

# Civil Engineering

**This programme is no longer recruiting. Please refer to the programme specification for FdSc Civil Engineering & Construction Management.**

<b>Final award</b>	FdSc (Foundation Degree)
<b>Intermediate awards available</b>	Cert HE
<b>UCAS code</b>	H202
<b>Details of professional body accreditation</b>	JBM Accredited IEng (Partial) – see Added value section below for details.
<b>Relevant QAA Benchmark statements</b>	Foundation Degrees
<b>Date specification last up-dated</b>	July 2012

## Profile

### The summary - UCAS programme profile

#### **BANNER BOX:**

The Foundation Degree in Civil Engineering provides a work related programme of study. Successful completion can lead to entry to an honours degree in Civil Engineering. The programme would suit those already working in the construction industry who would like to obtain a formal qualification. Civil Engineers play a vital role in both design and construction of the 2012 Olympics, the Thames Gateway and other major developments.

#### **ENTRY REQUIREMENTS**

Candidates will be expected to have 240 UCAS tariff points, however mature candidates will be considered on an individual basis. Entry is possible in both semester A & B. There is also a language requirement that If English is not the candidates first language, we require an English language skills test to be taken with a successful outcome of an overall IELTS score of 5.5 with no skill level below 5.0.

#### **ABOUT THE PROGRAMME**

##### **What is Civil Engineering?**

Civil Engineering is defined as 'harnessing the resources of nature for the benefit of society'. Civil Engineers have had a profound influence on society. Public health, transportation, commerce and the environment have all benefited from the work of Civil Engineers. Design of structures, management, construction, surveying and information technology are just a few of the areas students could find themselves working in a career that offers variety, travel and immense job satisfaction.

##### **Civil Engineering at UEL**

We have over 100 years of experience in teaching Civil Engineering and we have developed programmes which are current and will give students the opportunity to develop an understanding of civil engineering and communication skills. With a large proportion of laboratory and practical work students will reinforce the theories and practices learnt in the classroom with 'hands on' experience. Our programmes offer the opportunity to study the fundamental knowledge and theories required by all Civil Engineers and apply these to the practical work environment.

### **Programme structure**

Two years full time and three years part time where work based learning is integrated into both streams by discrete block release and day release modes. The programme has a common first year with the Foundation degrees in Civil Engineering Surveying and Construction Management. The programme has been designed using the criteria from the QAA Benchmarks and is in line with the University programme design policy on Foundation degrees.

### **Learning environment**

The programme benefits from access to purpose built labs, up-to-date drawing office and information technology facilities and modern surveying equipment. Teaching is delivered through formal lectures, tutorials, workshops, practical classes and laboratory sessions. Most lectures are supported by programme notes which allow students to concentrate on lectures and complete some independent studies of their own. Group work is also encouraged in many modules.

### **Assessment**

Assessment varies from module to module but will include examinations, coursework, project work, laboratory reports, work based assignments and tests on competence in practical sessions.

### **Work experience/placement opportunities**

We have an Industrial Placement Tutor who will assist in making job applications and an Industrial Liaison Officer who chairs our Industrial Advisor Group (IAG). The IAG advises the field on programme development and provides the very important industrial link. Students have a range of vocational work based learning activities integrated across their modules of study. The Foundation Degree Programme involves a compulsory structured work based learning programme which is delivered and assessed via the 'Work Based Study' and 'Work Based Project' modules. These comprise 60 credits from the 240 credits required for the Award.

Work experience forms an integral part of completing the foundation degree. This may be gained within a student's existing employment situation or via a work placement. . The School will assist students in preparing and researching for placements and it has a number of employers who regularly recruit placements students from the course but it is a highly competitive situation. Students who cannot find a work placement will not achieve a Foundation Degree but can still achieve a 240 Credit UEL Diploma in Higher education by

undertaking some alternative modules in their final year. This will enable onward progression to an honours degree in Civil Engineering.

### **Project work**

Project work is an important feature of this programme. Students will undertake a number of small projects as part of their studies and to complete a major project during the second year. This will involve using all the knowledge acquired to complete the design of a civil engineering project in consultation with employers work based practical application. The work based projects are in the form of a learning contract between the University, the student and the employer such that the projects are individual and the learning outcomes are individually related to the work the student is employed in.

### **Added value**

The FdSc Civil Engineering degree is accredited as fully:

1. fully satisfying the educational base for an Engineering Technician (Eng Tech)
2. partially satisfying the educational base for an Incorporated Engineer (IEng). A programme of accredited further learning will be required to complete the education base for IEng.

