



Module Specification

Infrastructure Design and Implementation Project

Version: 2024-25, v3.0, 30 Jul 2024

Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	5
Part 4: Assessment.....	7
Part 5: Contributes towards	10

Part 1: Information

Module title: Infrastructure Design and Implementation Project

Module code: UBGLY9-15-3

Level: Level 6

For implementation from: 2024-25

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Arts, Technology and Environment

School: CATE School of Engineering

Partner institutions: None

Field: Engineering, Design and Mathematics

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: In addition to the learning outcomes, the following transferable skills developed through the module will include:

Self-directed learning and time management

Use of an academic library

Ability to construct concise arguments and defend them

Writing in professional and academic styles to a high standard

Undertaking an area and site appraisal

Outline syllabus: This module involves students working collaboratively to develop infrastructure proposals for a concept scheme at a specified development site. Working in teams, students will be presented with a brief that they will need to interpret, and where necessary challenge, in order to develop a programme of integrated activity. The brief will be realistic in its design and will seek to encourage collaboration with external partners. Students will need to investigate the context surrounding both the client and the brief and undertake a detailed assessment of the development site and surrounding area to identify key constraints and opportunities. Options for responding to the brief will need to be developed by each team, with more detailed work being applied progressively after the identification of alternatives/scenarios and the eventual selection of one or two preferred options.

As noted below, key elements of the module will be delivered via mix of keynote lectures, workshops and tutorials. Although these elements will be developed to respond to the specificities of the project and its location, an indicative syllabus would comprise:

The nature of infrastructure

Introducing the design problem: project and site (combined with a field visit)

Infrastructure planning and delivery

Goals of the design process

Actors of the design process

Developing and refining options

Negotiation and conflict resolution

Assessing the costs and benefits of a project

Delivering plans and projects: theoretical considerations

Delivering plans and projects: financial considerations

Mechanisms for implementation: delivery vehicles and partnerships Organisations and the integration of funds and policy

Implementation and the role for marketing and communications

Implementation and the role of leadership

International reflections on implementation

Specific workshops or demonstrations will be convened to respond to the specific needs and considerations of the students in developing their project.

In developing their projects, students will need to research relevant precedents and be mindful of the uncertainties and complexities associated with the multitude of factors making up the design brief. It will also be necessary for them to gather relevant information on environmental, engineering and planning issues, as well as intelligence on material suppliers and the range of collaborators, specialists and other contractors that would be needed to deliver the project. They will also need to have regard to client requirements, site and environmental considerations, costings and viability, health and safety matters, technical site design factors, and the relevance and suitability of available design and construction technologies. It will

also be important for ideas and proposals to be suitably future-proofed to adapt and respond to climatic and environmental change and positively contribute towards sustainable design and construction. Taking this context aside, students will also be encouraged to think 'outside of the box' and apply both flair and imagination to their thinking.

Students will need to work collaboratively in their teams but will need to provide leadership in their own areas of expertise. Each team member will need to contribute to the thinking of the team and ultimately help in the presentation and defence of the proposed solution (s).

A key part of the module will be to consider the factors that will be necessary if the project (and, in most cases, the associated policy) is to be successfully delivered and implemented on the ground. This element of the module will look at the views concerning effective implementation as well as the challenges associated with the delivery of a development (infrastructure) project.

The module also considers the governance arrangements that influence implementation and the need to identify and engage with appropriate actors and stakeholders. Students will need to examine the integration and synergy between different policy and funding strands and consider the type of strategy for building appropriate public and political support.

The module will inevitably identify the skills that will be necessary for designing, appraising, negotiating and delivering an appropriate project response. The various themes that will be discussed include; principles of project management, strategic management, roles and skills of a project manager, project planning, negotiation and use of case studies etc.

Part 3: Teaching and learning methods

Teaching and learning methods: On average students will receive 3 hours of contact time per week. This will be in a range of formats, including lectures,

laboratory practicals, field work, tutorial or computer-based sessions, formative feedback sessions and support via e-mail/video.

The module will be delivered as a studio and will require accommodation that allows for group interaction and synthesising and testing group ideas. This will typically be structured as an initial 1 hour lecture followed by 2 hours of tutorial support in project or specialism groups, and a further hour of independent group work.

The amount of time spent on activities in this module is shown below:

Contact time: 33hrs

Assimilation and development of knowledge: 87hrs

Assessment: 30hrs

Total: 150hrs

Scheduled learning via a mix of lectures, seminars and workshop activities.

Independent learning includes essential reading, assessment preparation and completion. Independently managed group based learning will also be required.

Process of learning

Students will be tutored through a mix of lectures, group and individual tutorials and laboratories. Design briefs and site locations will be set to ensure an appropriate level of complexity enabling the exploration of both concept alternatives and a detailed design challenge. Alternative concept designs will be developed and evaluated (self, and through formative feedback) leading to the recommendation of one to be investigated further. This will include a site appraisal and an outline of the technology to be adopted as well as consideration of health and safety, cost of the production process and the economic, social and environmental costs of implementing the project.

Students will be expected to conclude with a reflection and critical evaluation of the choice of concept design and its progress through the whole design process. This reflection will need to be included as part of the design file (report).

