



Course Descriptor

ENEN302 Environmental Microbiology

Proposed Academic Year	2020/2021	Last Reviewed Academic Year	2019/2020
Course Code	ENEN302	Course Title	Environmental Microbiology
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 biological aspects of environmental engineering. Topics covered include microbial cell and its metabolic capabilities, microbial genetics and its potentials, growth of microbes and kinetics of growth, microbial ecology and diversity, microbiology of wastewater Treatment, probing of microbes, public health microbiology, and pathogen control.

2. AIMS

The course provides students with concepts and techniques that enable to understand the microbiological rules on the earth environment.

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

Learning Outcomes (Definitive)	Teaching and Learning methods (Indicative)	Assessment (Indicative)
1. Understand the microbiology impacts on the environment	Lectures	Assignments and in-class tests
2. Understand the microbiology life cycles	Lectures	Assignments and in-class tests
3. Ability to analyze and detect the environmental issues from microbiology 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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LECTURE TOPIC	TIME (HOURS)
Introduction to Environmental Microbiology	6
Microbial cell and its metabolic capabilities	6
Microbial genetics and its potentials	6
Growth of microbes and kinetics of growth	3
Microbial ecology and diversity	3
Microbiology of wastewater treatment	3
Pathogen control	3
Industrial Microbiology	3
Air Microbiology	3
Soil Microbiology	3
Public health microbiology	6
TOTAL HOURS	45
Plus RECOMMENDED INDEPENDENT STUDY HOURS	
TOTAL COURSE HOURS	45

7. RECOMMENDED READING

Core text/s:

Environmental Microbiology, *Maier, R. M, Pepper, I, Gerba C. P*

Library + online resources:

<https://www.oercommons.org/courses/1-89-environmental-microbiology-fall-2004/view>

<https://open.umn.edu/opentextbooks/textbooks/environmental-biology>