis as a graduate engineer.

Environmental Engineering

CR 055 Level 7 Award

► Progression to Level 8 Honours Degrees & Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Engineering in Environmental Engineering
Duration: 3 Years (6 Semesters)
Places: 20
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 055	230*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Environmental Engineering?

Environmental Engineering is that branch of engineering concerned with the application of scientific and engineering principles for the protection and improvement of the environmental quality of the world in which we live.

Environmental Engineers work on issues of sustainability, provide safe and secure drinking water, collect, treat and properly dispose of wastewater and other wastes, design flood protection measures, maintain or improve air and noise quality, design sustainable urban drainage systems, clean up contaminated land and groundwater, and help communities and industry minimise pollution, among many other activities.

It is most commonly a distinct and specialist engineering discipline within the Civil Engineering profession and it is in this context that this course has been developed.

Helpful Leaving Certificate Subjects

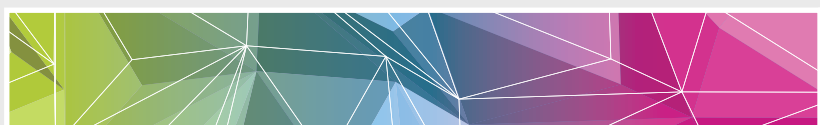
Mathematics, English, and Physics.

Potential Areas of Employment

- Consulting Engineers
- State/Semi-State Bodies
- Utility Companies
- Local Authorities
- Contractors
- Self-Employed Consultant

First Year at a Glance

- **Mechanics:** understanding the performance of engineering materials when subject to external loads and forces
- **CAD:** computer-aided design similar to design and communications graphics in the Leaving Certificate
- **Construction:** domestic scale construction addressing the detailing of traditional and passive house techniques, external works and service provision
- **Health & Safety:** professional obligations under the Safety, Health and Welfare at Work Act and how to apply them to the workplace
- **Environmental Engineering:** an understanding of the environment in an engineering context; topics include water cycle, water quality, air and noise pollution, soil contamination
- **Land Surveying:** developing the ability to use specialist surveying equipment to complete land surveying and building measurement tasks
- **Material Science:** understanding the nature and properties of engineering materials
- **Mathematics**
- **Communication Skills**





About the Course

Practical sessions are carried out to provide as much “hands on” experience as possible. There is continuous assessment of reports, drawings and projects in addition to mid and end of module examinations. The Department of Civil, Structural & Environmental Engineering has active links with colleges in France, Germany, Finland, and the Czech Republic and student study exchanges with these colleges can be arranged.

Many graduates of the programme will use the qualification as a stepping stone to attain an Honours degree in the discipline.

Accreditation

The Department has a long history of professional accreditation of its courses; the well-established BEng in Civil Engineering course is fully accredited by Engineers Ireland and it is envisaged that the BEng in Environmental Engineering will be similarly accredited in due course.

The BEng (Honours) and taught MEng programmes in the Department successfully completed the Engineers Ireland accreditation process in 2012 & 2014. Engineers Ireland represents all engineering disciplines in Ireland and is a member of Federation Europeene d’Associations Nationales d’Ingenieurs (FEANI) through which Irish engineers are recognised in Europe. Engineers Ireland is a signatory to the Sydney and Dublin Accords through which Irish engineers are recognised in USA, Canada, Australia, New Zealand, Hong Kong, South Africa, and the UK.

Further Studies

For details, see www.cit.ie/cse

Subject to the achievement of the appropriate entry requirements graduates of the programme may progress to an Honours engineering degree programme in Civil or Environmental Engineering.

Further study opportunities in CIT include direct entry to

- > Year 3 of Bachelor of Engineering (Honours) in Sustainable Energy Engineering (CR510)
- > Year 4 of Bachelor of Science (Honours) in Construction Management (CR572)

The Department has an active environmental engineering research unit and additionally offers taught postgraduate opportunities in the environmental engineering discipline (Level 7 & Level 8 Special Purpose Awards - Certificate in Environmental and Energy Engineering and a Level 9 MEng in Civil Engineering (Environment and Energy) programme).

