

COURSE DESCRIPTOR 2021/22

CL305 Construction Project Management

Course Registrar: Dr Mike Murray	Taught To (Programme): Civil Engineering Civil and Environmental Engineering	
Other Lecturers Involved:	Credit Weighting:10	Semester: 2
Assumed Pre-requisites: None	Compulsory	Academic Level: 3

Course Format and Delivery (hours):

Lecture	Tutorial	Laboratory	Coursework	Project	Private Study	Total
22	6	0	32		40	100

Course Aim(s)

This course aims to provide an introduction to:

- The principles of project management within civil engineering projects.
- Tendering, Budgeting and Cost Control.
- Personal & Professional Development & Reflective Practice

Learning Outcomes

On completion of the module the student is expected to be able to:

LO.1 **Debate** & **appraise** theories and practice related to civil engineering project management.

LO.2 **Describe** & **explain** financial planning & cost control issues related to civil engineering projects.

LO.3 Undertake **planning**, **formulate** personal learning objectives and **evaluate** these in relation to the mentoring experience and the 9 ICE Attributes.

Syllabus

The planning process.

Clients & the Briefing Process.

An Introduction to Tendering, contract budgets, payments & cash flow

Site organisation and scheduling; Gantt charts to 4D planning.

Critical path analysis

Uncertainty in the planning process.

Resource allocation & logistics management.

Health & Safety Management.

Risk Management.

Quality Management.

Procurements & Contract Documents: ICE /NEC3/ JCT

Environmental issues: Design & Construction.

Personal Development Planning/ Initial Professional Development & Continuing Professional Development

ICE Attributes

Careers (employers) / skills / knowledge / aptitude/Reflective Writing

Thread	Primary	Secondary	Contributory
Design		LO.1	
Health, Safety & Risk Assessment	LO.1		
Sustainability	LO.1		
Maths for Engineers			
Industry	LO.1 & LO.2 & LO.3		
Professional Skills	LO.3		

Assessment Criteria

Criteria

LO.1 Understand and apply the principals of project management in engineering project.

C1 Demonstrate a professional engineers understanding of health& safety / environmental / commercial risk, related to organizations & projects

C2 Demonstrate a professional engineers understanding of contract / procurement / quality management, environmental management, related to organizations & projects.

LO.2 Understand economic principles underlying strategic decisions.

C1 An ability to understand the relationship between cash flow –liquidity-operating profit-gearing

C2 An ability to understand the tendering procedures employed by contractors-related to successful award of contracts.

LO.3 Understand the process of Personal Development Planning (PDP) and its relationship to Initial Professional Development (IPD)-Continued Professional Development (CPD) and the 9 ICE Attributes.

C1 Develop a reflective and self-critical awareness to assist the identification of knowledge / skills gaps and shown evidence of action planning to secure new knowledge & skills.

C2 Discuss and critique prior learning from previous studies and activities in relation to new professional knowledge related to the mentoring experience.

Principles of Assessment & Feedback:

PRINCIPLE 1. ASSESSMENT AND FEEDBACK PRACTICES PROMOTE EFFECTIVE STUDENT LEARNING:

All three coursework assessments are “assessments for learning” rather than assessments of learning and assessment no. 2 is a self-directed group (team) project whereby the learning goals and evaluation methods are developed by the students and encapsulated in a team learning contract. The assessment approach adopted requires the students to view learning as a continuous and reflective (particularly assessment 3, mentoring) practice whereby they are empowered to map the learning landscape and their speed of travel through the module. Collaborative learning is required in assessment no.1 (Book reading team Jigsaw, a flipped classroom) and assessment no.2 (Constructionarium project manual) and perceptions of peer dialogue and teamwork (self and peers) is incorporated in the assessment requirements. All three assessments provide an opportunity for “authentic learning” in association with industry participation. Feedback from previous cohorts suggests that these activities provide students with an opportunity to form their “identity” as an engineer through learning to “become” and to relate theory to practice in a real engineering context.

PRINCIPLE 2. ASSESSMENT AND FEEDBACK PRACTICES ARE APPROPRIATE, FAIR, AND TRANSPARENT:

All three coursework assessments provide students with an opportunity to acquire knowledge and develop skills that are aligned to them taking on an identity as a professional civil engineer. The nature of the coursework assessments (Afl) encourages an emergent development of new knowledge rather than the recollection of learning that has been dispensed by the tutor. Nonetheless, the assessment criteria are clearly defined to students and exemplars are used to demonstrate the variance of standards across the marking range. Provision is made to assist students who require assistance with assessment (e.g. dyslexia) where the student has notified the department disability coordinator.