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Explain and describe the roles and responsibilities of key professions, institutions and regulatory bodies at various stages of the design process

MO2 Interpret a design brief to clarify project objectives and site context

MO3 Propose possible conceptual solutions supported by the collection, and analysis of relevant data and information

MO4 Advise on the appropriateness of options in line with policy and legislative requirements and develop detailed plans, using appropriate software, to inform, justify and evaluate development decisions

MO5 Provide critical reflection on the contextual factors associated with the delivery and implementation of policy and projects by drawing from relevant theory

MO6 Analyse implementation activity from a variety of perspectives, including the external controls and restraints that shape development, and advise on the tools and practices for ensuring delivery

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 117 hours

Face-to-face learning = 33 hours

Total = 0

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ubgly9-15-3.html) via the following link <https://uwe.rl.talis.com/modules/ubgly9-15-3.html>

Part 4: Assessment

Assessment strategy: The assessment strategy has been developed to create a continuous journey of learning, with weekly sessions providing a direct contribution

to the project report and presentation required by the end of the module. Students will be supported along the way, with the lectures, seminars and workshops designed to inform the process. The assessment will effectively design-out plagiarism on the basis that the project will be different each year and on the basis that the response of each group will be inevitably different.

The assessment comprises two parts, a group presentation and an individual report/design file. Both are linked to the same project. Students will work collaboratively in groups to develop a final presentation, with this work being informed by an individual design file that each student needs to develop. These individual submissions will reflect individual expertise and experience.

Task 1 Group presentation: Design Defence of Final Design Proposal

Presentation of a group response to the project brief with details to include site and area analysis, option design and testing, a recommended design proposal, concept drawings/sketches, and consideration of delivery/implementation factors. The presentation will set out and defend choices made by the group. Each presentation group will be a pass or fail, although mechanisms will be provided to ensure the contribution of each student is considered. The presentation will satisfy learning outcomes 1- 6

Task 2 Design File (Individual Report).

The report (design file) focuses on one complex element of the design project and requires a bespoke investigation undertaken by each student. It will have an equivalent length of 3,000 words. The investigation will respond to the learning outcomes stated above and the skills, experiences and requirements surrounding the student's academic programme. The report will contain interpretation and analysis and commentary on research, data, calculations, proposed solutions, drawings specifications and work programmes appropriate to the project. Learning outcomes 1-6.

Review sessions will be scheduled to help the students prepare for their

assessment, with opportunities being offered for presentation and report material to be commented on.

Resit

The Resit will involve an individual presentation for Task 1, and an individual report for Task 2.

Assessment tasks:

Report (First Sit)

Description: Report: (3000 words) design file with commentary

Weighting: 100 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Presentation (First Sit)

Description: Group presentation: design defence (final) 10 minute contribution per team member, including a response to questions

Weighting:

Final assessment: Yes

Group work: Yes

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Report (Resit)

Description: Report: (3000 words) design file with commentary

Weighting: 100 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Presentation (Resit)

Description: Individual presentation (10 minutes including questions) relating to the design work undertaken through the first sit.

Weighting:

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Energy Technology and Management {Foundation} [Oct][FT][GCET][4yrs] BSc (Hons) 2021-22

Energy Technology and Management {Foundation} [Feb][FT][GCET][4yrs] BSc (Hons) 2021-22

Energy Technology and Management {Foundation} [Oct][FT][GCET][4yrs] BSc (Hons) 2021-22

Energy Technology and Management {Foundation} [Feb][FT][GCET][4yrs] BSc (Hons) 2021-22

Civil and Environmental Engineering {Foundation} [Sep][SW][Frenchay][5yrs] - Not Running BEng (Hons) 2020-21

Civil Engineering {Foundation} [Sep][SW][Frenchay][5yrs] BEng (Hons) 2020-21

Urban Planning {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2020-21

Civil Engineering {Apprenticeship-UWE} [Sep][FT][Frenchay][5yrs] BEng (Hons) 2021-22

Civil Engineering [Sep][PT][Frenchay][7yrs] MEng 2021-22

Civil Engineering [Sep][SW][Frenchay][5yrs] MEng 2021-22

Urban Planning [Sep][SW][Frenchay][4yrs] BSc (Hons) 2021-22

Civil and Environmental Engineering [Sep][SW][Frenchay][4yrs] - Not Running BEng (Hons) 2021-22

Civil and Environmental Engineering [Sep][PT][Frenchay][5yrs] - Not Running BEng (Hons) 2021-22

Civil and Environmental Engineering {Foundation} [Sep][FT][Frenchay][4yrs] - Not Running BEng (Hons) 2021-22

Civil Engineering [Sep][SW][Frenchay][4yrs] BEng (Hons) 2021-22

Civil Engineering [Sep][PT][Frenchay][5yrs] BEng (Hons) 2021-22

Civil Engineering {Foundation} [Sep][FT][Frenchay][4yrs] BEng (Hons) 2021-22

Urban Planning {Foundation} [Sep][FT][Frenchay][4yrs] - Withdrawn BSc (Hons) 2021-22

Civil and Environmental Engineering [Sep][FT][Frenchay][3yrs] - Not Running BEng (Hons) 2022-23

Urban Planning [Frenchay] BSc (Hons) 2022-23

Civil Engineering [Frenchay] BEng (Hons) 2022-23

Civil Engineering [Frenchay] MEng 2022-23