

Module Title:	Environmental Health and Safety
Language of Instruction:	English
Credits:	5
NFQ Level:	8
Module Delivered 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 Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Students will be able to discuss current impacts of human activities on the the natural environment and the possible occupational hazards in the work place.
LO2	Students will be able to evaluate regulatory requirements and guidance documents relating to environmental and occupational safety.
LO3	Discuss the process of risk assessment and risk mitigation in relation to environmental and occupational issues
Pre-requisite learning	
Module Recommendations	
<i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</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.</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.</i>	
No requirements listed	

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 assimilative 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, renewable energy (environmental impacts of solar, hydroelectric, wind, biofuel), Kyoto. Paris 2015. Energy audits.
Waste Management Waste production statistics, the Waste management hierarchy (prevent, reduce, reuse, recycle), Environmental impacts of landfill (odours/leachate/pests/visual), Landfill Directive, Environmental impacts of incineration (technology/dioxins/GHG) Reporting, compliance, Biodegradable waste treatment, composting, anaerobic digestion. Other waste legislation (WEE, VoU.).
Environmental Management Systems in Industry EMS: Components and implementation. 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				
<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
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

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
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