

University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Cost Estimation and Financial Planning in Industry			
Code: QUAL11029	SCQF Level: Choose an item. (Scottish Credit and Qualifications Framework)	Credit Points:	ECTS: (European Credit Transfer Scheme)
School:	Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Andy Durrant		
Summary of Module			
<p>The focus of the module is process costing and financial planning to ensure economic process design and operation in industries. This requires a multi-disciplinary approach to evaluate economic performance and make financial plan that is informed by engineering, equipment, environmental, economic, and biases in costing.</p> <p>Process costing includes capital costs and product costs estimations, capital depreciation, the Cost of Money, and Sensitivity analysis is also included in the module study.</p> <p>Biases in costing: influence of sub-conscious cognitive biases on estimation and decision making; and some tools used in combat biases estimation.</p> <p>The costing for different process industries such as chemicals production, pharmaceuticals, energy and renewable energy, waste management, electronics industry, civil engineering, aircraft engineering will be studied separately to extend students ability in finance management.</p>			

Module Delivery Method					
Face-To-Face	Blended	Fully Online	HybridC	Hybrid0	Work-Based Learning
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
See Guidance Note for details.					

Campus(es) for Module Delivery

The module will normally be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit) (tick as appropriate)						
Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Add name

Term(s) for Module Delivery					
(Provided viable student numbers permit).					
Term 1	<input type="checkbox"/>	Term 2	<input checked="" type="checkbox"/>	Term 3	<input type="checkbox"/>

Learning Outcomes: (maximum of 5 statements) These should take cognisance of the SCQF level descriptors and be at the appropriate level for the module. At the end of this module the student will be able to:	
L1	Develop a critical knowledge of process costing technologies, and the analysis of process economic performance to complex problems.
L2	Develop advanced and critical knowledge of the role played by process finance planning in system analysis that will also take into consideration issues such as Biases in costing .
L3	Develop the underlying knowledge that will enable the analysis of systems even in the cases of missing and incomplete data through research and innovation with financial, and engineering considerations.
L4	To enable a student to numerically improve industry management and calculate both capital and running costs for different industries.

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	During completion of this module, there will be an opportunity to achieve core skills in:
Knowledge and Understanding (K and U)	<p>SCQF Level 11</p> <p>Demonstrate:</p> <ul style="list-style-type: none"> • A Critical knowledge that covers most of the main areas of the discipline of process costing and their relevance and application in different types of industries at advance level. • A critical understanding of the principal theories, concepts and costing technologies. • A critical understanding of a range of specialised theories, concepts and principles applied to process finance planning. • Extensive, detailed and critical knowledge and understanding of the role of process economic performance in project management.

<p>Practice: Applied Knowledge and Understanding</p>	<p>SCQF Level 11</p> <ul style="list-style-type: none"> • Use a significant range of the core costing and finance knowledge and skills to advance the knowledge of project management. • The ability to use a range of specialized skills, techniques, practices and/or materials that are informed by the recent advances in the process economic analysis in general and in industrial management. • Apply a range of standard and specialized research and other techniques to advance the understanding and proper utilization of process costing and finance planning fundamentals. • Demonstrate originality, creativity and critical thinking. • Apply knowledge of process costing and finance planning in a wide variety of industries.
<p>Generic Cognitive skills</p>	<p>SCQF Level 11</p> <p>Apply critical analysis, evaluation and synthesis to forefront issues, or issues that are informed by forefront developments in the area of process costing and finance planning.</p> <ul style="list-style-type: none"> • Practice at a high level the ability to critically identify, analyse, conceptualise and define new and abstract problems related to process costing and finance planning and the application of the concepts in different industries . • Develop and demonstrate original and creative thinking and responses in dealing with complex or novel problems and issues. • Critically review, consolidate and extend knowledge, skills, practices and thinking in the field of process costing and finance planning.
<p>Communication, ICT and Numeracy Skills</p>	<p>SCQF Level 11</p> <ul style="list-style-type: none"> • Communicate, using appropriate methods, to a range of audiences with different levels of knowledge/expertise. /Communicate with peers, more senior colleagues and specialists. • Use a wide range of ICT applications to support and enhance work at this level and show critical understanding of the scope and limitations of the tools used and their underlying theoretical basis. • Undertake critical evaluations of a wide range of numerical and graphical data with the ability to deal with situations involving missing data and lack of information using research.
<p>Autonomy, Accountability and Working with others</p>	<p>SCQF Level 11</p> <ul style="list-style-type: none"> • Exercise high level of autonomy and initiative in professional and equivalent activities with the ability to work independently on significant and demanding tasks. • Take responsibility for own work and/or significant responsibility for the work of others providing leadership. • Demonstrate leadership and/or initiative and make an identifiable contribution to change and development • Practise in ways which draw on critical reflection on own and others' roles and responsibilities. • Deal with complex ethical and professional issues in engineering context and make informed judgements on issues not addressed by

	current professional and/or ethical codes or practices.	
Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code:	Module Title:
	Other:	Suitable background in Engineering
Co-requisites	Module Code:	Module Title:

*Indicates that module descriptor is not published.

Learning and Teaching	
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	Student Learning Hours (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	24
Tutorial/Synchronous Support Activity	12
Independent Study	164
	200 Hours Total
**Indicative Resources: (eg. Core text, journals, internet access)	
<p>The following materials form essential underpinning for the module content and ultimately for the learning outcomes:</p> <p>Gerrard, Guide to Capital Cost Estimating, 2000</p> <p>Peters and Timmerhaus, Plant Design and Economics for Chemical Engineering, 2003</p> <p>Conceptual Cost Estimating Manual, 1996</p>	

(*N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements

In line with the [Student Attendance and Engagement Procedure](#): Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time.

Equality and Diversity

The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: [UWS Equality, Diversity and Human Rights Code](#).

Please ensure any specific requirements are detailed in this section. Module Co-ordinators should consider the accessibility of their module for groups with protected characteristics..

(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	Engineering
Assessment Results (Pass/Fail)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
School Assessment Board	Engineering
Moderator	Li Sun
External Examiner	Y Chen
Accreditation Details	
Changes/Version Number	1

Assessment: (also refer to Assessment Outcomes Grids below)

Assessment for the module includes both formative and summative assessment. Formative assessment is provided during lectures in the form of exercise problems, during tutorial sessions, and as part of the preparation for written submissions. Summative assessment is provided by following three categories:

Assessment 1 – Report: 40 %
Assessment 2 – Presentation: 30 %
Assessment 3 – Assignment: 40 %
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Assessment Outcome Grids (See Guidance Note)

Component 1							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Learning Outcome (5)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Report	✓		✓			40	

Component 2							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Learning Outcome (5)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Presentation		✓		✓		30	

Component 3							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Learning Outcome (5)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Assignment :	✓	✓	✓	✓		40	
Combined Total for All Components						100%	XX hours