See [www.jbm.org.uk](http://www.jbm.org.uk) for further information.

This programme will allow advanced entry to an honours degree in civil engineering. Students may obtain details of current arrangements from the programme leader.

At the end of the course the students will have a working familiarity with the practical use of standard industry software such as AutoCAD and Microsoft Project. They will also have the opportunity to achieve the new Industry standard for health & safety on site the Construction Safety Certification Scheme (CSCS) by registering & taking the national test. This is a particular requirement of the Group of Major Contractors (GMC).

### **IS THIS THE PROGRAMME FOR ME?**

#### **If you are interested in...**

- Design
- Management
- Surveying
- Construction
- Structures
- Geotechnics

#### **If you enjoy...**

- Design and Construction
- Challenges and problem solving
- Indoor and outdoor work
- Maths

- Science
- Physics
- Information Technology

### **If you want...**

A Foundation Degree with a real practical emphasis geared to meet the needs of employers that reflects current changing demands of the construction industry..

### **Your future career**

Opportunities are available in civil and structural engineering, and in a variety of specialist construction areas. Many graduates have successfully moved to careers in business, management, and finance.

### **How we support you**

The School prides itself on its student support systems. Based on the practice of industry we operate an open door policy with students encouraged to consult with their tutors. Personal tutors will monitor progress and provide assistance and advice with academic and personal problems.

The School facilities include dedicated computer laboratories and equipment which are free to use, as long as they are not required for a class. Technical support is readily available supported by academics.

Employer links are maintained through our Industrial Advisory Board and employers are invited to attend the University to talk to students about careers in civil engineering. Professional bodies also visit the University regularly providing details on the qualification process, the benefits of membership and career development.

### **Bonus factors**

Civil engineering is studied at the Docklands Campus at the heart of the East London. Transport links are available via bus or Docklands Light Railway linking with Central London and major airports.

Local civil engineering companies visit our School regularly seeking to recruit quality students for work within the industry. The strong industrial links provided through our Industrial Advisory Board encourages the employment and career paths of our engineers. Course structure has been developed with employer consultation using practical work-based structured modules and assessment methods.

## **Outcomes**

### **Programme aims and learning outcomes**

#### **What is this programme designed to achieve?**

This programme is designed to give you the opportunity to:

The general aim is to provide a programme of study to develop civil and structural engineering technicians to meet the demands of their profession with a practical work based structure and enabling them to progress to our established and accredited degree programmes leading to professional membership with IEng or CEng status.

Throughout the programme there are overlapping objectives:

- To develop technician engineers to a level that will enable them to function effectively in industry whatever their mode of study
- To provide a knowledge and understanding of current theories and developments in civil engineering
- To enhance their understanding of the design and management processes relevant to civil engineering
- To encourage critical awareness and understanding of other professionals in the construction industry
- To contribute to the development of the technician and subsequently the Incorporated Engineer as an important professional in society and the built environment
- to promote an active interest in engineering and to encourage students to respond to changes and developments within their profession
- To allow progression in career and educational development giving opportunities to study for an accredited civil engineering degree

### **What will you learn?**

The overall learning outcomes are:

- To train and educate civil engineering technicians to be competent engineers in the working environment
- To provide the opportunities to further their careers and develop a wider understanding of the civil engineering process.
- To understand the importance of professionalism, management, and problem solving techniques for civil engineering works

### **Knowledge**

- Civil Engineering procurement and construction process
- Soil mechanics, geotechnics and material science
- Principles of analysis & design of civil engineering structures
- Land surveys, setting out of building and civil engineering structures
- Analytical mathematical and IT problem-solving
- Design and practical project applications

### **Thinking skills**

- Critical assessment skills
- Intellectual appreciation
- Time management
- Self discipline

- Developing networking skills

### **Subject-Based Practical skills**

- Use of Information Technology
- Field Surveying skills
- Laboratory testing and analysis
- Dealing with work pressures & deadlines
- Managing work load

### **Skills for life and work (general skills)**

- Communication skills
- Problem-solving skills
- Analytical skills
- Management skills
- Knowledge application

## **Structure**

### **The programme structure**

#### **Introduction**

All programmes are credit-rated to help you to understand the amount and level of study that is needed.

One credit is equal to 10 hours of directed study time (this includes everything you do e.g. lecture, seminar and private study).

