Frequently Asked Questions

Graduates of this course will be awarded a B Eng (Hons) at level 8 of the National Framework of Qualifications.

What are the minimum entry requirements?

B Eng (Level 7) in Building Services Engineering (or National Diploma equivalent) with an average of 50% or better in 3rd year exams

OR

Pass in a B Eng in Building Services Engineering (or National Diploma Equivalent) plus relevant work experience

OR

B Eng (or National Diploma equivalent) in a related discipline plus relevant work experience.

What is the NFQ award level for this course?

Graduates of this course will be awarded a National Framework Qualification at Level 8. Similar to all existing CIT awards, this will be a HETAC award issued under delegated authority by CIT.

What modules will be studied.

In total 12 modules will be studied.

6 modules in Semester 1, September – January, including one elective module.

6 modules in Semester 2, February – May.

Summary of each module is attached.

For detailed content of each module see
http://www.cit.ie/course/CR%20072
Then click on modules, etc.

B Eng (HONS) IN BUILDING ENERGY SYSTEMS

ENQUIRIES TO
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NDP
National Development Plan 2007 - 2013

CIT
Institiúid Teicneolaíochta Chorcaí
Cork Institute of Technology
Dámh na hInnealtóireachta agus hEolaíochta
Faculty of Engineering & Science

B Eng (Hons) In Building Energy Systems

This programme is a one year add-on for those already possessing a Level 7 B Eng (or equivalent National Diploma) in Building Services Engineering or a suitable related discipline. The aim of the programme is to upgrade and update the skills needed to calculate, analyse and forecast energy use within modern buildings. Emphasis is placed on applying engineering fundamentals to problem solving whilst recognising the limitations of current design methodologies and the need to apply engineering judgement in the design process.

Participants will focus on creating vibrant, dynamic, sustainable environments within large building complexes, maximising the contribution from renewable energy technologies whilst minimising the total energy consumed.

BUILDING ENERGY SYSTEMS

Course Programme

SEMESTER 1 (SEPT – DEC)		CREDITS	CLASS CONTACT HOURS
Building Thermal Dynamic Analysis	This module looks at all elements that contribute to heat gain in a building. Quantification of solar gain and internal gain is undertaken. Cooling loads are calculated using dynamic modelling. Methodolgies such as shading and use of exposed thermal mass to minimise the cooling load are explored.	5	4
Project – Research	This module requires the learner to develop research, problem analysis and project planning skills. The project is undertaken on an individual basis working from an approved outline brief of a project title and objectives. The learner develops the knowledge, skills, and competences required to successfully research, develop and scope the project and present an implementation plan. The learner is expected to work as an individual under direction of a project supervisor and to comminuicate the methodology and outcomes of their work in a style and manner appropriate for professional practitioners in their discipline.	5	
Psychrometric Design	This module addresses issues relating to the design of systems and equipment to deliver a specified cooling load. Psychrometric, mass flow and energy balance equations are applied to system and component analysis. Optimisation of design conditions is undertaken to minimise the load on air conditioning plant.	5	4
Mathematics and Statistics	This module extends previous learning in Mathematics & Statistics to support Control Engineering and Quality Assurance respectively.	5	4
Energy Systems Control	Energy is one of the driving forces behind civilization. The efficient and optimum use of energy is closely correlated to the ability to measure, communicate and control its application. The efficient control of energy requires the collection, transmission and analysis of data and the application of the resultant information in a intelligent manner. This requires suitable sensing technologies and communication technologies, together with appropriate control algorithms.	5	4
Commercial BER (Elective)	This module examines the process involved in the energy rating of commercial (non-domestic) buildings. Students are guided through the requirements of non-domestic BER's based on the current EU and Irish legislation. Industry standard software is utilised to produce BER's for commercial buildings and Display Energy Certs (DEC) for large public buildings.	5	4

SEMESTER 2 (FEB – MAY)		CREDITS	CLASS CONTACT HOURS
Project Realisation	This module develops within the learner the knowledge, skills and competences required to successfully complete a project in accordance with an approved plan. The module requires the learner to develop, implement and critically assess a detailed methodology to address a defined problem within a prescribed timeframe. The learner is expected to work as an individual under direction of a project supervisor and to comminuicate the methodology and outcomes of their work in a style and manner appropriate for professional practitioners in the discipline.	10	
Sustainable Energy 3 (Power)	Options for sustainable power production are investigated. Wind, hydro, ocean, biomass and solar technology options are evaluated in terms of resource potential, system performance, future development potential and environmental impacts.	5	4
Maintenance & Reliability	This module will afford the student an understanding of Reliability and Maintenance Management. It focuses on the analysis of a system for reliability, the human factors affecting reliability and maintenance management systems for specified equipment.	5	4
Building Energy Calculations	This module uses the concept of Degree Days to estimate fuel usage and CO2 emissions for heating, cooling and energy recovery systems.	5	3
Energy Efficient Design	This module details the steps involved in systems design for building services. It explores the incorporation of energy efficiency in the early stage of the design process.	5	4

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