

Module Specifications

Year/Level: 6
Programme: Civil Engineering

Module: Individual BEng Project (Civil)

Module Code: 6FTC2205

Credits: 30

Module Description:

Mandatory

The module aims to provide the framework for a student to gain the experience of managing a major piece of project work in a professional manner in a specialist subject area in engineering.
Students will deliver a solution to a potential customer/supervisor as realistically as possible in an academic context whilst also considering the impact of their solution to the wider society.

Module: Geotechnical Design

Module Code: 6FTC2206

Credits: 15

Module Description:

Mandatory

This module aims to explore the design of geotechnical structures including foundations and retaining walls taking into account the ground conditions that may influence their safe design, analyse the causes and mechanisms of failure and evaluate suitable methods of construction.

Module: ** Highway and Traffic

Module Code: 6FTC2209

Credits: 15

Module Description:

Optional

This module aims to enable students to appreciate the constraints and evaluate the design challenges in creating sustainable highway and transportation infrastructure, as well as explore the planning procedure for safe road layouts using current design standards.
Additionally, this module aims to enable students to appraise the design procedures for a pavement structure.

Module: ** Civil Engineering Design

Module Code: 6FTC2210

Credits: 15

Module Description:

Optional

This module aims to enable students to analyse and design circular and rectangular water tanks and various reinforcement schemes. It also aims to enable students to develop knowledge and skills in topics such as strength, behaviour, and design of prestressed concrete members, and bridges, with emphasis on pre-tensioned, precast construction, and post-tensioned construction. Additionally, this module aims to provide a foundation for the design of various parts of roadway/railway bridges made of steel, concrete, and use the local codes of practice. Implement analysis and design software and provide professional construction details.

Module: ** Sanitary Engineering

Module Code: 6FTC2208

Credits: 15

Module Description:

Optional

- Analyse and design the drinking water treatment process and plants, water supply and distribution systems.
- Develop their understanding of major biological, physical, and chemical unit process operations within water/ wastewater treatment plants and the design basis for the unit operations and unit processes in water and wastewater engineering.
- Gain a foundation for the rational design of treatment and control systems used in water and wastewater engineering considering environmental factors.

Module: Advanced Structural Analysis and

Module Code: 6FTC2207

Credits: 15

Module Description:

Mandatory

This module aims to enable students to appreciate the behaviour of structural systems and load transfer mechanisms. This module also aims to enable students to explore the effect of environmental forces acting on structures. Additionally, it aims to enable students to appraise the use of analytical techniques and/or computational software for analysis of structural systems.

Module:	Sustainable Engineering
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Module Code:	6FTC2211
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Credits:	15
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Module Description:

Mandatory

This module aims to enable students to explore the sustainable solutions to civil engineering problems. The module also aims to enable students to appreciate the importance of incorporating sustainability in design of civil engineering projects. Additionally, it aims to enable students to appraise analytical tools to calculate energy and carbon footprint in buildings and structures.

Module:	Industry Group Design Project
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Module Code:	6FTC2212
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Credits:	30
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Module Description:

Mandatory

This module aims to enable students to explore the process of developing a sustainable design to address a complex civil engineering problem. Additionally, it aims to enable students to appreciate the importance of a professional attitude and critical approach to the application of engineering knowledge, skills, emerging technology and analysis tools in design.