Credits are assigned to one of 5 levels:

- 0 - equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree programme
- 1 - equivalent in standard to the first year of a full-time undergraduate degree programme
- 2 - equivalent in standard to the second year of a full-time undergraduate degree programme
- 3 - equivalent in standard to the third year of a full-time undergraduate degree programme
- M - equivalent in standard to a Masters degree

#### **Credit rating**

The overall credit-rating of this programme is 240 credits.

#### **Typical duration**

The expected duration of this programme is two years when attended in full-time mode or three years in part-time mode. It is possible to move from a full-time mode of study to a part-time mode of study and vice-versa, to accommodate any external factors such as financial constraints or domestic commitments. Many of our students make use of this flexibility and this may impact on the overall duration of their study period.

### **How the teaching year is divided**

The teaching year begins in September and ends in June but some programmes also allow students to join at the start of Semester B, in February. A student, normally registering for 6 modules in one year (3 modules in each Semester) would do so in a full-time attendance mode of study and a student registering for up to 4 modules in one year (2 modules in each Semester) would do so in part-time attendance mode of study.

Part time students in permanent vocational employment spend four days in Industry per week, whilst full time students commence their work based learning between June – September after their first year, and for up to four days a week in their final year.

### **What you will study when**

This programme is part of a modular degree scheme. A student registered in a full-time attendance mode will take a minimum of six 20 credit modules per year. A Foundation degree student will complete six modules at level one and, five at level two.

It is possible to bring together modules from one field with modules from another to produce a combined programme. Subjects are offered in a variety of combinations:

- Single 120 credits at levels one, two and three
- Major 80 credits at levels one, two and three
- Joint 60 credits at levels one, two and three
- Minor 40 credits at levels one, two and three.

Modules are defined as:

Core Must be taken

Option Select from a range of identified module within the field

University Wide Option Select from a wide range of university wide options

The following are the core and optional requirements for the single, major, joint and minor routes for this programme

The following are the core and optional requirements for the single and major routes for this programme

<b>LEVEL Code</b>	<b>TITLE</b>	<b>SKILLS MODULES (Insert Y where appropriate)</b>	<b>CREDITS</b>	<b>STATUS SINGLE</b>
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1	CE1201	Skills for Academic Learning	Y	20	Core
1	SV1032	Quantitative Methods		20	Core
1	SV1031	Plane Surveying		20	Core
1	CE1211	Geomatics and Construction		20	Core
1	CE1210	Structures		20	Core
1	CE1212	Work based Study		20	Core
2	CE2214	Work Based Project*		40	Core
2	CE2208	Construction Management and Organisation		20	Core
2	CE2215	Properties of Materials		20	Core
2	CE2225	Structural Form & Element Design		20	Core
2	CE2216	Soils Properties		20	Core
2	CE2222	Mathematics for Civil Engineers		20	Option: but compulsory to enable progression on to the BEng in Civil Engineering,
2	CE2224	Experiential Project		20	Option

\* If students do not secure a work placement then the two option modules may be studied and passed to achieve the UEL Diploma in Higher Education.

### **Requirements for gaining an award**

In order to gain an honours degree you will need to obtain 360 credits including:

- A minimum of 120 credits at level one or higher
- A minimum of 120 credits at level two or higher
- A minimum of 120 credits at level three or higher

In order to gain an ordinary degree you will need to obtain a minimum of 300 credits including:

- A minimum of 120 credits at level one or higher
- A minimum of 120 credits at level two or higher
- A minimum of 60 credits at level three or higher

In order to gain a Diploma of Higher Education you will need to obtain at least 240 credits including a minimum of 120 credits at level one or higher and 120 credits at level two or higher

In order to gain a Certificate of Higher Education you will need to obtain 120 credits at level one or higher.

In order to gain a Foundation Degree you will need to obtain a minimum of 240 credits including:

- A minimum of 120 credits at level one or higher
- A minimum of 120 credits at level two or higher

(A foundation degree is linked to a named Honours degree onto which a student may progress after successful completion of the Foundation degree.)

### **Foundation degree classification**

Where a student is eligible for a Foundation degree, the award classification is determined by calculating the arithmetic mean of all marks obtained for modules at level 1 or higher contributing to the programme and applying the mark obtained as a percentage, with all decimal points rounded up to the nearest whole number, to the following classification

70% - 100% Distinction

55% - 69% Merit

40% - 54% Pass

0% - 39% Not passed

## **Assessment**

### **Teaching, learning and assessment**

#### **Teaching and learning**

#### **Knowledge is developed through**

- Lectures and Seminars
- Assignments
- Student Centred Projects
- Use of a variety of industry based software packages
- Attending industry / trade exhibitions
- Receiving feedback from the work based learning employer/ client.

