Module Title:	Facilities & Building Services Management
Language of Instruction:	English

Credits:	15

NFQ Level:	8

Module Delivered In	No Programmes

Teaching & Learning Strategies:	Lectures Private study

Module Aim:	To develop the student's ability to manage the energy, services and facilities of a building.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	To demonstrate an understanding of the principles and practice of energy, building services and Facilities Management (FM) strategies in commercial & industrial environments
LO2	To evaluate and understand application of best practice FM operations, maintenance and information technology systems across a facility and in particular those relating to building services.
LO3	To apply best practice approach to facilities change and crisis management on new facility and retrofit/refurbishment applications.
LO4	To manage a facility and its building services in a sustainable, ethical & energy efficient manner.
LO5	To prepare or evaluate a building energy audit & understand how an audit can drive performance improvement.

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

Module Content & Assessment

Indicative Content

Introduction to Facility Managers (2 hours)
(a) Background and history of FM (b) Role, job description and duties of an FM manager

Facilities Management Operations (5 hours)
(a) Hard V. Soft services (b) Outsourcing V. In-house operations (c) Mission and vision statements (d) The Balanced Scorecard (e) KPIs - key performance indicators

Ethical Facilities Management (3 hours)
(a) Professional ethics for FM managers (b) Whistle blowing (c) Corporate security and confidentiality

Sustainable Facilities Management (5 hours)
(a) Sustainability in FM (b) Corporate sustainability and social responsibility (c) Organisational sustainability goals (d) Green strategy development (e) TBL - Triple Bottom Line Framework development (f) FM and ecologically (g) Supply chain ecosystems (h) Waste management (i) Waste water management for pharma plants

Health, Safety and Security of Personnel (10 hours)
(a) Work placement productivity (b) Sick building syndrome (c) dealing with employee complaints (d) occupational health and safety (e) ergonomics (f) Building Services and their impact on the workforce (g) Hazard and risk assessments (h) Employee personal security and well being (i) Fire evacuations and the psychology of fire

Production Management Techniques for FM (10 hours)
(a) Production management techniques (b) Lean management (c) Time and motion management (d) Six Sigma (e) Kaizen (f) 7 wastes

Crisis and Change Management (10 hours)
(a) Risk analysis (b) Crisis management (c) Change management (d) Disaster/Extreme Event Recovery (e) Business continuity planning (f) Space planning and management (g) Lease management

Building Services Management (24 hours)
(a) Services management (b) Space planning for services (c) Building and services life cycles (d) Services coordination (e) Commissioning engineering (f) Services life cycles and replacement costs (g) Specialised services for clean rooms, pharmaceutical plants, telecommunication buildings, etc. (h) Sustainable services (i) Zero and near zero energy services (j) Lighting installation costings (k) Managing water resources

Validation engineering (6 hours)
(a) Validation requirements (b) Validation engineering justification (c) Methods of validation (d) FDA and other licensing authority requirements (e) Building Services Validation for clean rooms and process engineering

Industrial Facilities Management (10 hours)
(a) Super clean environmental and space requirements (b) Industry types FMCG (Fast Moving Consumer Goods), chemical, pharmaceutical and medical devices (c) Industry specific regulatory requirements (d) Facility management in clean room applications (e) Facility testing and qualification (f) Facilities and utilities services - water, steam, compressed gas and HVAC (g) Facilities life safety systems management and auditing

FM Information Technology (10 hours)
(a) Building services controls systems (b) Building automation system (BAS) (c) Building Services Management systems (BMS) (d) Energy Management Systems (e) Smart Buildings and Technologies (f) Asset management systems (g) Computerised maintenance management (CMMS) system

Maintenance Management (10 hours)
(a) Building and services life cycles (b) Maintenance Services coordination (c) Maintenance management types – predicative/condition based, preventative, reactive, etc. (d) Implementing a maintenance programme (e) Services and buildings maintenance contracts management and negotiation (f) Asset management

Energy Management (45 hours)
(a) Energy assessment and legislation overview (b) Energy monitoring, targeting, recording and reporting (c) Energy data collection and sampling methodologies (d) Energy legislation, taxes, grants and incentives (e) Energy efficient management of buildings (f) Fuel usage analysis (g) Electrical / fossil fuel / water tariff and supplier contract negotiation (h) County Council Rates Negotiation (i) Energy audits (j) Appraisal of energy system usage (k) Degree day analysis and regression analysis (l) Energy benchmarks (m) NPIs - Normalised Performance Indicators (n) CUSUM - Cumulative Sum Deviation method

Assessment Breakdown	%
Continuous Assessment	10.00%
Project	30.00%
End of Module Formal Examination	60.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Other	No Description	5	10.00	Sem 1 End

Project

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	No Description	1,3,4,5	30.00	Sem 1 End

No Practical

End of Module Formal Examination				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	No Description	1,2,3,4,5	60.00	End-of-Semester

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

End of Module Formal Examination				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	No Description	1,2,3,4,5	60.00	End-of-Semester

Module Workload

Workload: Full Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
Lecture	30 Weeks per Stage	5.00
Estimated Learner Hours	30 Weeks per Stage	5.00
	Total Hours	300.00