



UNIVERSITY COLLEGE DUBLIN  
COLLEGE OF ENGINEERING AND ARCHITECTURE

UCD SCHOOL OF CIVIL, STRUCTURAL AND ENVIRONMENTAL ENGINEERING

**MASTER OF ENGINEERING (Civil) DEGREE PROGRAMME  
MTEMP006, T161**

**Duration:** 2 Years

**Schedule:** Full-Time

**Commencing:** Monday, 12 September, 2012

**Programme Co-ordinator & Contact Details:**

Dr. Kenneth Gavin  
School of Civil, Structural and Environmental Engineering  
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Belfield  
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Ireland

**Application Details:** Applications for this programme are through Online Applications [www.ucd.ie/apply](http://www.ucd.ie/apply)

**Entry Requirements:** Candidates holding a Bachelors Degree in Engineering (with a minimum of 2H2 honours level) or an equivalent engineering qualification will be considered.

**Closing Dates:** 15 March 2012 (Round 1 Offers) and 15 July 2012 (Round 2 Offers)

Candidates from outside the European Union are encouraged to apply by 15 March 2012, in order to leave sufficient time for processing of visa applications. More information on the latter point is available at: [http://www.citizensinformation.ie/en/travel\\_and\\_recreation/travel\\_to\\_ireland/student\\_visas.html](http://www.citizensinformation.ie/en/travel_and_recreation/travel_to_ireland/student_visas.html)

**Tuition Fees :** €6,120.00 (EU students) per annum, €11,400.00 (Non-EU) per annum. For up-to-date information, see <http://www.ucd.ie/registry/adminservices/fees/index.html>

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## OVERVIEW

The new ME course in civil engineering at UCD will:

1. Produce graduates with specialist knowledge in the area of Structural or Water and Environmental Engineering
2. Develop future leaders of the civil engineering profession by developing complimentary skills in the area of business, law and professional practice
3. Develop links with industry to facilitate a multi-disciplinary, project oriented learning environment

The programme has a 2-year, single stage, four semester framework, with 30 credits per semester and is suitable for graduates with a 3-year BSc (Engineering Science) degree or a 3-year Bachelor of Engineering degree (Civil) (equivalent to 180 ECTS credits) who wish to obtain a professionally recognised qualification fully compliant to masters level. A comprehensive list of pre-requisites is available and prospective applicants should consult UCD Engineering Programme office with queries regarding eligibility.

## **COURSE CONTENT**

In the first semester of the ME programme a series of core Civil Engineering Design courses are taken. These build on the theoretical principles (structures, water and geotechnics) developed during the BSc. programme and apply these to real design problems. Whilst the learning is classroom based, with the instructors using real-life case histories to develop design skills, a Problem Based Learning (PBL) capstone course is run parallel with these modules. The PBL course has a open-ended question format, where each week an expert from industry gives a brief for a real engineering design problem and the students (in groups of four to six) have 5 days to compile a scheme (outline) design which has to be presented to the external expert and their classmates in a questions and answers type interruptible format. The second semester offers considerable scope for specialisation through discipline specific electives which allow the coverage of advanced concepts. These are designed to allow the students to develop their theoretical and design skills in one area of specific interest (Structures or Water). The major research project in semesters 3 and 4 involves preparing a research proposal, performing a literature review and summative critique of the literature, completing experimental work, analysis and interpretation and compiling a thesis.

## **MODULES**

<b>Module Code</b>	<b>Module Title</b>	<b>Core/ Option</b>	<b>Core Credits</b>	<b>Option Credits</b>	<b>Semester</b>
CVEN40150	Structural Analysis, Design and Specification	(C)	5		1
CVEN40160	Systems and Geotechnics	(C)	5		1
CVEN40170	Civil Engineering Design	(C)	10		1
CVEN40180	Highway and Water Engineering	(C)	5		1
AESC40080	EIS & Strategic Environmental Assessment	(O)		5	1
ACM30160	Mathematics for Engineers VI	(O)		5	1
BSEN30240	Waste management	(O)		5	1
Code TBC	Structural Dynamics	(O)		5	1
CVEN40300	Advanced Structural Analysis and Design	(O)		5	1
CVEN40310	Materials and Design	(O)		5	1
CVEN40390	Innovation Leadership	(O)		5	1

