Master of Engineering major in Electronics Engineering (M.Engg.E.C.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 electronics 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 ELECTRONICS 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
GECE 501	Linear Systems Theory	3
GECE 502	Modern Control Theory and Applications	3
Elective Courses (12 units)		
Course Code	**Course Title**	**Credit Units**
GECE 503	Management of Technology	3
GECE 504	Advanced Digital Signal Processing	3
GECE 505	Advanced Electromagnetic Theory	3
GECE 508	Special Topics in Communications	3
GECE 510	Digital Control	3
GECE 512	Nonlinear Systems	3
GECE 514	Advanced Image Processing	3
GECE 515	Artificial Intelligence for Cyber-physical Systems	3
GECE 517	Machine Learning	3
GECE 518	Neural Networks	3
GECE 522	Special Topics in Electronics	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 CURRICULUM 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					
GECE 501	Linear Systems Theory	x			x					
GECE 502	Modern Control Theory and Applications	x	x		x					
GECE 503	Management of Technology				x	x		x		

GECE 504	Advanced Digital Signal Processing				x	x		x		
GECE 505	Advanced Electromagnetic Theory				x	x		x		
GECE 508	Special Topics in Communications				x	x		x		
GECE 510	Digital Control				x	x		x		
GECE 512	Nonlinear Systems				x	x		x		
GECE 514	Advanced Image Processing				x	x		x		
GECE 515	Artificial Intelligence for Cyber-physical Systems				x	x		x		
GECE 517	Machine Learning				x	x		x		
GECE 518	Neural Networks				x	x		x		
GECE 522	Special Topics in Electronics				x	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
GECE 501	Linear Systems Theory	3
GECE 502	Modern Control Theory and Applications	3
	SUBTOTAL	**9**
Second Semester		
Course Code	**Course Title**	**Credit Units**
ENGG 502	Computational Mathematics 2	3
ENGG 503	Design of Experiments and Data Analytics	3
ENGG 504	Applied Materials Science and Engineering	3
	SUBTOTAL	**9**
Year 2		
First Semester		
Course Code	**Course Title**	**Credit Units**
GECE 5xx	Elective 1	3
GECE 5xx	Elective 2	3
	SUBTOTAL	**6**
Second Semester		
Course Code	**Course Title**	**Credit Units**
GECE 5xx	Elective 3	3
GECE 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**