

PROGRAMME SPECIFICATION

KEY FACTS

Programme name	Civil Engineering with Architecture, Civil Engineering with Architecture with Industrial Placement
Award	MEng (Hons)
School	School of Engineering and Mathematical Sciences
Department or equivalent	Civil Engineering
UCAS Code	H2KA, H2KC
Programme code	USCEAR, USCAMY
Type of study	Full Time
Total UK credits	480
Total ECTS	240

PROGRAMME SUMMARY

These programmes, which are only offered full time, are divided into four Programme Stages (Programme Stages 1, 2, 3 and 4), each occupying a full academic year. The programmes last for four years or five years with an industrial placement. They lead to an MEng degree that is accredited by the Joint Board of Moderators that includes the Institution of Civil Engineers and the Institution of Structural Engineers. The industrial placement lasts a year and normally occurs between Programme Stages 2 and 3 of the programme.

Entry points to the MEng programme are at the start of Programme Stage 1 and at the start of Programme Stage 3, where students on the BEng (Hons) programme who obtain a Programme Stage 2 aggregate mark of 60%, or higher, have the option of transferring to the MEng (Hons) degree. Students entering the course in Programme Stage 1 must obtain an aggregate mark at the end of Programme Stage 2 of 50%, or higher, in order to remain registered for the MEng programme. Those that do not will be transferred to the BEng programme. If you wish to gain practical experience you have the option of spending a year on paid industrial placement.

The MEng degree programme has been designed around four themes; theory and technical understanding, design and construction, professional studies and personal development. These themes describe different aspects of your development during the four years of the programme to become an MEng graduate. The Civil Engineering with Architecture programme allows you to focus on the creative aspects of civil engineering by studying design in an architectural context. The core civil engineering subject areas, Structures, Geotechnical Engineering, and Hydraulics are studied in all years of the programme. Mathematics, Surveying and Management are the other key subject areas. Appreciation of the wider context in which engineering decisions are made and implemented is given through both architectural and civil engineering design and management studies. The architectural design modules are taught at the School of Architecture and Interior

Design at the London Metropolitan University. You will attend courses at the London Metropolitan University one morning each week of term.

Industrial Involvement is a key feature of the programme. Lecturers from industry are invited to make presentations in all Programme Stages of the programme. In Programme Stages 2, 3 and 4 of the programme, design projects, which allow you to familiarise yourself with professional practice, are set and reviewed by practicing consulting engineers. You are encouraged to make site visits through the Open Door to Industry Scheme.

The total number of credits awarded for the whole programme is 480, comprising 120 Level 4, 120 Level 5, 90 Level 6 and 150 Level 7 or Masters level modules. With Level 6 and Level 7 modules split between Programme Stage 3 and 4.

Programme Stage 1

Upon successful completion of Programme Stage 1 *or* the Certificate in Civil Engineering with Architecture you will be able to discuss underlying concepts and principles associated with Civil Engineering and interpret these within the context of your practice.

Programme Stage 2

For all of you completing Programme Stage 2 *or* the Diploma in Civil Engineering with Architecture you will build on your previous knowledge and experience. You will develop skills of enquiry in your subject and develop different approaches to problem-solving as well as identify the limitations of your knowledge.

Programme Stage 3

For all of you completing Programme Stage Three *or* the BEng degree you will further develop a coherent systematic, detailed knowledge of your discipline. You will be able to develop techniques for practice drawing on research and scholarship demonstrating your role as a reflective practitioner.

Programme Stage 4

For all of you completing Programme Stage Four *or* the MEng degree you will have developed further your knowledge and essential skills in principle areas of civil engineering. You will also evaluate critically current evidence in civil engineering topics and provide appropriate critiques of knowledge and techniques in civil engineering with architecture design.

Aims

To produce graduates who:

- Are equipped to perform at the highest technical level
- are able to apply problem solving skills to complex design problems
- are able to communicate effectively
- have a practical understanding of management and business in a professional environment
- are capable of taking into account wider issues relating to the practice of engineering

- have had first-hand experience of current practice in the Civil Engineering industry
- are able to develop and evaluate a variety of innovative conceptual designs
- are able to communicate three-dimensional and spatial proposals to a variety of people within and from outside the industry
- have an appreciation of the role of the Architect
- are able to appreciate the role of Architecture in complex design projects

WHAT WILL I BE EXPECTED TO ACHIEVE?