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CVEN40330	Construction Management	(O)		5	1
ENVB40040	Environmental Impact Assessment (Biology & Environmental Sci)	(O)		5	1
MEEN30140	Professional Engineering Finance	(O)		5	1
MEEN40050	Computational Continuum Mechanics I	(O)		5	1
Code TBC	Engineering Research Project	(C)	10		1
Code TBC	Research Methods and Technical Report Writing	(C)	5		1
CVEN40140	Design Project	(C)	10		2
CVEN40440	Professional Work Experience (June to August)	(O)		5	2
CVEN40070	Unit Treatment Process in Water Engineering	(O)		5	2
CVEN40080	Hydraulic Engineering Design	(O)		5	2
CVEN40120	Bridge Engineering	(O)		5	2
CVEN40040	Structural Modelling Bridge Engineering	(O)		5	2
CVEN40210	Soil Mechanics and Geotechnical Eng	(O)		5	2
CVEN40430	Soil-Structure Interaction	(O)		5	2
CVEN40050	Structural Design (Buildings)	(O)		5	2
CVEN40060	Transport Operations and Planning	(O)		5	2
ACM30170	Numerical Methods for Engineers	(O)		5	2
CVEN30110	Transportation Engineering	(O)		5	2
STAT40510	Applied Statistical Modelling	(O)		5	2
Code TBC	Peer Assisted Tutoring in CSEE	(O)		5	2
Code TBC	Engineering Research Project	(C)	15		2
MEEN40430	Professional Engineering (Management)	(C)	5		2

## **TEACHING AND ASSESSMENT**

### **Teaching**

Teaching takes place in a mix of traditional lecture theatres, through group work, tutorials and with significant use of enquiry based learning, with students working in small groups. A large individual research project is completed in semesters 3 and 4.

### **Assessment**

Whilst a wide range of assessment methods are used across the modules, the following critical elements have been considered in the design of the assessment procedure in order to enhance the quality of student learning:

- (1) The use of formative (forward-looking) assessment using real-life problems where possible
- (2) Self-assessment is used as an aid the students in evaluating their own performance
- (3) The standards required to demonstrate excellence are clearly defined
- (4) Regular, timely, detailed and constructive feedback is provided on coursework

### **Timetable / Hours**

#### **Semester 1**

Teaching term 1 Monday, 10 September 2012 – Friday, 30 November 2012 (12 weeks)

Revision Saturday, 1 December 2012 – Friday, 7 December 2012 (1 week)

Exams Monday, 10 December 2012 – Friday, 21 December 2012 (11 working days)

#### **Semester 2**

Teaching term 2a: Monday, 21 January 2013 – Friday, 8 March 2013 (7 weeks)

Fieldwork/Study period Monday, 11 March 2013 – Sunday, 24 March 2013 (2 weeks)

Teaching term 2b Monday, 25 March 2013 – Friday, 26 April 2013 (5 weeks)

Revision Monday, 29 April 2013 – Sunday, 5 May 2013 (1 week)

Exams Tuesday, 7 May 2013 – Saturday, 18 May 2013 (11 working days)

### **Summer term/Research period**

Term Monday, 20 May – Sunday, 8 September (16 weeks)

Graduate exam process (final dates to be confirmed)

1 October Bank Holiday: Monday, 29 October 2012

2 St Patrick's Day, Sunday, 17 March 2013

3 Good Friday, 29 March 2013; Easter Sunday, 31 March 2013; Easter Monday, 1 April 2013

4 May Bank Holiday: Monday, 6 May 2013

5 June Bank Holiday: Monday, 3 June, 2013; August Bank Holiday: 5 August 2013

### **AWARD**

Graduates are eligible for the award of Masters of Engineering (ME) in Civil Engineering from University College Dublin.

### **CAREER OPPORTUNITIES**

Graduates of this course will be employed in Civil Engineering Consulting firms, Local Authorities, Contractors. Many graduates may choose to follow careers outside of civil engineering typically in finance and management roles.

### **FURTHER INFORMATION**

For further information in relation to this programme, please contact Dr Kenneth Gavin at [kenneth.gavin@ucd.ie](mailto:kenneth.gavin@ucd.ie)