

## Course Specification

<b>Published Date:</b>	15-Aug-2017
<b>Produced By:</b>	Haiden Novis
<b>Status:</b>	Validated

## Core Information

<b>Awarding Body / Institution:</b>	University of Wolverhampton		
<b>School / Institute:</b>	School of Architecture and Built Environment		
<b>Course Code(s):</b>	CV014H01UV	Full-time	3 Years
	CV014H31UV	Part-Time	6 Years
<b>Course Title:</b>	BEng (Hons) Civil and Transportation Engineering		
<b>Hierarchy of Awards:</b>	Bachelor of Engineering with Honours Civil and Transportation Engineering Bachelor of Engineering Civil and Transportation Engineering Diploma of Higher Education Civil and Transportation Engineering Certificate of Higher Education Civil and Transportation Engineering University Statement of Credit University Statement of Credit		
<b>Language of Study:</b>	English		
<b>Date of DAG approval:</b>	12/Apr/2017		
<b>Last Review:</b>	2015/6		
<b>Course Specification valid from:</b>	2015/6		
<b>Course Specification valid to:</b>	2021/2		

## Academic Staff

<b>Course Leader:</b>	Dr Stephen Wilkinson
<b>Head of Department:</b>	Mr Peter Mills

# Course Information

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<b>Location of Delivery:</b>	University of Wolverhampton
<b>Category of Partnership:</b>	Not delivered in partnership
<b>Teaching Institution:</b>	University of Wolverhampton
<b>Open / Closed Course:</b>	This course is open to all suitably qualified candidates.

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## Entry Requirements:

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Entry requirements are subject to regular review. The entry requirements applicable to a particular academic year will be published on the University website (and externally as appropriate e.g. UCAS)

All civil engineering undergraduate courses have had their entry requirements reviewed so that there is a clear distinction between the courses. This is a PSRB requirement in terms of different levels of professional accreditation.

As a minimum applicants must have:

- 80 UCAS tariff points (2017 onwards) from either
- A Levels with grades of CDD or
- BTEC QCF Extended Diploma grade MMP, BTEC QCF Diploma grade DM.
- Access to HE Diploma full award (Pass of 60 credits - of which a minimum of 45 credits must be at level 3 including 18 at Merit or Distinction).

Students must also have GCSEs at grade C+/4 or above in English and Maths or equivalent.

- If you've got other qualifications or relevant experience, please contact The Gateway for further advice before applying.

- International entry requirements and application guidance can be found [here](#)

- Successful completion of the foundation year of our BSc (Hons) Science and Engineering with Foundation Year guarantees entry on to this course

- Successful completion of the International Foundation Year in Science and Engineering guarantees entry on to this course

## Other Requirements

Students must have studied a minimum of two years post GCSE level. However, it is expected that some applicants will be mature students with work experience, who wish to further their career development. These applicants will be processed through standard procedures, which may involve an interview as part of the process. Please see <http://wlv.ac.uk/mature> for further information.

Those who do not meet the entry requirements may be offered an alternative course.

## Distinctive Features of the Course:

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A degree in civil engineering is the starting point for an exciting career that can see you shaping the world we live in; locally, nationally and internationally. Civil Engineering is all about creating, improving and protecting the sophisticated environment that surrounds us.

Civil Engineers are responsible for the design, management and construction of major infrastructure projects such as dams, reservoirs, transport projects, bridges, tunnels, major buildings, water supply, sewage, harbours and sea defences.

Lecturers on this course are a blend of respected academics with a high quality research track record, and experienced professionals, with the associated professional qualifications. The civil engineering department has excellent links with civil and transportation engineering companies as well as the professional bodies.

The BEng (Hons) Civil and Transportation Engineering reflects a growing trend within the construction industry to produce graduates with a detailed understanding of the principles of civil and transportation engineering. In addition, graduates from this course will have the ability to manage a project taking into consideration sustainable development issues and environmental challenges.

Your final year group design project will culminate in the production of a working design for a given civil engineering project. The design will require the consideration of various options, the analysis of the chosen option and the production of an integrated solution covering transportation, water, environmental and management aspects as well as a detailed programme of works and anticipated costs.

Your final year individual dissertation will represent the culmination of your programme of study. You will produce a research report containing assimilated data and be expected to critically analyse the results obtained. A formal written document will be produced as well as an oral presentation.