Career Opportunities

An undergraduate education in engineering provides a very good platform not only for a career and/or further education in engineering but potentially for a much wider spectrum of employment opportunities. Graduates of this programme will have developed skills in a broad range of civil engineering disciplines but will have developed particular expertise in environmental engineering.

For further information in relation to the environmental engineering profession please refer to the Engineers Ireland website at www.engineersireland.ie

Contact Information

David Cadogan
Department of Civil, Structural & Environmental Engineering
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Question Time

What topics are studied in this programme?

The first two years of the programme involve foundation studies in theory and fundamental principles. Fundamental civil engineering practice studies are undertaken in the areas of Environmental Engineering, Construction, Health and Safety, Materials Technology, Surveying, and Structural Engineering.

In Year 3 the mandatory modules have a particular focus on Environmental Engineering with skills in Water, Wastewater, Integrated Waste, Transport Planning and Infrastructure Design being developed; engineering practice skills are further developed in the areas of Management and Geotechnical Engineering. The theory and fundamental principles studies necessary for the further academic progression of the graduate are also provided. The Year 3 Project module (10 credits) affords the student an opportunity to carry out an engineering investigation into a specific topic where he/she can use the knowledge gained during his/her studies.

Why study Environmental Engineering?

Increased environmental awareness and significant developments in environmental legislation and quality assurance requirements have created increased career opportunities locally, nationally and internationally for environmental engineers. Environmental engineering infrastructure such as systems for water supply and distribution, wastewater collection and treatment and flooding control, which were developed some time ago, are in urgent need of renewal and the provision of modern management systems for the broad remit of today’s environmental engineering infrastructure is a priority in a world increasingly aware of sustainability and cost issues; qualified Environmental Engineers are needed to deliver this renewal.

Automotive Technology & Management

CR 046 Level 7 Award

- ▶ Progression to Level 8 Honours Degree & Postgraduate Programmes
- ▲ Higher Certificate Option

Application: CAO
Award Title: Bachelor of Science in Automotive Technology & Management
Duration: 3 Years (6 Semesters)
Places: 40
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 046	210*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Automotive Technology and Management?

Motor vehicle technology and the motor industry in general have undergone dramatic changes in recent times. Technological advances have made vehicles more efficient, more environmentally friendly, and safer, whilst at the same time strict standards are being enforced by manufacturers, distributors and retailers.

The motor and transport industries require highly qualified people at supervisory and management level. This course is designed to take account of these advances and it prepares graduates for employment within such a dynamic industry.

Helpful Leaving Certificate Subjects

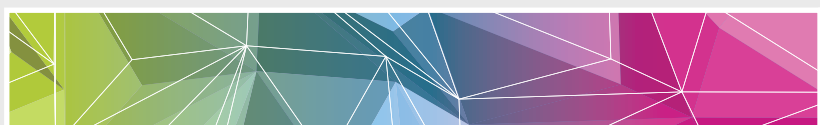
Engineering, Physics, and Business.

Potential Areas of Employment

- Motor Dealerships: Sales and After-Sales Departments
- Transport and Logistics Companies
- Motor Vehicle Distributor Organisations
- Motor Vehicle Assessors

First Year at a Glance

- Engine Technology: hands-on practical and classroom based instruction on engine construction and operating principles
- Automotive Science: scientific principles relating to automobile design and operation
- Automobile Electrical Systems: the electrical and electronic systems which are used to provide comfort, safety & efficiency in modern vehicles
- Garage Practice: practical knowledge and workshop experience of modern motor vehicles
- Communication Skills: to allow graduates to liaise effectively between customers, mechanics, suppliers and assessors
- Automotive Administration: management of the service system using computer systems for e.g. parts ordering and tracking, monitoring, billing for the service operation





About the Course

The course has a unique combination of theoretical and applied areas of study in conjunction with relevant business subjects. In short, the course provides the basis for a successful career within the motor and transport industries.

