

Module Details	
Module Title	Advanced Steel And Concrete Design
Module Code	CSE6011-B
Academic Year	2022/3
Credits	20
School	Department of Civil and Structural Engineering
FHEQ Level	FHEQ Level 6

Contact Hours	
Type	Hours
Lectures	36
Tutorials	4
Directed Study	156

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Academic Year

Module Aims
To introduce advanced principles/ concept for design and analysis of steel and concrete structures and their constructability. To understanding the modes of failure in structures and how to design against the risks. To enrich student's creativity and ability to design structures in steel and concrete.

Outline Syllabus
1. Design steel framed buildings for robustness and sway stability; understanding the modes of failure and how to design against risks; 2. Design of multi-storey unbraced steel framed structures and joints; 3. Design of steel-concrete composite structures; 4. Design of reinforced concrete flat slabs; 5. Design of prestressed concrete elements; 6. Design of slender reinforced concrete columns

Learning Outcomes	
Outcome Number	Description
01	Able to apply their prior knowledge and understanding of the scientific and mathematical principles of engineering to the design of steel, concrete and composite structures
02	Have an appreciation of the fundamental design philosophies adopted in the area of steel and concrete structures;
03	Able to apply mathematical and computer-based models for solving problems in structural engineering and be able to assess the limitations of each particular case;
04	Aware of the latest research and developing technologies related to the design of steel, concrete and composite structures;
05	Acquire advanced knowledge and understanding of a specialised area of knowledge and skills (in the context of advanced steel & concrete design) via directed independent study identified by lecturers.

Learning, Teaching and Assessment Strategy
The concepts, principles and theories related to advanced steel and concrete design are given in interactive lectures with worked examples. In terms of directed study, students are encouraged to study the lecture note and solve the tutorial sheet given and the end of each topic and submitted the tutorial sheet for formative feedback. The module is assessed through 2 exams which take place at the end of semester 1 and semester 2.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Examination - Closed Book	Closed book examination (Sem 1) (2 Hrs)	50%
Summative	Examination - Closed Book	Closed Book examination (Sem 2) (2 Hrs)	50%

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.