



Title:	M&E Cost Planning APPROVED
Long Title:	Cost Planning of Mechanical and Electrical Services
Module Code:	BULD8024
Credits:	5
NFQ Level:	Advanced
Field of Study:	Building Science
Valid From:	Semester 1 - 2012/13 (September 2012)
Module Delivered in	6 programme(s)
Module Coordinator:	DANIEL CAHILL
Module Author:	DANIEL CAHILL
Module Description:	This module will enable the student to understand and use cost data and resource information for the purpose of cost planning and control of Mechanical and Electrical Services
Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Distinguish and interpret the different phases involved in the design process for Mechanical and Electrical services and the importance of the client's early involvement in economic aspects of this process
LO2	Describe the processes used in cost planning of Mechanical and Electrical services, evaluate pre contract cost planning for these elements from inception to contract acceptance
LO3	Strategically apply Whole Life Costing techniques in the evaluation of Mechanical and Electrical services
LO4	Discuss how costs can be controlled for Mechanical and Electrical services, both pre and post contract; manipulate and modify historical cost data
LO5	Prepare simple Interim valuations and Final Accounts for Mechanical and Electrical services sub-contracts
Pre-requisite learning	
Module Recommendations	
<i>This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named CIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).</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. You may not earn additional credit for the same learning and therefore you may not enrol in this module if you have successfully completed any modules in the incompatible list.</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. You may not enrol on this module if you have not acquired the learning specified in this section.</i>	
No requirements listed	
Co-requisites	

No Co Requisites listed

Module Content & Assessment

Indicative Content				
Economic design Critical evaluation of the factors that affect the design and cost of Mechanical and Electrical services; form and function, plan shape, enclosing ratio, number of storeys, storey height, internal partitions, etc.				
Methods of cost planning Critical analysis of the unit method, Area/m2 method, elemental method and approximate quantities methods of cost planning. Different source of cost data. Cost and price indices and other trends. Using Worked examples				
Manipulation of data Analysis of previous projects to be used for cost information. Adjusting cost data to allow for changes in size, time and specification between historic and proposed project costs for Mechanical and Electrical services				
Life Cycle Costing Appraise the benefits of life cycle costing for Mechanical and Electrical services; the criterion rate, the involvement of the client throughout the process in order to arrive at the optimum solution, IRR, Client requirements, Client Information, Life of investment, Capital cost, rental values and Capital values. Principles, applications and benefits of value management, establishing targets with the client and project team Value Engineering techniques.				
Interim Valuations and Final Accounts Critical examination of the procedure involved in the preparation of interim accounts and different types of final account, i.e. Adjusted, Ascertained, Cost plus etc, for Mechanical and Electrical services sub-contracts				
Assessment Breakdown				%
Course Work				60.00%
End of Module Formal Examination				40.00%
Course Work				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	The relationship of capital cost of m&e to capital values of the completed project	1,2,4	30.0	Week 5
Project	Prepare cost plan and life cycle costs analysis for a mechanical and electrical installation	1,2,3	30.0	Week 9
End of Module Formal Examination				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	End-of-Semester Final Examination	1,2,3,4,5	40.0	End-of-Semester
Reassessment Requirement				
Repeat examination Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.				

The institute reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time

<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Delivery of course material	3.0	Every Week	3.00
Independent Learning	Review, augmentation and application of course	4.0	Every Week	4.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				3.00

Workload: Part Time

<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Delivery of course ematerial	3.0	Every Week	3.00
Independent Learning	Review, augmentation and application of course	4.0	Every Week	4.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				3.00

Module Resources

Recommended Book Resources

- Ferry, DJ, Brandon, PS & Ferry, JD 2006, *Cost planning of buildings*, 7th Ed., Blackwell Science Malden, MA [ISBN: 978-0632042516]
- Swaffield, L & Pasquire, C 2000, *Improving early cost advice for mechanical and electrical services*, RICS Foundation: Research Paper Series [ISBN: 978-1842190458]
- BS/ISO 15686-5 2008, *Buildings & constructed assets – Service life planning – Part 5: Life cycle costing* British Standards Institution [ISBN: 978 0580540837]
- Franklin & Andrews 2008, *Spon's Irish Construction Price Book*, 3rd Ed., Taylor & Francis [ISBN: 978-0415456371]
- Davis Langdon 2011, *Spon's Mechanical and Electrical Services Price Book 2012*, Spon Press [ISBN: 978-0415680660]

Supplementary Book Resources

- Duncan Cartlidge 2009, *Quantity surveyor's pocket book*, Butterworth-Heinemann Oxford [ISBN: 978-0750687461]
- Buchan, RD, Fleming, EFW & Grant 2003, *Estimating for builders and surveyors*, Butterworth-Heinemann Oxford [ISBN: 978-0750642712]
- Bryan, T 2010, *Construction Technology*, 2nd Ed., Wiley-Blackwell [ISBN: 978-1405158749]
- Kelly, J & Hunter, K 2009, *Life Cycle Costing Of Sustainable Design*, RICS Research [ISBN: 978-1842194362]
- Hawkins, G 2011, *Rules of Thumb: guidelines for building services*, 5th Ed., BSRIA [ISBN: 978-0860226925]
- Langmaid, J 2004, *Choosing building services*, BSRIA Bracknell, Berks. [ISBN: 978 0860226433]

Recommended Article/Paper Resources

- Swaffield, L & Pasquire, C 1999, *Examination of relationships between building form and function, and the cost of mechanical and electrical services*, Construction Management and Economics, Vol 17, No 4, pp 483 – 492 [ISSN: 014461999371402]

Other Resources

- Website: Society of Chartered Surveyors Ireland
<http://www.scsi.ie>
- Website: Royal Institution of Chartered Surveyors
<http://www.rics.org>

Module Delivered in			
Programme Code	Programme	Semester	Delivery
CR_CQTSU_8	<u>Bachelor of Science (Hons) in Quantity Surveying</u>	7	Elective
CR_CCNMG_8	<u>BSc (Hons) in Construction Management</u>	7	Elective
CR_CMEQS_8	<u>Certificate in Mechanical & Electrical Quantity Surveying</u>	1	Mandatory
CR_CARCT_9	<u>Master of Science in Architectural Technical Design</u>	1	Elective
CR_CCOPM_9	<u>Masters of Science in Construction Project Management</u>	1	Elective
CR_CCNPM_9	<u>Postgraduate Diploma in Science in Construction Project Management</u>	1	Elective