The course is taught through a combination of lectures, practical work and assignments related to practical aspects, e.g. motor vehicle technology, garage practice, automobile electronics, advanced diagnostics, CAD/vehicle design, etc.

Work placement is incorporated for those who progress to the Honours Degree.

Further Studies

For details, see www.cit.ie

Degree holders who achieve the specified level of academic performance are eligible to apply to

- > Bachelor of Science (Honours) in Transport Management

Career Opportunities

This Degree provides varied and rewarding career opportunities in many types of enterprise throughout the industry ranging from motor dealerships to vehicle manufacturing and transport companies. Employment opportunities include supervisory, management and technical positions within sales and after-sales sectors of the motor, transport, and fleet industries. The Degree lends itself towards a career within vehicle distributors/manufacturers along with vehicle assessing. Business start-up opportunities are also possible.

Contact Information

Clive Atkinson
Department of Process, Energy and Transport Engineering
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Question Time

Can I become a motor mechanic from the course?

No, to become a motor mechanic requires registration with Solas and completing an apprenticeship.

Is there work placement during the course?

Work placement is incorporated for those who progress to the Bachelor of Science (Honours) in Transport Management programme.



Graduate Profile

Patrick Hourihane
Transport Manager

"In 2010, I completed my BSc in Transport Management & Technology (now titled BSc in Automotive Technology and Management) in CIT and I continued there to obtain my BSc (Honours) in Transport Management in 2011.

I immediately got a job with Creedon Transport. The experience I got there stood to me and I'm now a Transport Manager for Thames Materials in London, with a fleet of 40 trucks. My day involves the daily planning, routing and maintenance for all the fleet. The degree course in CIT really prepared me for all aspects of my job."

Craft Technology (Wood) with Business

CR 077 Level 7 Award

► Progression to Level 8 Honours Degree & Postgraduate Programmes

Application: CAO
Award Title: Bachelor of Science in Craft Technology (Wood) with Business
Duration: 3 Years (6 Semesters)
Places: 20
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 077	215*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements

Leaving Certificate in 5 Subjects

Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Craft Technology (Wood) with Business?

Craft Technology is focused on practical skills as well as a knowledge of technology used in current building practice. There are a number of aspects to Craft Technology: sustainable building techniques, conservation, building information modelling, and practical skills in roofing and joinery all blended with core business and management comprehension. The Business section will assist you in starting up your own business.

Helpful Leaving Certificate Subjects

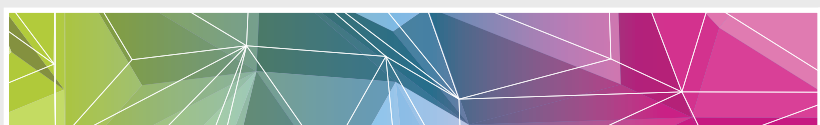
Business Studies, Design and Communication Graphics, and Construction Studies.

Potential Areas of Employment

- Manager in Construction
- Business Owner
- Project Manager
- Education/Training
- Joinery/Furniture Design/Manufacture

First Year at a Glance

- Carpentry: bringing you through the principles of roofing geometry design and construction
- Joinery: introducing the practical skills required in quality joinery production
- Accounting: giving you the tools you need to profit from your skills
- Maths: developing your logic and problem solving competences
- Geometric Graphics: applying geometry to complex carpentry and joinery situations
- Wood Technology: fundamentals of timber
- Construction Materials: the engineering methodologies of material testing
- Produce Design: applying the theory of how good products become iconic to your product
- Creativity Innovation & Teamwork: Learning key teamwork, communication and presentation skills
- Surveying: learning the fundamentals of site surveying





About the Course

This course develops the core technical skills in the specific areas of design, woodworking skills, building technology, and business knowledge. Building technology covers the various aspects of technology that make up the fabric of a building, from passive housing details to Building Information Modelling.

