Module Descriptor

Title	Cost Estimation and Financial Planning in Industry		
Session	2025/26	**Status**	Published
Code	QUAL11029	**SCQF Level**	11
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	A Durrant		

Summary of Module

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.

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.

Biases in costing: influence of sub-conscious cognitive biases on estimation and decision making; and some tools used in combat biases estimation.

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. .

Module Delivery Method	**On-Campus[1]** ☒	**Hybrid[2]** ☐	**Online[3]** ☐	**Work -Based Learning[4]** ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☐ Lanarkshire ☐ London ☒ Paisley	☐ Online / Distance Learning ☐ Other (specify)	

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

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Terms for Module Delivery	Term 1	☐	Term 2	☒	Term 3	☒
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
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.
L5	N/A

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)	**SCQF 11** Demonstrate: • 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.
Practice: Applied Knowledge and Understanding	**SCQF 11** • 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.

Generic Cognitive skills	**SCQF 11** • 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. • 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.
Communication, ICT and Numeracy Skills	**SCQF 11** • 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.
Autonomy, Accountability and Working with Others	**SCQF 11** • 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.

Prerequisites	**Module Code** N/A	**Module Title** N/A
	Other Suitable background in Engineering	
Co-requisites	**Module Code** N/A	**Module Title** N/A

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. The Learning & Teaching Strategy for this module is based on the general strategy for the MSc Project Management. Classes are delivered on a weekly basis. Lectures introduce and exemplify key theoretical and critical concepts. Tutorial sessions will be given to further develop students'

understanding and facilitate them to practice managing a project within their groups. Students are given sufficient time and support to work on the coursework.

For Distance Learning students and hybrid/blended deliveries, full use will be made of the VLE. That is, all teaching material will be made available online and students will be guided through the material. Email and videoconferencing will be used to support students. The class test will need to take place at a designated remote site under UWS protocols.

Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning 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
Asynchronous Class Activity	12
Independent Study	152
n/a	0
n/a	0
TOTAL	200

Indicative Resources

The following materials form essential underpinning for the module content and ultimately for the learning outcomes:

Gerrard, A.M. (2000) Guide to Capital Cost Estimating. 4th edn. Rugby: ICHemE.

Peters, M.S. and Timmerhaus, K.D (2003) Plant Design and Economics for Chemical Engineering. Maidenhead:McGraw-Hill.

Page, J.S. (1996) Conceptual Cost Estimating Manual. Oxford: Gulf Professional Publishing.

(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.

For the purposes of this module, academic engagement equates to the following:

- Prompt Attendance of Lectures - Students are expected to attend scheduled lectures promptly and actively participate by taking notes, asking questions, and contributing to discussions.
- Prompt Attendance of Tutorials - Students are expected to attend tutorials on time, prepared with any assigned readings or tasks. Active participation in tutorial discussions and activities is strongly encouraged.

• Weekly Access to Materials on Aula - Students are required to access Aula on a weekly basis to stay informed about updates, download lecture slides or readings, and engage with any online activities or discussions. • Successful completion and submission of coursework

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. Aligned with the University's commitment to equality and diversity, this module supports equality of opportunity for students from all backgrounds and learning needs. Using the VLE, material will be presented electronically in formats that allow flexible access of content. This module complies with university regulations and guidance on inclusive learning and teaching practice. Specialist assistive equipment, support provision and adjustment to assessment practice in accordance with the University's policies and regulations. More information on the University's EDI policies can be accessed at: https://www.uws.ac.uk/about-uws/uws-commitments/equality-diversity-inclusion/
(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 Physical Sciences**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Civil Engineering and Quality Management
Moderator	L Sun
External Examiner	Y Cheng
Accreditation Details	The Module is part of the MSc Project Management Programme, Accredited by the Association for Project Management.
Module Appears in CPD catalogue	☒ **Yes** ☐ **No**
Changes / Version Number	2.16

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Report: 40%
Assessment 2
Presentation: 30 %
Assessment 3

Assignment: 30 %
(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.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Report	☒	☐	☒	☐	☐	40	

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Presentation	☐	☒	☐	☒	☐	30	

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Coursework	☒	☒	☒	☒	☐	30	
Combined total for all components						100%	hours

Change Control

What	**When**	**Who**
Module Descriptor reviewed prior AY 2025/2026 in line with ILR recommendations.	March 2025	Andy Durrant