On successful completion of this programme, you will be expected to be able to:

Knowledge and Understanding

- demonstrate comprehensive knowledge and understanding of analytical engineering subjects at an advanced level
- demonstrate extensive knowledge of civil engineering operations
- discuss your comprehensive understanding and wide knowledge of the design process and the spatial implications of the design
- have a good understanding of management and business principles as applied to engineering
- evaluate the role of the professional engineer and the wider issues relating to society, the environment and sustainability

Skills

- plan and carry out experimental work
- use a range of laboratory equipment to obtain data, carry out an analysis of it and comment on the results
- prepare technical reports and drawings, and make technical presentations
- interrogate published scientific literature effectively
- use computer packages for analysis and design
- plan, conduct and report work of an investigative nature
- use analytical and experimental techniques to solve complex problems in engineering
- design a system or element to meet specifications taking a range of constraints into account
- synthesize and evaluate critically, information and data from various sources
- collaborate on projects involving other engineering disciplines
- communicate effectively through writing, drawings and oral presentations
- solve problems using analytical and mathematical skills
- work effectively in interdisciplinary teams
- make use of information technology tools
- manage resources and time

Values and Attitudes

- maintain a professional engineering attitude
- enhance the welfare, health and safety of the community through engineering solutions

This programme has been developed in accordance with the QAA Subject Benchmark for Engineering.

HOW WILL I LEARN?

The main components of the programme are lectures, tutorials, laboratory periods, design modules, field courses and private study. Modules held at London Metropolitan University will also include studio based classes and crits. Lectures are the principal introduction to new material. They are relatively formal in style and are presented to the whole student group or sometimes to more than one group together. Each lecture is of 50 minutes duration with the timetable based on units of one hour to allow for short breaks. Full, prompt attendance is expected.

For tutorials, groups are much smaller and provide you with opportunities to work on problems and exercises connected with the lecture courses. This also provides an additional opportunity for staff to deal with any of your questions arising from the lectures.

In laboratories there is the chance for you to study experimentally some of the theory dealt with in the lecture courses. Group size here is usually 4 or 5. In Geology and Surveying longer practical sessions are required outside in the field. There are two residential field courses of about one week's duration each and which occur as follows:

Programme Stage 1 Geology:	End of spring term / Easter vacation
Programme Stage 2 Surveying:	End of spring term / Easter vacation

Attendance at laboratory classes and field courses is compulsory.

Design is at the core of the programme and runs through from Programme Stage 1 to Programme Stage 4. The projects in each year link with the previous year and build upon the knowledge and practical experience gained. The programme starts in Programme Stage 1 with fundamental concepts of design and proceeds to a major design project in Programme Stage 4. Projects in Programme Stage 1 and 2 are individual, but in Programme Stages 3 and 4 you will work in a team with student from the other Civil Engineering programmes. The Integrated Design project in Programme Stage 4 is the major element in the final year programme. You are able to broaden your experience of design by working on a large-scale project where you can see how different technical areas interact. The projects familiarise you with professional design practice and consider the inter-relationships between design, construction and the constraints of economy, safety, serviceability and appearance.

In addition to these taught elements of the programme, which on average require around 20 contact hours per week, there will be the need for private study. This time will be spent working on background reading, revision of notes, work on tutorial problems, coursework including writing reports on laboratory experiments and individual or group work on design projects including the Major Project in Programme Stage 3 and the Integrated Design Project in Programme Stage 4. You are expected to undertake around 30 hours per week of private study spread over a rather longer period than the contact hours, to account for reflective learning weeks, revision and the Intensive Design Project in Programme Stage 3 that follows the examinations. The ratio of private study to contact hours across each year increases from approximately 1.6:1 in Programme Stages 1 & 2 to 2.3:1 in Programme Stages 3 & 4. The number of self-directed study hours for each module is specified in each module specification.

All modules are supported by an online learning environment "Moodle". Moodle contains information specific to the modules you are studying on your programme and additional modules that provide support for your studies in a variety of ways. Moodle is used by different modules in different ways, but you will generally find module material, such as course schemes, supplementary study material, tutorial sheets etc, which you can download or look at online. Each module also contains a "Grades" application where you can view your coursework marks.

There are also two modules which are designed to support your studies in a more general way: "Civil Engineering Focal Point" which contains information relevant to the administration of the programme and "SEMS Placement & Internships Resource Centre", which helps you find placements and internships

WHAT TYPES OF ASSESSMENT AND FEEDBACK CAN I EXPECT?

Assessment and Assessment Criteria

A variety of assessment methods are used in the programme. The rationale for this is to assess a range of different skills as well as expose you to different approaches. The assessments link as closely as possible to relevant activities you would undertake in practice.

