



Course Descriptor

ENEN301 Environmental Chemistry

Proposed Academic Year	2020/2021	Last Reviewed Academic Year	2019/2020
Course Code	ENEN301	Course Title	Environmental Chemistry
Credit hours	3	Level of study	Third
College / Centre	College of Engineering	Department	Environmental Engineering
Co-requisites		Pre-requisites	CHEM101

1. COURSE OUTLINE

This course teaches the basic chemical aspects of environmental engineering. Topics covered include inorganic chemistry, chemical kinetics, acid-base chemistry, and oxidation-reduction, and Precipitation dissolution, element of organic chemistry and thermodynamics of chemical reactions.

2. AIMS

The course provides students with concepts and techniques that enable them to understand the chemistry impact on the Earth's environment.

3. LEARNING OUTCOMES, TEACHING, LEARNING and ASSESSMENT METHODS (Indicative)

Learning Outcomes (Definitive)	Teaching and Learning methods (Indicative)	Assessment (Indicative)
1. Understand the chemical reactions and kinetics which related to the environment	Lectures	Assignments and in-class tests
2. Understand the concepts of chemical kinetics	Lectures	Assignments and in-class tests
3. Ability to analyze continuous the environmental issues from chemistry approach	Lectures	Assignments and in-class tests

4. ASSESSMENT WEIGHTING

Assessment	Percentage of final mark (%)
Assignments	20%
Mid-term Examinations (two)	40%
Final Examination	40%
TOTAL	100%

5. ACHIEVING A PASS

Students will achieve **3** credit hours for this course by passing **ALL** of the course assessments and achieving a **minimum overall score of 50%**.

NB *Ensure that ALL learning outcomes are taken into account



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6. COURSE CONTENT (Indicative)



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LECTURE TOPIC	TIME (HOURS)
Introduction to Environmental Chemistry	6
Ozone layer depletion	3
Material balance	6
Unites and the pollutants concentration	6
inorganic chemistry and chemical kinetics	6
Acid- base chemistry and their impacts	6
oxidation- reduction, precipitation dissolution	3
Element of organic chemistry and thermodynamics of chemical reactions.	3
Thermodynamics chemistry	3
Water pollution and treatment	3
TOTAL HOURS	45
Plus RECOMMENDED INDEPENDENT STUDY HOURS	
TOTAL COURSE HOURS	45

7. RECOMMENDED READING

Core text/s:

Elementals of Environmental Chemistry, *Hites and Raff*
Water Chemistry, *Snoeyink, V. L and Jenkins, D.*

Library + online resources:

<https://www.oercommons.org/courses/environmental-engineering-and-water-chemistry>

<https://www.oercommons.org/courses/environmental-chemistry-3>