The BEng (Hons) Civil and Transportation Engineering course is accredited as fully satisfying the educational base for Incorporated Engineer (IEng) status. With further professional experience this will enable graduates to work towards becoming Incorporated Engineers (IEng) and thereafter, with suitable further education (a Master's degree) and experience, be eligible for registration as Chartered Engineers (CEng). For this reason, there has been industrial input in the design of the programme and strong links are maintained through guest lectures, site visits, work placements and the formal Industrial Advisory Board of the Civil Engineering department of the University.

#### Educational Aims of the Course:

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The overarching aim of the course is to develop graduates who are characterised by their ability to develop appropriate solutions to engineering and transportation challenges by using new or existing technologies, through innovation, creativity and change. By undertaking the course, you will be exposed to a number of subject areas that underpin the practices of modern civil and transportation professionals. These include amongst other, traffic engineering, transport planning, design of Intelligent Transportation Systems (ITS) and use of simulation and modelling software tools. In addition, you will cover all the fundamental disciplines of civil engineering for the development of a skills portfolio that will equip you to seek a professional career with duties related to the design, management and construction of major infrastructure projects. Such projects are dams, reservoirs, highways, urban transport schemes, bridges, major buildings, flood defences, water supply, sewage treatment, harbours and sea defences. Finally, the BEng (Hons) Civil and Transportation Engineering course is intended as your first step towards becoming an Incorporated Civil Engineer and a practitioner in the global community.

To meet the above stated aims the course will;

- Provide a broadly based education in civil and transportation engineering, allowing scope for continued development into a wide range of disciplines within these professional areas.
- Address industry's demand for graduates who can understand the principles of civil and transportation engineering, and apply them to infrastructure and construction projects, whilst simultaneously demonstrating an awareness of the ethical, environmental and business aspects of projects.
- Enable students to pursue professional careers in civil and transportation engineering at a level which requires technical proficiency, and the ability to tackle a wide variety of practical problems
- Furnish students with a detailed understanding of the principles of civil and transportation engineering, enabling the rational selection of the most appropriate materials and systems to solve engineering problems that reflect a responsible, ethical and socially aware outlook
- Require students to participate in a group design project where the project team members will each have a specific role related to civil and transportation engineering, and will all be responsible for combining the various aspects to produce a compatible solution.
- Develop the ability to research a civil or transportation engineering subject, assess the available literature, apply appropriate research methods and critically analyse the results obtained.
- Develop a professional attitude towards matters such as design reliability, maintenance, sustainability and safety
- Develop the ability to communicate effectively, formally, informally, written and oral.

## Intakes:

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September

## Major Source of Funding:

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HE FUNDING COUNCIL FOR ENGLAND (HEFCE)

## Tuition Fees:

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Tuition fees are reviewed on an annual basis. The fees applicable to a particular academic year will be published on the University website.

Year	Status	Mode	Amount
2017/8	H	Full Time / Sandwich	£9250.00
2017/8	EU	Full Time / Sandwich	£9250.00
2017/8	Overseas	Full Time / Sandwich	£11475.00
2017/8	H	Part Time	£2835.00
2017/8	EU	Part Time	£2835.00
2017/8	Overseas	Part Time	£5738.00

## PSRB:

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CV014H01UV (Full-time)

Professional Accreditation Body:

Chartered Institute of Highways & Transportation (CIHT)

Accrediting Body:

Institution of Civil Engineers (ICE)

Accreditation Statement:

Accredited by the Institution of Civil Engineers (ICE) on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer.

Approved	Start	Expected End	Renewal
01/Sep/2011	01/Sep/2011	01/Sep/2020	01/Sep/2020

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CV014H31UV (Part-Time)

Professional Accreditation Body:

Chartered Institute of Highways & Transportation (CIHT)

Accrediting Body:

Chartered Institute of Highways and Transportation (CIHT)

Accreditation Statement:

Accredited by the Chartered Institution of Highways and Transportation (CIHT) on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer.

Approved	Start	Expected End	Renewal
01/Sep/2011	01/Sep/2011	01/Sep/2020	01/Sep/2020

CV014H01UV (Full-time)

Professional Accreditation Body:  
Institute of Highway Engineers (IHE)

Accrediting Body:  
Institute of Highway Engineers (IHE)

Accreditation Statement:  
Accredited by the Institute of Highway Engineers (IHE) on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer.

Approved	Start	Expected End	Renewal
01/Sep/2011	01/Sep/2011	01/Sep/2020	01/Sep/2020

CV014H31UV (Part-Time)

Professional Accreditation Body:  
Institute of Highway Engineers (IHE)

Accrediting Body:  
Institute of Highway Engineers (IHE)

Accreditation Statement:  
Accredited by the Institute of Highway Engineers (IHE) on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer.