The focus on workshop practices develops; kinetic skills, critical analysis, creative abilities and Design Thinking, with solutions developed, and final designs demonstrated on the scale models produced. These skills are developed over three years, each year expanding on the knowledge and skills of the previous year, producing a comprehensive understanding of timber as a building medium, and how to best use it as a component part of the building envelope.

Modules include Carpentry where you will design, draw and make various types of roofs from basic 'A' Frame to complex Octagonal based turrets.

Joinery includes projects that involve designing and making doors and windows of traditional and modern types. It also includes designing and making scale model stairs as well as curved joinery pieces.

Building Technology will explore and highlight different principles behind the different materials used in the fabric of building as well as explaining the newer technologies currently influencing building today.

The Business element includes accountancy, marketing and project management theory and practice. An elective module on Entrepreneurship will take you through the steps involved in starting up your own business.

The Final Year Project is a cap stone project that allows you to demonstrate your acquired skills in a single product that you research, concept, design and make supported by the potential commercial opportunities generated by your idea.

Career Opportunities

Graduates of the Degree programme will have the skills and competencies to enter technical and managerial levels within the construction industry or to become self-employed using entrepreneurial skills acquired during this programme. The option to go directly into a Level 8 Honours Degree is available.

Further Studies

For details, see www.cit.ie

Subject to availability of places, suitably qualified graduates may apply for entry to Year 4 (final) of

- > Bachelor of Science (Honours) in Construction Management

Contact Information

Brian Thoma
Centre of Craft Studies
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E: brian.thoma@cit.ie

Question Time

If I haven't studied Construction Studies in the Leaving Certificate, will I be at a disadvantage?

No, the course is designed to take the learner from the basics to a complex level of skill and design in Carpentry and Joinery over three years.

Will I be a qualified Carpenter upon graduation of this degree?

No. Carpentry & Joinery is a well-established trade which has its own development programme and its own target job market. This programme is designed to equip graduates to work at technician level and to liaise with skilled trades and the design team.

Is there a Level 8 option available?

Yes, graduates of this degree may progress into the Year 4 Bachelor of Science (Honours) in Construction Management subject to the conditions set out in column 1.

Is the class size small and are the exams based on continuous assessment?

Class sizes are limited to 20 due to workshop space. Assessments vary from subject to subject but most contain a mix of class projects and final exams.

Are all the materials supplied by CIT?

Yes, all class materials are supplied by CIT, however, this does not include books, or extra material required for the production of your final year design project.



Craft Technology – Mechanical Services

CR 078 Level 7 Award

Application: CAO
Award Title: Bachelor of Science in Craft Technology – Mechanical Services
Duration: 3 Years (6 Semesters)
Places: 40
Location: CIT Bishopstown Campus, Cork

CAO Points in 2015	Round 1
CR 078	205*

*Please note that the points above were calculated under the Pre-2017 Leaving Certificate grading scale. Points for entry in September 2017 will be calculated under the new Leaving Certificate grading scale. Details of the new grading scale can be found at www.transition.ie

Admission

For admission to a programme, standard applicants must

- score the necessary CAO points and
- meet the minimum entry requirements

Entry 2016

Minimum Entry Requirements Leaving Certificate in 5 Subjects			
Subjects D3 (O/H)	Subjects C3 (H)	Maths Grade	English or Irish Grade
5	0	D3 (O/H)	D3 (O/H)

Entry 2017

Minimum Entry Requirements Leaving Certificate in 5 Subjects			
Subjects O6/H7	Subjects H5	Maths Grade	English or Irish Grade
5	0	O6/H7	O6/H7

What is Craft Technology – Mechanical Services?

