

Module Title:	Civil Engineering Economics and Management
Credits:	5
NFQ Level:	7
Module Delivered In	2 programme(s)
Teaching & Learning Strategies:	Lectures, Practicals, Projects, Independent Learning
Module Aim:	The aims of the module are: 1. to develop a knowledge of the measurement and economics of more advanced civil engineering work; 2. to teach measurement and estimating skills in relation to civil engineering work 3. to develop a knowledge of the principles and practice of project management; 4. to teach project management skills and the use of appropriate software 5. to develop an awareness and understanding of ethics and professional development.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Use standard methods for measurement and estimating of more advanced civil engineering work
LO2	Apply basic project management techniques to the management of Scope, Time and Cost on projects;
LO3	Prepare a Health and Safety Risk Assessment for standard civil engineering work situations.
LO4	Show an awareness and understanding of Ethics, Ethical decision making and professional development.
LO5	Demonstrate an understanding of the parties to a contract and the key issues with the standard forms of contracts used in civil engineering

Pre-requisite learning
Module Recommendations <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>
No recommendations listed
Incompatible Modules <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>
No incompatible modules listed
Co-requisite Modules
No Co-requisite modules listed
Requirements <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>
No requirements listed

Module Content & Assessment

Indicative Content

Measurement and Estimating Cost of Civil Engineering Work

(a) Measurement of Piling, Drainage, and Steel using current Civil Engineering Standard Method of Measurement for inclusion in tender documents. (b) Preparation of contractor's unit rates for civil engineering work for inclusion in pricing documents. (c) Understanding the role of measurement and estimating data during the construction period.

Project Management

(a) Characteristics of a Project (b) Project Mgt Triangle (c) Project Lifecycle, Highway Project, TII Project Phases (d) Project Procurement and Parties to Civil Engineering Contracts (i) DBB – Admeasurement, GCC (ii) D&B, DBO, PPP (e) Scope Management (f) WBS, Scheduling, Network Diagram, Gantt Charts, Use of Microsoft Project (g) Duration Estimating (h) Resource Management (i) Earned Value Analysis (j) Project Risk Management (k) HRM – Personality, Perception & Attribution, Motivation, Working in Teams

Ethics and Professional Development

(a) Moral Standards, Value Judgements, Ethical Principles (b) Engineers Ireland Code of Ethics (c) Law and Ethics (d) Resolving Ethical Dilemmas, Paradigm Cases

Safety Management

(a) Health & Safety at Work Act 2005 + Certain Regs (i) Duties of Employers (ii) Duties of Employees (iii) Safety Statement (iv) Role of HSA (v) H&S Risk Assessment and Method Statements (vi) Example of particular General Regulations (b) Safety, Health & Welfare at Work (Construction) Regulations (i) Client Duties (ii) PSDP (iii) Duties of Designers (iv) Prelim S&H Plan (v) PSCS (vi) Contractor Duties (vii) S&H Plan (viii) Safety File (ix) Examples of particular Construction Regulations

Assessment Breakdown	%
Project	40.00%
End of Module Formal Examination	60.00%

No Continuous Assessment

Project

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Econ P1 Submission of Measurement Tasks 1 Econ P2 Submission of Measurement Task 2 Econ P3 Submission of Estimating Unit Rate Econ P4 Measurement Class Test	1	14.00	n/a
Project	Mgt P1 Report on a Highways Project based on ICE meeting presentation. Mgt P2 Network diagram & Gantt chart – by hand Mgt P3 Resource Levelling Mgt P4 WBS, Duration Estimates, Schedule using Excel and MS Project Mgt P5 Research on WBS for drainage pipe installation + Spreadsheet for Excavation Production Rate Mgt P6 Health & Safety Risk Assessment	2,3,4,5	26.00	n/a

No Practical

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	n/a	1,2,3,4,5	60.00	End-of-Semester

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Every Week	6.00
Independent Learning	Every Week	6.00
Total Hours		12.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMHCE_B	Bachelor of Engineering (Honours) in Civil Engineering	3	Mandatory
CW_CMCIV_D	Bachelor of Engineering in Civil Engineering	5	Mandatory