# Module Descriptor Form

## Civil and Environmental Engineering

**CL437 - Project Analysis**

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|---|---|---|---|---|---|---|---|
| **Module Code** | CL437 | **Module Title** | Project Analysis | | | | |
| **Module Registrar** | Murray, Dr Michael | | | | | | |
| **Other Staff Involved** | | | | | | | |
| **Credit Weighting** | 10 | **Semester** | 2 | **Elective** | Yes | **Academic Level** | 4 |
| **Pre-requisites** | | | | | | | |
| **Required for** | | | | | | | |

**Module Format and Delivery (hours):**

| Lectures | Tutorials | Assignments | Labs | Private Study | Total |
|---|---|---|---|---|---|
| 22 | 0 | 28 | 0 | 50 | 100 |

**Educational Aim**

*This module aims to:*

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.

**Syllabus**

*This module will teach the following:*

- 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.
- Reflective Writing & Professional Development

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**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. |

*(UK SPEC suggests no more than 4 learning outcomes per module. Statements must be broad and be syllabus free and link in with the intended learning outcomes on the programme specifications.)*

**Assessment of Learning Outcomes - Criteria**

Learning Outcome: **1**

| | **Criteria** |
|---|---|
| 1 | C1 Identify strategic challenges & opportunities facing civil engineering practice. |
| 2 | C2 Contrast definitions of project efficiency and effectiveness based on multiple project stakeholders |

Learning Outcome: **2**

| | **Criteria** |
|---|---|
| 1 | C1 Synthesise two macro issues in civil engineering practice based on cited references |
| 2 | C2 Identify personal gaps in prior knowledge related to the issues in C1. |

Learning Outcome: **3**

| | **Criteria** |
|---|---|
| 1 | C1. Identify & record actions for “self” and for “group”. |
| 2 | C2 Establish a set of personal SMART objectives. |

Learning Outcome: **4**

| | **Criteria** |
|---|---|
| 1 | C1 Understand the reasons for engaging in meta cognition and capturing learning practice. |
| 2 | C2 Document reflections on “self” and “group” learning (explicit & tacit) and critically evaluate the SMART objectives. |

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**Assessment Method(s) Including Percentage Breakdown and Duration of Exams**

To Pass the module, students need to gain a summative mark of: 40%

| Description | Semester | Start Week | Duration | Weight | Submission Week | Linked Criteria |
|---|---|---|---|---|---|---|
| Individual Book Jigsaw Coursework | 2 | 1 | | 20% | 4 | LO 1: C1, C2<br>LO 2: C1, C2<br>LO 3: C1, C2<br>LO 4: C1, C2 |
| Group Rich Picture | 2 | 1 | | 25% | 9 | LO 1: C1, C2<br>LO 2: C1, C2<br>LO 3: C1, C2<br>LO 4: C1, C2 |
| Themed Report & Reflective | 2 | 1 | | 55% | 10 | LO 1: C1, C2<br>LO 2: C1, C2<br>LO 4: C1, C2 |

**Principles of Assessment Feedback**

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 seven Professional Attributes for (ICE) and the Development Objectives (IStructE). The assessment also provides 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).

## Additional Information

Students are encouraged to attend co-curricular site visits and CE4R workshops.

## Resit Procedure

Students who fail the module at the first attempt will undertake remedial assessment before or during the August 2026 diet.
This re-examination will consist entirely of coursework

**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

Edinburgh Tram Inquiry report (2023) https://www.edinburghtraminquiry.org/final_report/the-inquiry-report/

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.dundeecity.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).

ISO 14063:2020 Environmental management Environmental communication Guidelines and examples, https://www.iso.org/standard/72888.html

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~LrqgFeRi

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

**CL437 - Project Analysis**

**Module Timetable**

| Week | Semester 1 | Semester 2 |
|---|---|---|
| 0 | | |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | Submission 20% |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | Submission 25% |
| 10 | | Submission 55% |
| 11 | | |
| E | | |

**Date of Last Modification**

11-09-2025