

ZMGT H4101: Environmental Health and Safety

Module Title:			Environmental Health and Safety	
Language of Instruction:		n:	English	
Credits: 5		5		
NFQ Level:		8		
Module Deliv	vered In		1 programme(s)	
Teaching & Learning Strategies:			This module will be taught in lectures of one hour duration four times per week for 15 weeks (60hrs). Classes may take the form of formal lectures or tutorial-type sessions. A range of teaching techniques will be used as appropriate, including discussion of case studies, worksheets, PowerPoint and other presentations. Students will be encouraged to learn through questioning and group discussions. Enquiry driven learning will be encouraged through having additional resources (reports/information/videos) on Blackboard.	
Module Aim:			Providing a healthy and safe work place whilst protecting the environment is now paramount for every business and industry. The aim of this module is to give the student an overview of legislation and management aspects of environment and occupational health and safety related activities. To give the student an introduction to the main safety issues in the workplace.	
Learning Ou	tcomes			
On successfu	Il completic	on of th	his module the learner should be able to:	
LO1	Students v	tudents will be able to discuss current impacts of human activities on the the natural environment and the possible ccupational hazards in the work place.		
LO2	Students will be able to evaluate regulatory requirements and guidance documents relating to environmental and occupational safety.		able to evaluate regulatory requirements and guidance documents relating to environmental and fety.	
LO3	Discuss the process of risk assessment and risk mitigation in relation to environmental and occupational issues		cess of risk assessment and risk mitigation in relation to environmental and occupational issues	
Pre-requisite	e learning			
Module Rec This is prior l	ommendat earning (or	ions a prac	ctical 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				
Requiremen This is prior l	Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.			
No requireme	No requirements listed			



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Module Content & Assessment

Indicative Content

The Natural Environment

Ecosystems. Ecosystem functions, Natural capital, Depleting natural resources, Earth equivalence, Environmental degradation, Sustainable development. Circular Economy

Water Quality

Surface waters/Groundwater/aquifers, Water Framework Directive. Drinking water (Public, group, private supplies), legislation. Industrial and urban waste water: types, treatment, discharge licences and legislation, river and lake assimulative capacity, Responsibilities of EPA, local authorities.

Pollution

Classes of pollution, Chemical (organic - PAHs/PCBs/Dioxins/VOCs/Biocides/Pharmaceuticals, inorganic - nutrients (N-P)/heavy metals), biological (bacteria/viruses/protozoa), physical (light/thermal) Rio de Janeiro Earth Summit 1992. Global warming.

Environmental Liability Directive

Provisions, 'Polluter Pays' principle, Precautionary principle. The Pollution Linkage concept.

Industrial Emissions Directive

Provisions, IPC licences, IPC application process/information, Best Available Technique (BAT), BREF documents, Emission Limit Values (ELV). IPC cases studies (Food and Pharmaceutical industry)

Environmental Impact Assessment

Methodology of EIA/EIS. Regulations. Case studies on major projects. Sustainable development. Public consultation.

Energy Fossils fuels, environmental impacts (extraction-processing), effects of combustion - atmosphere, GHG-particulate matter, carbon footprint, solution - atmosphere, GHG-particulate matter, carbon footprint, biofuel). Knoto Paris 2015 Energy audits. renewable energy (environmental impacts of solar, hydroelectric, wind, biofuel), Kyoto. Paris 2015. Energy audits.

Waste Management

Waste production statistics, the Waste management heirachy (prevent, reduce, reuse, recycle), Environmental impacts of landfill (odous/leachate/pests/visual), Landfill Directive, Environmental impacts of incineration (technology/dioxins/GHG) Reporting, compliance, Biogradable waste treatment, composting, anaerobic digestion. Other waste legislation (WEE, VoU.).

Environmental Management Systems in Industry

EMS: Componients and implimentation. Environmental quality standards (ISO 14001:2015, Environmental management and audit scheme (EMAS). Legal and other requirements. Evaluation of compliance. Auditing. Eco-labelling.

Health and Safety Legislation:

Common law and statute law, criminal law and civil law, European law. Health, Safety and Welfare Act, 2005; scope of the Act, duties of employers, employees and providers, the Safety statement, hazard identification and risk assessment

Hazardous Chemicals

Toxicity, routes of exposure, Classification of Hazardous Chemicals, Chemical Regulations, Material Safety Data Sheets.

Biological Hazards:

Classification of biological hazards, occupational diseases (zoonosis).

Health Hazards

Noise Induced Hearing Loss, Musculoskeletal Diseases, Asthma, Dermatitis, Stress and Bullying in the workplace

Hazard Management

Occupational Exposure Levels; TWA, STEL, TLV, OES Engineering and other controls of airborne contaminants. Use and limitations of Personal Protection Equipment. Health Surveillance.

Display Screen Equipment

Ergonomics, VDU regulations, health effects, adapting the workstation to minimise adverse effects.

Accidents Distribution and cause of accidents in different workplaces, accident investigation, accident reporting.

Inspectors

The role of Inspectors and the Health and Safety Authority

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

Special Regulation

Students must achieve a minimum grade (35%) in both the CA and final examination

Continuous Assessment				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Written Report	1 industry standard report in Environmental Management	1,2,3	20.00	n/a
Written Report	1 industry standard report in Occupational Health and Safety	1,2,3	20.00	n/a

No Project

No Practical				
End of Module Formal Examination				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	Students must achieve a minimum grade (35%) in the final examination and must achieve a minimum grade (40%) in the combined Final exam and CA.	1,2,3	60.00	End-of- Semester

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



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Module Workload

Workload: Full Time			
Workload Type	Frequency	Average Weekly Learner Workload	
Lecture	12 Weeks per Stage	4.00	
Estimated Learner Hours	15 Weeks per Stage	5.13	
	Total Hours	125.00	

Module Delivered In				
Programme Code	Programme	Semester	Delivery	
CW_SABTP_B	Bachelor of Science (Honours) in Biosciences with Biopharmaceuticals	7	Mandatory	