This programme in Craft Technology - Mechanical Services has three overarching aims: to elevate, educate, and engage. Its focus is on planning, installation, commissioning and maintenance of services within office blocks, hospitals, hotels, schools, recreational centres, pharmaceutical, apartment blocks, public works, shopping centres, as well as external environmental utilities. Mechanical Services involves heating, cooling and ventilation systems, components and controls and will also cover water services, waste water systems and individual services such as steam, compressed air, refrigeration, specialist gases and renewable energy systems.

Helpful Leaving Certificate Subjects

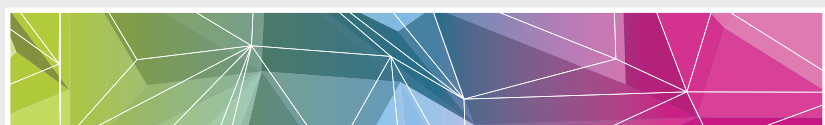
Engineering, Technology, Design and Communication Graphics, and Mathematics.

Potential Areas of Employment

- Mechanical Services Supervisor
- Maintenance Manager/Supervisor
- Project/Contract Manager
- Facilities/Utilities Operators
- Field Services Engineer
- Technical Sales Representative

First Year at a Glance

- Mechanical Services Workshop: practical skills
- Mathematics Technology: solving practical mathematical problems
- Mechanical 1: heating, ventilation, air conditioning and hot and cold water systems
- Fluids and Gases Engineering Science: how fluid and gases behave
- Introductory CAD: conveys engineering requirements graphically
- CAD Mechanical 1: drawing of building services equipment
- Introduction to Industrial Services: steam, compressed air, medical and industrial gases and vacuum systems
- Health & Safety: professional obligations under Health and Safety and how to apply them in the workplace
- Mechanical Services Lab: piping and jointing methods
- Refrigeration Fundamentals: refrigeration and air conditioning Principles





About the Course

Craft Technology - Mechanical Services aims to provide students with an understanding of craft mechanical principles as it relates to industry and utilities operation within completed commercial and industrial facilities. The course is taught through a combination of lectures, practical work and assignments/projects.

Year 1 is structured to deliver the fundamentals through a range of modules such as: Mechanical Services Workshop, Fluids and Gases, CAD, Industrial Services, Refrigeration, Health and Safety, Mathematics, and Mechanical 1. Also the Creativity, Innovation & Teamwork module allows the students to develop their communication and practical skills.

Year 2 will have a greater emphasis on developing a more in depth analytical and problem solving skills. The modules will include Building Energy Management Systems (BEMS), Mechanical Controls, Documentation Management, 3D CAD, and Management.

The common themes of craft skills and engineering practice remain in **Year 3** but there is a targeted focus on design, critical thinking and estimating for mechanical services and project management. In the final semester the students will be required to produce a final year project including research, problem analysis and planning ability.

Career Opportunities

On completion, graduates will be technically proficient with the appropriate knowledge, skills and competencies in Mechanical Services. They will have further developed the ability to work effectively as an individual and as part of a multi-disciplinary team and an understanding in which

the mechanical services supervisor operates. They will be of high academic and practical standards, in order to match the needs of both the Irish and international Mechanical Services industry.

Contact Information

Eamonn Sheffron
Centre of Craft Studies
T: 021 432 6735
E: eamonn.sheffron@cit.ie

Question Time

If I haven't studied Engineering in the Leaving Certificate, will I be at a disadvantage?

No, the course is designed to take the student from the basics to a complex skill and design in Mechanical Services over three years.

Is the class size small and are the exams based on continuous assessment?

Class sizes are limited to 20 for workshop/laboratory work and 40 for classroom lectures. Assessments vary from module to module with a range of assessment methods applied, continuous assessment, practical skills evaluation, short-answer written reports, projects and end of semester formal examinations. Modules will typically have 3 occasions of assessment spread over the semester.

Are all the materials supplied by CIT?

Yes, all class materials are supplied by CIT, however, this does not include personal protective equipment, books, or extra material involved in the production of your final project.