Approved	Start	Expected End	Renewal
01/Sep/2011	01/Sep/2011	01/Sep/2020	01/Sep/2020

CV014H01UV (Full-time)

Professional Accreditation Body:  
Institution of Civil Engineers (ICE)

Accrediting Body:  
Institution of Civil Engineers (ICE)

Accreditation Statement:  
Accredited by the Institution of Civil Engineers (ICE) on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer.

Approved	Start	Expected End	Renewal
01/Sep/2011	01/Sep/2011	01/Sep/2020	09/Sep/2020

CV014H31UV (Part-Time)

Professional Accreditation Body:  
Institution of Civil Engineers (ICE)

Accrediting Body:  
Institution of Civil Engineers (ICE)

Accreditation Statement:

Accredited by the Institution of Civil Engineers (ICE) on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer.

<b>Approved</b>	<b>Start</b>	<b>Expected End</b>	<b>Renewal</b>
01/Sep/2011	01/Sep/2011	01/Sep/2020	01/Sep/2020

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#### CV014H01UV (Full-time)

Professional Accreditation Body:  
Institution of Structural Engineers (IStructE)

Accrediting Body:  
Institution of Structural Engineers (IStructE)

Accreditation Statement:  
Accredited by the Institution of Structural Engineers (IStructE) on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer.

<b>Approved</b>	<b>Start</b>	<b>Expected End</b>	<b>Renewal</b>
01/Sep/2011	01/Sep/2011	01/Sep/2020	01/Sep/2020

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#### CV014H31UV (Part-Time)

Professional Accreditation Body:  
Institution of Structural Engineers (IStructE)

Accrediting Body:  
Institution of Structural Engineers (IStructE)

Accreditation Statement:  
Accredited by the Institution of Structural Engineers (IStructE) on behalf of the Engineering Council for the purposes of fully meeting the academic requirement for registration as an Incorporated Engineer.

<b>Approved</b>	<b>Start</b>	<b>Expected End</b>	<b>Renewal</b>
01/Sep/2011	01/Sep/2011	01/Sep/2020	01/Sep/2020

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#### Course Structure:

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#### September (Full-Time)

Module	Title	Credits	Period	Type
4CV003	Principles of Design	20	YEAR	Core
4CV010	Mathematics for Technologists	20	YEAR	Core
4CV002	Mechanics of Materials	20	SEM1	Core
4CV005	Professional Skills and Management	20	SEM1	Core
4CV001	Fundamentals of Geotechnics	20	SEM2	Core
4CV009	Site Surveying	20	SEM2	Core
5CN022	Construction Law	20	YEAR	Core
5CV005	Hydraulics	20	YEAR	Core
5CV001	Structural Applications	20	SEM1	Core
5CV003	Transportation Engineering	20	SEM1	Core
5CV006	Land Surveying	20	SEM2	Core
5CV009	Geotechnical Applications	20	SEM2	Core
6CV011	Environmental Engineering	20	YEAR	Core
6CV013	Civil and Transportation Engineering Dissertation	20	YEAR	Core
6CV005	Transport Technologies and Planning	20	SEM1	Core
6CN020	Commercial Management - Civil Engineering	20	SEM1	Core
6CV003	Water Resources and Supply	20	SEM2	Core
6CV008	Civil Engineering Design Project	20	SEM2	Core

## Learning, Teaching and Assessment

### Academic Regulations Exemption:

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None

### Reference Points:

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- The Accreditation of higher Education Programmes, UK Standard for Professional Engineering Competence, Third edition, 2014, (AHEP3).
- Joint Board of Moderators Accreditation Guidance and Documentation.
- Cognisance made of Engineering Council UK-Spec 2014.
- QAA National Qualifications Framework.
- QAA Subject Benchmark Statement for Engineering
- School E&D policy.

### Learning Outcomes:

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CertHE Course Learning Outcome 1 (CHECLO1)

Demonstrate knowledge of the underlying concepts and principles associated with your area(s) of study, and an ability to evaluate and interpret these within the context of that area of study.

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CertHE Course Learning Outcome 2 (CHECLO2)

Demonstrate an ability to present, evaluate and interpret qualitative and quantitative data, in order to develop lines of argument and make sound judgements in accordance with basic theories and concepts of your subject(s) of study.

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CertHE Course Learning Outcome 3 (CHECLO3)

Evaluate the appropriateness of different approaches to solving problems related to your area(s) of study and/or work.

