

Course Specification

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Core Information

Awarding Body / Institution:	University of Wolverhampton		
School / Institute:	School of Architecture and Built Environment		
Course Code(s):	CV014T01UV	Full-time	4 Years
	CV014T31UV	Part-time	8 Years
UCAS Code:			
Course Title:	BEng (Hons) Civil and Transportation Engineering with Foundation Year		
Hierarchy of Awards:	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 Foundation and Preparatory Studies Civil and Transportation Engineering University Statement of Credit Civil and Transportation Engineering		
Language of Study:	English		
Date of DAG approval:	01/Sep/2017		
Last Review:	2017/8		
Course Specification valid from:	2017/8		
Course Specification valid to:	2023/4		

Academic Staff

Course Leader:	Dr Stephen Wilkinson
Head of Department:	

Course Information

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

Entry Requirements:

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)

Distinctive Features of the Course:

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:

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:

Major Source of Funding:

Office for Students (OFS)

Tuition Fees:

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
2020/1	H	Full Time / Sandwich	£9250.00
2020/1	Overseas	Full Time / Sandwich	£12250.00
2020/1	H	Part Time	£3050.00
2020/1	Overseas	Part Time	£6125.00
2021/2	H	Full Time / Sandwich	£9250.00
2021/2	Overseas	Full Time / Sandwich	£12950.00
2021/2	H	Part Time	£3100.00
2022/3	H	Full Time / Sandwich	£9250.00
2022/3	Overseas	Full Time / Sandwich	£13450.00
2022/3	H	Part Time	£3120.00
2023/4	H	Full Time / Sandwich	£9250.00
2023/4	Overseas	Full Time / Sandwich	£14450.00

PSRB:

None

Course Structure:

September (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
3CC004	Problem Solving in Science and Technology	20	SEM1	Core
3PY002	Communication and study skills	20	SEM1	Core
3MM003	Foundation Mathematics I	20	SEM1	Core
3CN005	Orientation to Infrastructure and the Built Environment	20	SEM2	Core
3MM004	Foundation Mathematics II	20	SEM2	Core
3ET007	Practical Engineering Science for Electro-Mechanical design	20	SEM2	Core

September (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
4CV003	Principles of Design	20	YEAR	Core
4MA007	Engineering Mathematics	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

September (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
5CN022	Construction Law	20	SEM2	Core
5CV005	Hydraulics	20	SEM1	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

September (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Module	Title	Credits	Period	Type
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

Please note: Optional modules might not run every year, the course team will decide on an annual basis which options will be running, based on student demand and academic factors, to create the best learning experience.

Learning, Teaching and Assessment

Academic Regulations Exemption:

Section 4.4.4 - Exemption in accordance with Professional Body (Engineering Council) requirements. Compensation will be limited to no more than 20 credits overall (at levels 4, 5 and 6) with no additional third attempts (repeats will be allowed).

APPROVED by AFRSC on 16/5/2019.

Section 4.3.3 - Exemption in accordance with the standards of the Professional Body. Students are permitted one additional re-sit attempt only.

APPROVED by AFRSC on 22/4/2021.

Reference Points:

- 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.

Overview of Assessment:

As part of the course approval process, the course learning outcomes were mapped to each of the modules forming the diet of the programme of study. This process confirmed that all course learning outcomes can be met through successful completion of the modules. This mapping applies to the final award as well as to all of the intermediate awards.

Learning Outcomes	Modules
CERTHE01 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.	
CERTHE02 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.	
CERTHE03 Evaluate the appropriateness of different approaches to solving problems related to your area(s) of study and/or work.	
CERTHE04 Communicate the results of your study/work accurately and reliably, and with structured and coherent arguments.	
CERTHE05 Demonstrate the qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility.	
BHONS01 Demonstrate substantial knowledge of science and mathematics necessary in order to support the application of key civil engineering principles required by an Incorporated Engineer.	
BHONS02 Display the ability to successfully undertake engineering analysis by synthesizing concepts and tools in the solution and evaluation of civil and transportation engineering problems.	

Learning Outcomes**Modules**

BHONS03 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.

BHONS04 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.

BHONS05 Practice engineering by combining theory and experience, supported by other relevant knowledge and skills.

BHONS06 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.

DIPHE01 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.

DIPHE02 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.

DIPHE03 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.

DIPHE04 Use a range of established techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis.

DIPHE05 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.

DIPHE06 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.

BHONSN01 Demonstrate substantial knowledge of science and mathematics necessary in order to support the application of key civil engineering principles.

BHONSN02 Display the ability to successfully undertake engineering analysis by applying concepts and tools to the solution of civil and transportation engineering problems.

BHONSN03 Synthesize relevant civil and transportation engineering knowledge and skills for the solution of real problems.

BHONSN04 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.

BHONSN05 Practice engineering by combining theory and

experience, supported by other relevant knowledge and skills.

Learning Outcomes

BHONSN06 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.

UGCRED01 Solve real world problems using mathematical and statistical techniques.

UGCRED02 Communicate scientifically using oral and written skills to provide information to a variety of audiences.

UGCRED03 Demonstrate and apply problem solving skills to a range of scientific and technological scenarios.

UGCRED04 Demonstrate and apply knowledge of a range of scientific and technological subjects.

UGCRED05 Demonstrate personal development in terms of career choice.

Modules

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.

Assessment Methods:

At the University of Wolverhampton, a variety of modes of assessment will be used to support and test your learning and progress and to help you develop capabilities that are valued beyond your University studies and into your working life. Your course may include a variety of assessment activities:

Written examinations (including online examinations, open and closed book examinations and quizzes)

Coursework (for example, essays, reports, portfolios, project proposals and briefs, CVs, poster presentation)

Practical (for example, oral and video presentations, laboratory work, performances, practical skills assessment)

In the final year of your undergraduate degree, and at the end of your postgraduate degree, you are likely to be expected to write an extended piece of work or research, such as a dissertation or a practice-based piece of research.

Student Support:

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. Library – 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 Libraries.

Employability in the Curriculum:

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.

