SCIE C1504: Engineering Chemistry

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	
On successful completion of this module the learner should be able to:	
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 *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

SCIE C1504: Engineering Chemistry

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

SCIE C1504: Engineering Chemistry

Module Workload

Workload: Full Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
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