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CertHE Course Learning Outcome 4 (CHECLO4)

Communicate the results of your study/work accurately and reliably, and with structured and coherent arguments.

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CertHE Course Learning Outcome 5 (CHECLO5)

Demonstrate the qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility.

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DipHE Course Learning Outcome 1 (DHECLO1)

Demonstrate knowledge and critical understanding of the well-established principles of your area(s) of study, and of the way in which those principles have developed with an understanding of the limits of your knowledge, and how this influences analyses and interpretations based on that knowledge.

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DipHE Course Learning Outcome 2 (DHECLO2)

Demonstrate the ability to apply underlying concepts and principles outside the context in which they were first studied, including, where appropriate, the application of those principles in an employment context.

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DipHE Course Learning Outcome 3 (DHECLO3)

Demonstrate knowledge of the main methods of enquiry in the subject(s) relevant to the named award, and ability to evaluate critically the appropriateness of different approaches to solving problems in the field of study.

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DipHE Course Learning Outcome 4 (DHECLO4)

Use a range of established techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis.

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DipHE Course Learning Outcome 5 (DHECLO5)

Effectively communicate information, arguments and analysis in a variety of forms to specialist and non-specialist audiences, and deploy key techniques of the discipline effectively.

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DipHE Course Learning Outcome 6 (DHECLO6)

Demonstrate the qualities and transferable skills necessary for employment, requiring the exercise of personal responsibility and decision-making and undertake further training, developing existing skills and acquire new competences that will enable them to assume significant responsibility within organisations.

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Ordinary Degree Course Learning Outcome 1 (ORDCLO1)



Demonstrate substantial knowledge of science and mathematics necessary in order to support the application of key civil engineering principles.

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Ordinary Degree Course Learning Outcome 2 (ORDCLO2)

Display the ability to successfully undertake engineering analysis by applying concepts and tools to the solution of civil and transportation engineering problems.

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Ordinary Degree Course Learning Outcome 3 (ORDCLO3)

Synthesize relevant civil and transportation engineering knowledge and skills for the solution of real problems.

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Ordinary Degree Course Learning Outcome 4 (ORDCLO4)

Manage activities and appreciate various legal and ethical constraints under which a civil, or transportation engineer needs to operate in order to have a positive impact on the environment, on commerce, on society and on individuals.

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Ordinary Degree Course Learning Outcome 5 (ORDCLO5)

Practice engineering by combining theory and experience, supported by other relevant knowledge and skills.

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Ordinary Degree Course Learning Outcome 6 (ORDCLO6)

Demonstrate and develop transferable skills, additional to those set out in specialist civil and transportation engineering subject areas, which are of value in a wide range of situations.

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Honours Degree Course Learning Outcome 1 (DEGCLO1)

Demonstrate substantial knowledge of science and mathematics necessary in order to support the application of key civil engineering principles required by an Incorporated Engineer.

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Honours Degree Course Learning Outcome 2 (DEGCLO2)

Display the ability to successfully undertake engineering analysis by synthesizing concepts and tools in the solution and evaluation of civil and transportation engineering problems.

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Honours Degree Course Learning Outcome 3 (DEGCLO3)

Develop and integrate designs that meet defined needs and realise an economically viable product, process or system by applying civil and transportation engineering knowledge and skills to the solution of real problems.

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Honours Degree Course Learning Outcome 4 (DEGCLO4)

Manage activities and appreciate various legal and ethical constraints under which a civil, or transportation engineer needs to operate in order to have a positive impact on the environment, on commerce, on society and on individuals.

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Honours Degree Course Learning Outcome 5 (DEGCLO5)

Practice engineering by combining theory and experience, supported by other relevant knowledge and skills.

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Honours Degree Course Learning Outcome 6 (DEGCLO6)

Demonstrate and develop transferable skills, additional to those set out in specialist civil and transportation engineering subject areas, which are of value in a wide range of situations.

