

COURSE DESCRIPTOR 2019/20

CL437 Project Analysis

Course Registrar: Dr Mike Murray	Taught To (Programme): Civil Engineering Civil and Environmental Engineering	
Other Lecturers Involved: None	Credit Weighting: 10	Semester: 2
Assumed Pre-requisites: None	Elective course	Academic Level:4

Course Format and Delivery (hours):

Lecture	Tutorial	Laboratory	Coursework	Project	Private Study	Total
20	6	0	24		50	100

Course Aim(s)

This module aims to introduce students to the macro aspects of project planning, management and operation of projects. The social, legal, ethical, economic, environmental, aesthetic, and political dimensions of civil engineering projects are examined as a means to determine the efficiency & effectiveness of civil engineering projects.

Learning Outcomes

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

- LO.1: Undertake an **analysis** of the issues that provide constraints / opportunities to increase the efficiency & effectiveness of civil engineering projects.
- LO.2: **Diagnose** their learning needs from problematizing industry case studies.
- LO.3: **Formulate** learning goals and take action to address their learning needs.
- LO.4: **Evaluate** their own learning and that of their peers based on a collaborative learning task.

Syllabus

The course will involve learning related to:

- Optimism bias & risk management in large civil engineering projects.
- Legal & contractual issues in civil & building projects.
- Project stakeholder management (External).
- The Civil Engineers / Professional Institutions role in Politics-Shaping the demand for services.
- Corporate Social Responsibility (CSR) & Ethical Practice.
- Celebrating civil engineering, Place, People & Projects.
- Aesthetics and art in civil engineering practice.

Assessment Criteria

Criteria

LO1 Critically analyse civil engineering practice related to project management practice.

C1 Identify strategic challenges & opportunities facing civil engineering practice.

C2 Contrast definitions of project efficiency and effectiveness based on multiple project stakeholders.

LO2 Develop & demonstrate a professional curiosity through the identification of personal gaps in knowledge.

C1 Synthesise two macro issues in civil engineering practice based on cited references.

C2 Identify personal gaps in prior knowledge related to the issues in C1.

LO3 Establish an action plan for securing new knowledge.

C1. Identify & record actions for “self” and for “group”.

C2 Establish a set of personal SMART objectives.

LO4 Develop a professional propensity for reflective practice during and after learning episodes.

C1 Understand the reasons for engaging in meta cognition and capturing learning practice.

C2 Document reflections on “self” and “group” learning (explicit & tacit) and critically evaluate the SMART objectives.

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. The assessment approach adopted requires the students to view learning as a continuous and reflective practice whereby they are empowered to map the learning landscape and their speed of travel through the module. Collaborative peer learning is required in assignments no.1. Assignment no. 2 provides a high degree of scope for the students to select topics that are of relevance to them.

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 professional 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.

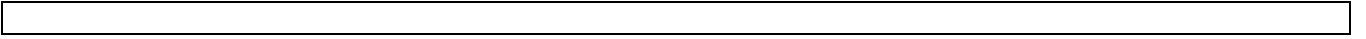
PRINCIPLE 3. ASSESSMENT AND FEEDBACK PRACTICES ARE CLEARLY COMMUNICATED TO STUDENTS AND STAFF:

Students are informed verbally and in writing (including MyPlace) that 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, and between students and academics, 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

Reading:

Audit Scotland (2008) Review of Major Capital Projects in Scotland; How Government Works, http://www.audit-scotland.gov.uk/docs/central/2008/nr_080624_major_capital_projects_km.pdf

Audit Scotland (2011) Edinburgh Tram Interim Report, http://www.audit-scotland.gov.uk/utilities/search_report.php?id=1562

Cossons, N (2012) Does the engineering heritage matter? *Proceedings of the Institution of Civil Engineers Engineering History and Heritage* 165 (4):211-219, doi.org/10.1680/ehah.11.00023

Chinyio, E and Olomolaiye, P (2009) *Construction Stakeholder Management*, Wiley-Blackwell

Dundee City Council (2015a) Review of the Construction Project for the Victoria and Albert Museum of Design by John F. McClelland. Policy & Resources Committee, 24th August 2015. <http://www.dundee.gov.uk/reports/reports/296-2015.pdf>

Gassman, A. (2005) Helping Politico-Engineers off the Endangered Species List, *Journal of Professional Issues in Engineering Education and Practice*, ASCE, 98-100.