Most modules are principally assessed by regular coursework, seen and unseen tests, and unseen written examinations. Design studies, laboratories and field courses are assessed through individual or group reports, presentations and/or poster displays, and the review of portfolios of work developed during the module. Computational and CAD coursework is used to assess IT skills. Modules that include field courses have a high coursework weighting within the module assessment. The Major Project in Programme Stage 3 and the Integrated Project in Programme Stage 4 are assessed through written reports and oral examination.

The importance of design modules and the Major Project in Programme Stage 3 mean that assessed coursework provides just over half the marks available during the programme, however in core theoretical modules unseen written examinations are weighted more heavily, usually contributing between 75% and 80% of the overall module mark.

Assessment Criteria are descriptions, based on the intended learning outcomes, of the skills, knowledge or attitudes that you need to demonstrate in order to complete an assessment successfully, providing a mechanism by which the quality of an assessment can be measured. Grade- Related Criteria are descriptions of the level of skills, knowledge or attributes that you need to demonstrate in order to achieve a certain grade or mark in an assessment, providing a mechanism by which the quality of an assessment can be measured and placed within the overall set of marks. Assessment Criteria and Grade-Related Criteria will be made available to you to support you in completing assessments. These may be provided in programme handbooks, module specifications, on the virtual learning environment or attached to a specific assessment task.

Feedback on assessment

Feedback will be provided in line with our Assessment and Feedback Policy. In particular, you will normally be provided with feedback within three weeks of the submission deadline or assessment date. This may be written or oral, specific to you or generally applicable, and would normally include a provisional grade or mark. If the coursework submitted is a laboratory report your work will not be returned until three weeks after the last report has been submitted. Laboratories are undertaken by groups of students in rotation over periods of many weeks and consequently the last group of students may complete the laboratory and submit the report many weeks after the first group.

Generic feedback on examinations is provided within four weeks of the end of the examination period. Feedback on the Major Project in Programme Stage 3 and the Integrated Design Project in Programme Stage 4 may require longer time periods.

The full policy can be found at:

https://www.city.ac.uk/__data/assets/pdf_file/0008/68921/assessment_and_feedback_policy.pdf

Assessment Regulations

In order to pass your Programme, you should complete successfully or be exempted from the relevant modules and assessments and will therefore acquire the required number of credits. You also need to pass each Programme Stage of your Programme in order to progress to the following Programme Stage.

Your overall aggregate mark will be calculated by combining the aggregate marks from Programme Stages 2, 3 and 4 in the ratio 25:38:37.

The pass mark for each module is 40%, except for Masters level modules where the pass mark is 50%. In most modules there is also a requirement to pass individual components of the module. The pass mark for these individual components is also 40% or 50% in the case of Masters level modules. The details of which assessment components need to be passed individually is given in the module specifications.

If you fail an assessment component or a module, the following will apply:

1. Compensation: where you fail up to a total of one sixth of the total credits of a Programme Stage at first or resit attempt, you may be allowed compensation if:
 - Compensation is permitted for the module involved (see What will I Study section in the programme specification), and
 - It can be demonstrated that you have satisfied all the Learning Outcomes of the modules in the Programme Stage, and
 - A minimum overall mark of no more than 10% below the module pass mark has been achieved in the module to be compensated, and
 - An aggregate mark of 40% has been achieved for the Programme Stage.

Where you are eligible for compensation at the first attempt, this will be applied in the first instance rather than offering a resit opportunity.

If you receive a compensated pass in a module you will be awarded the credit for that module. The original component marks will be retained in the record of marks and your original module mark will be used for the purpose of your Award calculation.

Compensation is only permitted for modules in Programme Stage 4 of the programme

2. Resit: Where you are not eligible for compensation at the first attempt, you will be offered one resit attempt.

If you are successful in the resit, you will be awarded the credit for that module. The mark for each assessment component that is subject to a resit will be capped at the pass mark for the module. This capped mark will be used in the calculation of the final module mark together with the original marks for the components that you passed at first attempt.

If you do not meet the pass requirements for a module and do not complete your resit by the date specified you will not progress to the next Programme Stage and the Assessment Board will require you to be withdrawn from the Programme.

If you fail to meet the requirements for a particular Programme Stage or the Programme, the Assessment Board will consider whether you are eligible for an Exit Award as per the table below.

If you would like to know more about the way in which assessment works at City, please see the full version of the Assessment Regulations at:
http://www.city.ac.uk/_data/assets/word_doc/0003/69249/s19.doc

WHAT AWARD CAN I GET?

