

Module Title:	Engineering Chemistry
Language of Instruction:	English
Credits:	5
NFQ Level:	6
Module Delivered In	2 programme(s)
Teaching & Learning Strategies:	This subject will be taught in two theory classes of one hour duration per week and one two hour practical class each week.
Module Aim:	The aim of this module is to provide the student with an introduction to the principles of chemistry to develop practical laboratory skills in chemistry.
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Demonstrate a theoretical knowledge and understanding of chemistry, fluid mechanics and biology as applied to civil engineering.
LO2	Apply scientific procedures, including recording and analysing experimental data.
LO3	Understand the principles behind basic laboratory instruments.
LO4	Explain the theory behind practical experiments carried out in the laboratory.
LO5	Identify and quantify basic sources of error in laboratory experiments.
LO6	Demonstrate an ability to work independently in a laboratory or as part of a team.
LO7	Apply the appropriate safety procedures in the laboratory.
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

Measurement

Physical standards, SI units, basic measurements, length, time, errors measurement of errors.

Fluids

Pressure in liquid, density, atmospheric pressure, pressure gauges, viscosity and pressure.

Chemistry

Structure of atom. the periodic table, ionic and covalent bonds, concentrations of solutions, molarity, basic water quality

Practicals

At the start of each practical there will be a talk about any relevant safety issues. The practical component will allow students to develop the required technical competencies, attitudes and behaviours develop problem solving abilities and group skills

biology

biodiversity and conservation, microbiology and its importance in water quality and wastewater treatment

Assessment Breakdown

	%
Continuous Assessment	50.00%
Practical	50.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Examination	a number of one hour exams throughout the year plus a formal end of year exam	1,2,3,4	50.00	n/a

No Project

Practical

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	a two hour practical each week	2,3,4,5,6,7	50.00	n/a

No End of Module Formal Examination

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	2.00
Laboratory	12 Weeks per Stage	2.00
Estimated Learner Hours	12 Weeks per Stage	6.50
Total Hours		126.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMHCE_B	Bachelor of Engineering (Honours) in Civil Engineering	2	Mandatory
CW_CMHCE_B	Bachelor of Engineering (Honours) in Civil Engineering - Ab Initio	1	Mandatory