Hughes, W, Champion, R & Murdoch, R (2015) *Construction Contracts*, 5th Edit, Routledge.

Flyvbjerg, B, Bruzelius, N and Rothengater, W (2003) *Megaprojects and Risk: An Anatomy of Ambition*, Cambridge, Cambridge University Press.

Human Rights Watch (2012) Building a Better World Cup, Protecting Migrant Workers in Qatar Ahead of FIFA 2022, <http://www.hrw.org/reports/2012/06/12/building-better-world-cup-0> (accessed 20/02/2015).

Miller, R and Lessard, D.R (2000) *The Strategic Management of Large Engineering Projects: Shaping Institutions, Risks, and Governance*, Massachusetts, MIT.

Mott MacDonald (2002) Review of Large Public Procurement in the UK, http://www.parliament.vic.gov.au/images/stories/committees/paec/2010-11_Budget_Estimates/Extra_bits/Mott_McDonald_Flyvberg_Blake_Dawson_Waldron_studies.pdf

Olander, S and Landin, A (2008) 'A comparative study of factors affecting the external stakeholder management process', *Construction Management and Economics*, 26: 6, 553 — 561 DOI: 10.1080/01446190701821810

Simon, O. (2001) The Role of the Engineer in Politics, *Proceedings of the Institution of Civil Engineers-Municipal Engineer*, 145 (2):195-196. <http://www.icevirtuallibrary.com.proxy.lib.strath.ac.uk/content/article/10.1680/muen.2001.145.2.195>

Singh, A. (2012) Engineering mixes with politics, *Construction Innovation*, 12(2):128-132, <http://search.proquest.com/docview/1013611741/A2EDFACCE94342AEPQ/1?accountid=14116>

Sense, A and Fernando, M (2011) The spiritual identity of projects, *International Journal of Project Management* 29:504–513

Stafford, J (2013) Briefing: Participation, consensus and adjudication in designing the A3 Hindhead tunnel, UK, *Proceedings of the Institution of Civil Engineers Engineering Sustainability* 166 (2) 57-60.

Starr F (2015) Engineering the Kelpies, *The Structural Engineer*, 93 (2):20-26, <http://www.istructe.org.proxy.lib.strath.ac.uk/webtest/files/96/96feb784-f0cd-4f0a-b1f3->

[cad53c47cec1.pdf#](#)

Transport Scotland (2013) A9 Dualling Engaging with Communities.

http://www.transportscotland.gov.uk/system/files/uploaded_content/documents/projects/A9%20dualling/TS_A9_Dualling_Engaging_Communities_Booklet.pdf

Wiewiora, J. A. (2005) Involvement of Civil Engineers in Politics, *Journal of Professional Issues in Engineering Education and Practice*, 131 (2):102-104,

<http://ascelibrary.org.proxy.lib.strath.ac.uk/doi/abs/10.1061/%28ASCE%291052-3928%282005%29131%3A2%28102%29>

Viewing:

Scotland Great Tram robbery

<https://ls-video2.ces.strath.ac.uk/View.aspx?ID=3008~4l~LrqqFeRi>

The Bridge: Fifty Years across the Forth

<https://ls-video2.ces.strath.ac.uk/view.aspx?id=5249~4u~vB7bULN7>

Panorama-Slumdog Millionaires

<https://ls-video2.ces.strath.ac.uk/View.aspx?ID=3310~4h~GFh4Q67K>

Creating the Kelpies

<https://ls-video2.ces.strath.ac.uk/view.aspx>

Approved

Programme Director Signature:

Date of Last Modifications: 20/08/2019

Assessment and Feedback Schedule

Class Code	CL437	Class Title	Project Analysis
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Brief Description of Assessment

Semester 2:

MM1: Flipped classroom & book jigsaw coursework assessment. (Submission Monday 17th February 2020 @ 12.00hrs noon.

MM2: Themed report. (Submission Week 10 Monday 23rd March 2020 @ 12.00hrs noon

MM3: Poster & reflective report related to Rich Picture Afl exercise (Submission Week 11 Monday 30th March 2020 @ 12.00hrs noon.

Semester 2

Assessment type (& title)	LOs	Weight (%)	Individual / Group	WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9	WK10	WK11	Exam Period
MM 1		20 %	I & G	Handout				Submit		Feedback					
MM 2		55 %	I	Handout									Submit		Feedback
MM 3		25%	I & G	Handout										Submit	Feedback