Master of Engineering major in Electrical Engineering (M.Engg.E.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 electrical engineering specialists for the welfare of society;
2. demonstrate a high degree of professionalism in the workplace.

PROGRAM 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 ELECTRICAL 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
MEE 501	Service and Power Quality in Distribution Systems	3
MEE 502	Overcurrent Protection of Electric Distribution Networks	3
Elective Courses (12 units)		
Course Code	**Course Title**	**Credit Units**
MEE 503	Deregulated Power System	3
MEE 504	Advanced Theory of Electrical Machines	3
MEE 505	Fault Tolerant Power Systems	3
MEE 506	Power Market Economics and Security	3
MEE 507	Computer Applications on Power Systems	3
MEE 508	Economic Operation and Control of Power Systems	3
MEE 509	Surge and Line Protection	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 Title**	**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					
MEE 501	Service and Power Quality in Distribution Systems			x			x			x
MEE 502	Overcurrent Protection of Electric Distribution Networks			x		x	x			
MEE 503	Deregulated Power System					x		x		
MEE 504	Advanced Theory of Electrical Machines					x		x		

MEE 505	Fault Tolerant Power Systems					x		x		
MEE 506	Power Market Economics and Security					x		x		
MEE 507	Computer Applications on Power Systems					x		x		
MEE 508	Economic Operation and Control of Power Systems					x		x		
MEE 509	Surge and Line Protection					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
MEE 501	Service and Power Quality in Distribution Systems	3
MEE 502	Overcurrent Protection of Electric Distribution Networks	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**
MEE 5xx	Elective 1	3
MEE 5xx	Elective 2	3
	SUBTOTAL	**6**
Second Semester		
Course Code	**Course Title**	**Credit Units**
MEE 5xx	Elective 3	3
MEE 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**