### Overview of Assessment:

Module	Title	Course Learning Outcomes
4CV001	Fundamentals of Geotechnics	CHECLO1, CHECLO2
4CV002	Mechanics of Materials	CHECLO1
4CV003	Principles of Design	CHECLO1, CHECLO3, CHECLO4
4CV005	Professional Skills and Management	CHECLO4, CHECLO5
4CV009	Site Surveying	CHECLO1, CHECLO2
4CV010	Mathematics for Technologists	CHECLO1
5CN022	Construction Law	DHECLO5
5CN025	Industrial Placement	DHECLO2, DHECLO6
5CV001	Structural Applications	DHECLO1
5CV003	Transportation Engineering	DHECLO1, DHECLO6
5CV005	Hydraulics	DHECLO1, DHECLO4
5CV006	Land Surveying	DHECLO1, DHECLO3
5CV009	Geotechnical Applications	DHECLO1, DHECLO2, DHECLO5
6CN020	Commercial Management - Civil Engineering	DEGCLO4, ORDCLO4
6CV003	Water Resources and Supply	DEGCLO1, DEGCLO2, DEGCLO3, DEGCLO4, DEGCLO5, ORDCLO1, ORDCLO2, ORDCLO3, ORDCLO4, ORDCLO5
6CV005	Transport Technologies and Planning	DEGCLO2, DEGCLO3, ORDCLO2, ORDCLO3
6CV008	Civil Engineering Design Project	DEGCLO2, DEGCLO3, DEGCLO4, DEGCLO5, DEGCLO6, ORDCLO2, ORDCLO3, ORDCLO4, ORDCLO5, ORDCLO6
6CV011	Environmental Engineering	DEGCLO4, ORDCLO4
6CV013	Civil and Transportation Engineering Dissertation	DEGCLO1, DEGCLO2, DEGCLO3, DEGCLO4, DEGCLO5, DEGCLO6, ORDCLO1, ORDCLO2, ORDCLO3, ORDCLO4, ORDCLO5, ORDCLO6

### Teaching, Learning and Assessment:

- Attending, taking notes and asking questions in lectures,
- Using audio-visual learning materials
- Carrying out supervised practical work
- Discussing with fellow students and academic staff in seminars and workshops
- Discussing with academic staff in tutorials
- Reading articles, chapters and books
- Accessing appropriate sites on the internet
- Field trips to towns/cities, visiting buildings and construction sites, observing work in progress
- Interact with industry and industry professionals
- Interaction with the professional body
- Preparing appropriate documentation, to industry standards, including plans, specifications, cost information, based on realistic construction projects

- Performing group exercises and projects
- Making oral presentations
- Preparation of professional standard reports
- Supervised practical work such as surveying and laboratory tests
- Preparing for examinations
- Using computer software for analysis and design
- Problem solving exercises, closed and open ended problems
- Information retrieval from articles, books and journals for assessment
- Critical examination of data
- Engaging in discussion with academic staff and fellow students in seminars, workshops and tutorials.

### Learning and Teaching Methods:

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This data indicates the proportion of time in each year of study that students can expect to engage in the following activities (expressed as a percentage for each level).

Level	Teaching	Independent	Placement
4	58	42	0
5	49	51	0
6	49	51	0

### Assessment Methods:

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This data indicates the proportion of summative assessment in each year of study that will derive from the following: (expressed as a percentage for each level).

Level	Written Exams	Practical Exams	Coursework
4	33	25	42
5	45	0	55
6	8	0	92

### Student Support:

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Enhanced learning support is provided in the following areas:

1. Support for mathematics and analytic based modules
2. Report writing and oral/presentation communications skills
3. Learning centre – literature searches and information searches
4. Practical/lab/experimental activities and reporting
5. Promotion of *independent learning* during tutorials, face-to-face sessions
6. Formative assessment opportunities
7. Face-to-face tutorial sessions.

The University complements this by supporting your learning through the provision of generic study skills including communication and how to write academic assignments.

In addition, there will be opportunities to develop your information seeking and information management skills. These may be in the form of seminars or workshops delivered by LIS staff and embedded into the

curriculum or by following the programme of "InfoBite" workshops available in the Learning Centres.

## Employability in the Curriculum:

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Civil and transportation engineering is all about creating, improving and protecting the built environment. Civil and transportation engineers contribute to the design and build of infrastructure that is sustainable and that provides the facilities for day-to-day life of individuals. They carry out impact assessment and undertake sustainability and feasibility studies to safeguard the sustainability of projects.

There are many significant employment opportunities in civil and transportation engineering with graduates working for contractors, consultants, local authorities, government and public bodies, the armed forces, and academic and research establishments. Civil and transportation engineering also offers opportunities to work both on a national and international basis on a variety of exciting environmental and infrastructure projects. Graduates may wish to continue their studies at Masters or Doctorate level. This may either be in a technical context or a more broadening context such as project management or construction law. The BEng (Hons) Civil and Transportation Engineering provides a sound basis from which to develop a career, and progress to Incorporated Engineer (IEng) with further experience, or Chartered Engineer (CEng) status with appropriate further learning and experience.



THE UNIVERSITY OF OPPORTUNITY