#### **Thinking skills are developed through**

- Analytical assessment of data
- Critical assessment of information
- Problem-solving practical applications
- Attending, professional institute & guest speaker presentation

#### **Practical skills are developed through**

- Laboratory and experimental work
- Drawing and design
- Field programmes and site visits
- Observing site operations / construction works
- Developing a critical awareness to health & safety procedures in practice.

### **Skills for life and work (general skills) are developed through**

- Interactive communication exercises
- Individual and group working sessions
- Attending careers events and industry recruitment days

### **Assessment**

#### **Knowledge is assessed by**

- Time constrained examinations
- Laboratory and field work exercises
- Assignments and project work
- One-to-one interviews

#### **Thinking skills are assessed by**

- Approaches to solving problems
- Analysis of alternative solutions
- Practical solutions to complex tasks
- Producing a work based reflective diary

#### **Practical skills are assessed by**

- Laboratory reports and experimental assessment
- Group survey work
- Application to practical problem-solving
- Presenting information by formal presentations
- Production of a working product, design or ‘temporary work’

#### **Skills for life and work (general skills) are assessed by**

- Oral Presentations
- Written communication exercises
- Drawing, sketching and design work
- Undertaking mock / real placement interviews

## **Quality**

### **How we assure the quality of this programme**

#### **Before this programme started**

Before this programme started, the following was checked:

- there would be enough qualified staff to teach the programme;
- adequate resources would be in place;
- the overall aims and objectives were appropriate;
- the content of the programme met national benchmark requirements;
- the programme met any professional/statutory body requirements;
- the proposal met other internal quality criteria covering a range of issues such as admissions policy, teaching, learning and assessment strategy and student support mechanisms.

This is done through a process of programme approval which involves consulting academic experts including some subject specialists from other institutions.

### **How we monitor the quality of this programme**

The quality of this programme is monitored each year through evaluating:

- external examiner reports (considering quality and standards);
- statistical information (considering issues such as the pass rate);
- student feedback.

Drawing on this and other information, programme teams undertake the annual Review and Enhancement Process which is co-ordinated at School level and includes student participation. The process is monitored by the Quality and Standards Committee.

Once every six years an in-depth review of the whole field is undertaken by a panel that includes at least two external subject specialists. The panel considers documents, looks at student work, speaks to current and former students and speaks to staff before drawing its conclusions. The result is a report highlighting good practice and identifying areas where action is needed.

### **The role of the programme committee**

This programme has a programme committee comprising all relevant teaching staff, student representatives and others who make a contribution towards the effective operation of the programme (e.g. library/technician staff). The committee has responsibilities for the quality of the programme. It provides input into the operation of the Review and Enhancement Process and proposes changes to improve quality. The programme committee plays a critical role in the quality assurance procedures.

### **The role of external examiners**

The standard of this programme is monitored by at least one external examiner. External examiners have two primary responsibilities:

- To ensure the standard of the programme;
- To ensure that justice is done to individual students.

External examiners fulfil these responsibilities in a variety of ways including:

- Approving exam papers/assignments;
- Attending assessment boards;
- Reviewing samples of student work and moderating marks;
- Ensuring that regulations are followed;
- Providing feedback through an annual report that enables us to make improvements for the future.

### **Listening to the views of students**

The following methods for gaining student feedback are used on this programme:

- Module evaluations
- Staff and student representation on programme committees
- Subject area feedback information analysis for programme and module evaluation

Students are notified of the action taken through:

- Publication of minutes from the Programme Subject Area Committee
- Providing details on the programme notice board and UELPlus

### **Listening to the views of others**

The following methods are used for gaining the views of other interested parties:

- Feedback from External Examiners
- Industrial Advisory Board
- Information from professional bodies
- CPD Events attended by teaching staff
- Construction and liaison visits to employers
- Attendance at vocationally specific recruitment fairs & careers events

## **Further Information**

### **Alternative locations for studying this programme**

<b>Location Which elements?</b>	<b>Taught by UEL staff</b>	<b>Taught by local staff</b>	<b>Method of Delivery</b>
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### **Where you can find further information**

Further information about this programme is available from:

- The UEL web site (<http://www.uel.ac.uk>)
- The programme handbook
- Module study guides

- UEL Manual of General Regulations and Policies <http://www.uel.ac.uk/qa/>
- UEL Quality Manual <http://www.uel.ac.uk/qa/>
- Regulations for the Academic Framework <http://www.uel.ac.uk/academicframework>
- UEL Guide to Undergraduate Programmes