ES4D5-15 Construction Management

21/22

Department
School of Engineering
Level
Undergraduate Level 4
Module leader
Alireza Rezaei
Credit value
15
Module duration
15 weeks
Assessment
100% coursework
Study location
University of Warwick main campus, Coventry

Description

Introductory description

ES4D5-15 Construction Managment

Module web page

Module aims

The module aims are providing the students with grounding in construction management of building and civil engineering works. The module shall prepare students for working in the construction industry through an understanding of the important interactions between construction processes, strategic and business management. Students shall be able to apply this understanding to achieve safe, economic, timely and quality outcomes over the life cycle of a project.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

o Introduction to Construction Business and Project Management
o Construction Management Roles and Responsibilities

o Obtaining the project
Bids (Pre-qualification and Tendering; Estimating)
Selection methods
Contracts (standard forms of contract; construction law and resolving disputes)
o Project stages
Design (planning approval; stages of design, RIBA; Design Management BS 7000-4; site investigation)
Pre-construction
Procurement
Construction (project management; contract administration; billing; getting paid; cost management; time management, quality management; safety management; environmental management)
o Time management, cost management, and resources management.
o Sustainability in Construction
o Building Information Modelling (BIM)
Requirements
BIM maturity levels
o Site Design and Operation
Health and Safety in Design and Construction, CDM Regulations
Site Waste Management Plans
Site Organisation

Learning outcomes

By the end of the module, students should be able to:

- o Identify, use and critically analyse the range of processes involved in design, construction and post construction of civil engineering projects.
- o Identify and interpret forms of contract and documents associated with a typical construction project.
- o Demonstrate an advanced understanding and critical awareness of team collaboration and building information modelling and management in civil engineering projects.
- o Demonstrate systematic knowledge and critical awareness of the process of strategy formation and implementation in the construction business and project environment.
- o Creatively apply and evaluate aspects of construction management and planning based on standard codes of practice.
- o Demonstrate effective communication, both verbal and written, to a technical and non-technical audience.

Indicative reading list

CIOB (2014), Code of Practice for Project Management for Construction and Development, Wiley Blackwell, 5th ed., ISBN: 978-1-118-37808-3
Harris F., Ronald McCaffer , Francis Edum-Fotwe (2013) Modern Construction Management, Wiley Blackwell, 7th ed. ISBN-10: 047067217X, ISBN-13: 978-0470672174
Powell, G. (2016) Construction Contract Preparation and Management: From Concept to Completion. UK: Palgrave Macmillan, ISBN-13: 978-1-137-51114-0
Chuck Eastman, Paul Teicholz, Rafael Sacks, Kathleen Liston (2011) BIM Handbook: A Guide to

Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors, 2nd Edition ISBN: 978-0-470-54137-1
March, C.,(2009), Operations Management for Construction, Taylor & Francis, ISBN-10: 0415371139, ISBN-13: 978-0415371131

Subject specific skills

- Ability to conceive, make and realise a component, product, system or process
- Ability to develop economically viable and ethically sound sustainable solutions
- Ability to be pragmatic, taking a systematic approach and the logical and practical steps necessary for, often complex, concepts to become reality
- Ability to seek to achieve sustainable solutions to problems and have strategies for being creative and innovative
- Ability to be risk, cost and value-conscious, and aware of their ethical, social, cultural, environmental, health and safety, and wider professional engineering responsibilities

Transferable skills

- Numeracy: apply mathematical and computational methods to communicate parameters, model and optimize solutions
- Apply problem solving skills, information retrieval, and the effective use of general IT facilities
- Communicate (written and oral; to technical and non-technical audiences) and work with others
- Plan self-learning and improve performance, as the foundation for lifelong learning/CPD
- Exercise initiative and personal responsibility, including time management, which may be as a team member or leader
- Awareness of the nature of business and enterprise in the creation of economic and social value
- Overcome difficulties by employing skills, knowledge and understanding in a flexible manner
- Ability to formulate and operate within appropriate codes of conduct, when faced with an ethical issue
- Appreciation of the global dimensions of engineering, commerce and communication
- Be professional in their outlook, be capable of team working, be effective communicators, and be able to exercise responsibility and sound management approaches.

Study

Study time

Type	Required
Lectures	25 sessions of 1 hour (17%)
Seminars	2 sessions of 1 hour (1%)
Practical classes	2 sessions of 8 hours (11%)
Total	150 hours

Type	Required
External visits	1 session of 2 hours (1%)
Other activity	2 hours (1%)
Private study	103 hours (69%)
Total	150 hours

Private study description

103 hours of guided independent learning

Other activity description

2 hrs of revision class

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Students can register for this module without taking any assessment.

Assessment group A

	Weighting	Study time
Group oral presentation Group oral presentation (including peer assessment)	20%	
Simulation and in-class quiz during workshop In class quiz during workshop	20%	
WRITTEN ASSIGNMENT ASSIGNMENT	60%	

Feedback on assessment

Individual & Group feedback will be given on the assignments together with general feedback. Formative feedback on surveying tasks will be delivered during the fieldwork. Past examination papers and model solutions will be published to students.

Availability

Courses

This module is Core for:

- Year 4 of UESA-H217 MEng Civil Engineering
- Year 4 of UESA-H219 MEng Civil Engineering with Exchange Year
- Year 5 of UESA-H218 MEng Civil Engineering with Intercalated Year

This module is Option list A for:

- Year 4 of UESA-H114 MEng Engineering
- Year 4 of UESA-H311 MEng Mechanical Engineering