Enhanced First Degree with Honours:

Programme Stage	HE Level	Credits	Weighting (%)	Class	% required
1	4	120	0	I	70

2	5	120	25
3	6/7	120	38
4	6/7	120	37

II upper division 60
II lower division 50

Bachelor's Degree with Honours:

Programme Stage	HE Level	Credits	Weighting (%)
1	4	120	10
2	5	120	30
3	6	120	60

Class **% required**

I 70
II upper division 60
II lower division 50
III 40

Ordinary Degree:

Programme Stage	HE Level	Credits	Weighting (%)
1	4	120	10
2	5	120	30
3	6	60	60

Class **% required**

With Distinction 70
With Merit 60
Without 40
Classification

Diploma of Higher Education:

Programme Stage	HE Level	Credits	Weighting (%)
1	4	120	25
2	5	120	75

Class **% required**

With Distinction 70
With Merit 60
Without 40
Classification

Certificate of Higher Education:

Programme Stage	HE Level	Credits	Weighting (%)
1	4	120	100

Class **% required**

With Distinction 70
With Merit 60
Without 40
Classification

WHAT WILL I STUDY?

Programme Stage 1

To pass Programme Stage 1, you must have acquired 120 credits as specified in Programme Stage 1 of the Programme Scheme.

Programme Stage 1 consists of 8 compulsory Level 4 modules, totalling 120 credits. You are required to take all modules at this level.

The Architectural Design & Drawing module is taken at the School of Architecture and Interior Design at the London Metropolitan University. The Geology for Engineers module includes a compulsory residential field course. Seen and unseen tests are carried out at the start of the second term and unseen examinations take place in the third term.

Module Title	SITS Code	Module Credits	Core/ Elective	Can be compensated?	Level
Geology for Engineers	CV1301	20	C	N	4
Hydraulics	CV1302	10	C	N	4
Materials	CV1306	15	C	N	4
Structural Mechanics	CV1403	15	C	N	4
IT Skills, Communication & CAD	CV1407	15	C	N	4
Civil Engineering Practice & Surveying	CV1408	15	C	N	4
Architectural Design & Drawing	CV1420	15	C	N	4
Engineering Mathematics 1	EX1401	15	C	N	4

Programme Stage 2

To pass Programme Stage 2, you must have acquired 120 credits (as specified in Programme Stage 2 of the Programme Scheme) and achieved an aggregate mark of 50% or higher.

Programme Stage 2 consists of 8 compulsory Level 5 modules, totalling 120 credits. You are required to take all modules at this level.

The Architecture and Context module is taken at the School of Architecture and Interior Design at the London Metropolitan University. The Surveying module includes a compulsory residential field trip. Seen and unseen tests are carried out at the start of the second term and unseen examinations take place in the third term.

If you wish to gain practical experience you have the option of spending a year on paid industrial placement, usually between Programme Stages 2 and 3 (Module ET2013).

Module Title	SITS Code	Module Credits	Core/ Elective	Can be compensated?	Level
Construction Management	CV2309	10	C	N	5
Soil Mechanics	CV2401	15	C	N	5
Fluid Mechanics	CV2402	15	C	N	5
Structural Analysis	CV2403	15	C	N	5
Surveying	CV2404	15	C	N	5
Structural Design	CV2406	15	C	N	5
Engineering Mathematics & Numerical Methods	CV2407	15	C	N	5

Architecture & Context	CV2420	20	C	N	5
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Programme Stage 3

To pass Programme Stage 3, you must have acquired 120 credits as specified in Programme Stage 3 of the Programme Scheme and have successfully completed the professional placement, if applicable. If you fail to meet the requirements for MEng Programme Stage 3, having exhausted all resit opportunities then you may, at the discretion of the appropriate Bachelor of Engineering Assessment Board, be allowed credit towards a Bachelor of Engineering Degree for studies undertaken on the MEng Degree programme.

Programme Stage 3 consists of 5 compulsory Level 6 modules, totalling 70 credits, and 3 compulsory Level 7 or Masters level modules, totalling 50 credits

For the Major Project, you are required to choose a project title and supervisor at the start of the year. The project must have a clearly identifiable architectural theme.

Unseen examinations take place in the third term.

Module Title	SITS Code	Module Credits	Core/ Elective	Can be compensated?	Level
Intensive Design Project	CV3305	10	C	N	6
Geotechnical Engineering	CV3401	15	C	N	6
Hydraulic Engineering	CV3402	15	C	N	6
Structural Engineering	CV3403	15	C	N	6
Engineering Management & Civil Engineering Paper	CV3408	15	C	N	6
Engineering Analysis	CVM311	10	C	N	7
Major Project (with Architecture)	CVM422	30	C	N	7
MEng Design Project	ETM462	10	C	N	7

Programme Stage 4

To pass Programme Stage 4, you must have acquired 120 credits as specified in Programme Stage 4 of the Programme Scheme and have successfully completed the professional placement, if applicable.