PRINCIPLE 3. ASSESSMENT AND FEEDBACK PRACTICES ARE CLEARLY COMMUNICATED TO STUDENTS AND STAFF:

Students are informed verbally and in writing (including My Place) that the three coursework’s are “assessments for learning” rather than assessments of learning and as such will require them to consider prior learning and to have an active part in their knowledge construction. The coursework assessments encourage peer learning and whilst not explicitly requiring peer assessment, they do promote a cooperative learning space where questioning and discussion between students/ between students and academics, and between students & professional engineers, is fostered. The criteria and standards used to assess the student coursework’s are communicated to students before each assessment is given out.

PRINCIPLE 4. ASSESSMENT AND FEEDBACK PRACTICES ARE CONTINUOUSLY REVIEWED: The LO’s and subsequent assessment subjects are synthesised from guidance provided by the Engineering Council; the Joint Board of Moderators and two of the Professional Institutions- ICE & IStructE, vis-à-vis the 9 Professional Attributes for (ICE) and the Development Objectives (IStructE). The assessment also provide an opportunity for students to consider the UOS graduate attributes related to an international outlook and ethical behaviour.

Assessment no.1 (Book reading team Jigsaw, a flipped classroom) has been developed through reflecting on student feedback from an ongoing department book club and compulsory book reading initiative. The “jigsaw” approach is a direct result of the module registrar’s participation in personal CPD (PG Certificate learning and teaching in HE).

Recommended Reading

Civil Engineering Project Management Practice

- ICE. (2020) *Civil Engineering Procedure*. 8th Edit, ICE, Thomas Telford.
- Neale, R.H, Neale, D. E, Paul Stephenson, P. (2016) *Construction Planning (Engineering Management Series)* ICE Publishing.
- Sherratt, F. (2015) *Introduction to Construction Management*. London. Routledge.

Personal & Professional Development

- ICE .(2020) Member Attributes, <https://www.ice.org.uk/my-ice/membership-documents/member-attributes>
- Waterhouse, P. (2018) *Initial Professional Development for Civil Engineers*, 2nd Edition Thomas Telford.

Reflective Practice

- **University of Hull- Overview of reflective writing-** <https://libguides.hull.ac.uk/reflectivewriting/vsummary>
- **University of Melbourne-** <https://students.unimelb.edu.au/academic-skills/explore-our-resources/developing-an-academic-writing-style/reflective-writing>
- **University of Sussex-Reflective Writing-** <http://www.sussex.ac.uk/skillshub/?id=476>

Journals

- *New Civil Engineer* (NCE) Weekly Magazine of Institution of Civil Engineers. (Join as Student Member).
- *The Structural Engineer (IStructE)*-available via library electronic journal
- *Proceedings of the Institution of Civil Engineers-Civil Engineering*
- *Proceedings of the Institution of Civil Engineers- Management, Procurement & Law*
- *Proceedings of the Institution of Civil Engineers-Engineering Sustainability*
- *Arup Journal*- http://www.arup.com/publications/periodicals/the_arup_journal.aspx

Video resources available on Estream:(full list will be sent by email)

Approved

Programme Director Signature:

Date of Last Modifications: 28/08/2021

Class Code	CL305	Class Title	Construction Project Management
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Brief Description of Assessment

MM1: Themed Report Thursday 17th February 2022 @ 22.00hrs
MM3 : Rich Picture Thursday 3rd March 2022 @ 22.00hrs
MM4 : Mentor Presentation Grades Thursday 24th March 2022 22.00hrs
MM3: Reflective Mentoring Report (including reflection on Jigsaw / Rich Picture / Mentor Presentation) Friday 1st April 2022 @ 22.00hrs

Semester 2

Assessment type (& title)	LOs	Weight (%)	Individual / Group	WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9	WK10	WK11
Themed Report	1,2,3	30%	Individual & Group					Assignment 1: Hand-in (MM1)						
Rich Picture	1,2,3	20%	Individual & Group							Assignment 2: Hand-in (MM2)				
Presentation to Mentor	1,2,3	10%	Individual										Assignment 2: Hand-in (MM2)	
Mentoring Reflective Report	1,2,3	40%	Individual											Assignment 3: Hand-in (MM3)

Resit Arrangements

PLEASE NOTE:
 Students need to gain a summative mark of 40% to pass the module. Students who fail the module at the first attempt will be re-examined during the August diet. This re-examination will consist entirely of coursework.