



**Master of Engineering major in Environmental Engineering (M.Engg.En.E.)**  
Academic Year 2020-2021

Reference: Final Draft of CMO – PSG for graduate degree programs in Engineering

## **PROGRAM DESCRIPTION**

The Master of Engineering is an applications – or project – oriented degree that emphasizes the application of theories and methods to actual problems in industry and academe. It is designed to develop engineering graduates their expertise through advanced courses and specialized electives.

## **PROGRAM EDUCATIONAL OBJECTIVES**

The graduates of Master of Engineering after graduation shall:

1. successfully practice as environmental engineering specialists for the welfare of society;
2. demonstrate a high degree of professionalism in the workplace.

## **STUDENT OUTCOMES**

The graduates of Master of Engineering should have the ability to:

- a. Demonstrate a comprehensive and in-depth understanding of engineering principles and apply advanced knowledge on the specific discipline;
- b. Analyze, synthesize, create and evaluate engineering systems;
- c. Design components, devices and systems to meet specified engineering needs under real – world constraints;
- d. Communicate effectively technical knowledge, both orally and in writing, on complex multidisciplinary activities
- e. Function effectively as a dynamic individual, a team member, or as a leader in multi-cultural/cross-cultural work environment;
- f. Contribute to the generation, dissemination and preservation of engineering knowledge, methodologies, techniques, and processes;
- g. Engage in professional development and life-long learning;
- h. Conduct oneself within professional and ethical standards; and
- i. Perform independent industry research that results in innovation and practical application.

CURRICULUM OUTLINE

MASTER OF ENGINEERING MAJOR IN ENVIRONMENTAL ENGINEERING

Core Courses (9 units)		
Course Code	Course Title	Credit Units
ENGG 501	Computational Mathematics 1	3
ENGG 502	Computational Mathematics 2	3
ENGG 503	Design of Experiments and Data Analytics	3
Major Courses (9 units)		
Course Code	Course Title	Credit Units
ENGG 504	Applied Materials Science and Engineering	3
MEnE 501	Environmental Health Engineering	3
MEnE 502	Industrial Waste Management	3
Elective Courses (12 units)		
Course Code	Course Title	Credit Units
MEnE 503	Trends and Innovations in Environmental Engineering	3
MEnE 504	Water Quality Control and Management	3
MEnE 505	Environmental Geotechnology	3
MCE 503	Urban Hydrology	3
MEnE 506	Indoor Air Quality Management	3
MEnE 507	Environmental Impact Assessment	3
MCE 511	Groundwater Flow and Contaminant Transport	3
MEnE 508	Water Resources Planning and Development	3
MEnE 509	Biological Treatment Process Design	3
Capstone Project (6 units)		
Course Code	Course Title	Credit Units
ENGG 505	Industry - based Capstone Project 1	3
ENGG 506	Industry - based Capstone Project 2	3

\* 2 – 3 electives may be GIVEN CREDITS from RPL

MAPPING OF CURRICULAR COURSES TO STUDENT OUTCOMES

Course Code	Course Description	Student Outcomes								
		a	b	c	d	e	f	g	h	i
ENGG 501	Computational Mathematics 1	x								
ENGG 502	Computational Mathematics 2	x								
ENGG 503	Design of Experiments and Data Analytics		x	x	x					
ENGG 504	Applied Materials Science and Engineering	x			x					
MEnE 501	Environmental Health Engineering	x						x		
MEnE 502	Industrial Waste Management	x						x		
MEnE 503	Trends and Innovations in Environmental Engineering					x		x		
MEnE 504	Water Quality Control and Management							x		
MEnE 505	Environmental Geotechnology						x	x		

MCE 503	Urban Hydrology								X		
MEnE 506	Indoor Air Quality Management								X		
MEnE 507	Environmental Impact Assessment				X			X	X		
MCE 511	Groundwater Flow and Contaminant Transport								X		
MEnE 508	Water Resources Planning and Development			X	X				X		
MEnE 509	Biological Treatment Process Design			X					X		
ENGG 505	Industry - based Capstone Project 1							X		X	X
ENGG 506	Industry - based Capstone Project 2			X				X			X

SUGGESTED PROGRAM OF STUDY

Year 1		
First Semester		
Course Code	Course Title	Credit Units
ENGG 501	Computational Mathematics 1	3
MEnE 501	Environmental Health Engineering	3
MEnE 502	Industrial Waste Management	3
SUBTOTAL		9
Second Semester		
Course Code	Course Title	Credit Units
ENGG 502	Computational Mathematics 2	3
ENGG 504	Applied Materials Science and Engineering	3
ENGG 503	Design of Experiments and Data Analytics	3
SUBTOTAL		9
Year 2		
First Semester		
Course Code	Course Title	Credit Units
MEnE 5xx	Elective 1	3
MEnE 5xx	Elective 2	3
SUBTOTAL		6
Second Semester		
Course Code	Course Title	Credit Units
MEnE 5xx	Elective 3	3
MEnE 5xx	Elective 4	3
SUBTOTAL		6
Comprehensive Examination		
Year 3		
First Semester		
Course Code	Course Title	Credit Units
ENGG 505	Industry - based Capstone Project 1	3
SUBTOTAL		3
Second Semester		
Course Code	Course Title	Credit Units
ENGG 506	Industry - based Capstone Project 2	3
SUBTOTAL		3
TOTAL		36