Programme Stage 4 consists of 2 compulsory Level 6 modules, totalling 20 credits, and 5 compulsory Level 7 or Masters level modules, totalling 100 credits

Unseen examinations take place in the third term.

Module Title	SITS Code	Module Credits	Core/ Elective	Can be compensated-	Level
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Geotechnical Analysis	CVM301	15	C	Y	7
Computational Hydraulics	CVM302	15	C	Y	7
Integrated Design Project (with Architecture)	CVM325	45	C	N	7
Structural Systems	CVM403	15	C	Y	7
Professional, Industrial and Management Studies (PIMS)	ETM451	10	C	Y	7
Building Engineering	CV3313	10	C	Y	6
Architectural Surveying and Geomatics	CV3414	10	C	Y	6

TO WHAT KIND OF CAREER MIGHT I GO ON?

Most graduates choose to enter the civil engineering profession either with consultants or contractors. The civil engineering with architecture course prepares students to operate at the interface between architects and civil engineers.

The Centre for Career & Skills Development provides a service to current full-time and part-time undergraduates and postgraduates and to recent graduates of City. Their aim is to give you advice, information and skills you need to make a smooth transition into the world of work.

If you would like more information on the Careers support available at City, please go to: <http://www.city.ac.uk/careers/for-students-and-recent-graduates>.

WHAT PLACEMENT OPPORTUNITIES ARE AVAILABLE?

If you are on an approved placement you take module ET2013 Professional Placement and your experience is graded on the outcomes specified in this module. However, although the grade obtained is reported on the degree transcript it does not contribute to the final degree result.

Placement guidelines are issued to you and your employer at the commencement of training, and these include a placement health and safety booklet. The guidelines include a section on workplace learning that contains information about the ICE Core Objectives. Early in the placement year, you are required to produce a placement plan in conjunction with your Workplace Supervisor and the Visiting Tutor (a member of academic staff). Training is monitored through two formal visits by the Visiting Tutor, and written reports. Informal contact is maintained throughout the year as necessary.

If you wish to take a professional placement you are advised to register accordingly at the beginning of Programme Stage 2. The School of Engineering & Mathematical Sciences Professional Liaison Unit Work Based Learning Advisor collaborates with the University Career and Skills Development Service to deliver a series of Professional Development workshops during Period 1 of Programme Stage 2 to prepare you for

searching for and applying for a work placement. The Professional Liaison Unit is in regular contact with companies and other organisations concerning the availability of training placements and will advise you on making applications.

You are welcome to make your own applications at any time but are strongly advised to discuss these with the Work Based Learning Advisor. Support is provided in the SEMS Placement & Internships Resource Centre module on Moodle.

WILL I GET ANY PROFESSIONAL RECOGNITION?

Accrediting Body: Joint Board of Moderators (Institution of Civil Engineers, Institution of Structural Engineers, Institute of Highway Engineers, The Chartered Institution of Highways and Transportation)

Nature of Accreditation

This degree is accredited as fully satisfying the educational base for a Chartered Engineer (CEng).

See www.jbm.org.uk for further information.

HOW DO I ENTER THE PROGRAMME?

Typical offers

A/AS-level: At least 360 UCAS tariff points. Point scores exclude general studies and key skills. Point scores exclude general studies and key skills. These must include A-level mathematics at grade B. Evidence of ability in a laboratory based subject is preferred

BTEC: Typical offers are DDD plus A level mathematics at grade B

IB: 32 including mathematics at Higher Level

14-19 Advanced Diploma: Engineering at grade A/300: A-level mathematics at grade B/100

Achieving an appropriate level in the Westminster-Kingsway College engineering foundation course, the INTO City, University of London International Foundation in Engineering, Computer Science and Mathematics and Engineering Foundation courses offered by Kaplan International College.

Applicants will need to demonstrate drawing skills.

RPL/RPEL:

Scholarships

City, University of London is offering a Scholarship of up to £3,000 per year to UK and EU undergraduate students achieving grades AAB or above at A-level (or equivalent)

starting an undergraduate course at City in September 2012. Further details can be found on the University's website at <http://www.city.ac.uk/study/why-study-at-city/fees-and-finance/scholarships>.

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