Table of Specifications
in Philippine Electrical Code Parts 1 and 2 for RME Exams

Board of Electrical Engineering
Subject : PHILIPPINE ELECTRICAL CODE Parts 1 AND 2 FOR RME Exams
Weight : 50%

PQF Level : 5								
Bloom's Taxonomy			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Topics and Competencies The examinees can perform the following competencies under each topic:	Wgt 50%	No. of Item 50						
A. Requirements for Electrical Installations and Definitions	10%	10	1	2	5	2		
A.1 Recalling and comprehending the basic principles	3%	3	1	2				
A.2 Applying the principles in solving basic problems	5%	5			5			
A.3 Analyzing and solving complex problems	2%	2				2		
B. Wiring and Protection	7%	7	1	1	3	2		
B.1 Recalling and comprehending the basic principles	2%	2	1	1				
B.2 Applying the principles in solving basic problems	3%	3			3			
B.3 Analyzing and solving complex problems	2%	2				2		
C. Wiring Methods and Materials	5%	5	1		2	2		
C.1 Recalling and comprehending the basic principles	1%	1	1					
C.2 Applying the principles in solving basic problems	2%	2			2			
C3 Analyzing and solving complex problems	2%	2				2		
D. Equipment for General Use	4%	4	1		2	1		
D.1 Recalling and comprehending the basic principles	1%	1	1					
D.2 Applying the principles in solving basic problems	2%	2			2			
D.3 Analyzing and solving complex problems	1%	1				1		
E. Special Occupancies	3%	3	1		1	1		
E.1 Recalling and comprehending the basic principles	1%	1	1					
E.2 Applying the principles in solving basic problems	1%	1			1			
E.3 Analyzing and solving complex problems	1%	1				1		
F. Special Equipments	3%	3	1		2			
F.1 Recalling and comprehending the basic principles	1%	1	1					
F.2 Applying the principles in solving basic problems	2%	2			2			
F.3 Analyzing and solving complex problems								
G. Special Conditions & Com. Systems	2%	2	1		1			
G.1 Recalling and comprehending the basic principles	1%	1	1					
G.2 Applying the principles in solving basic problems	1%	1			1			
G.3 Analyzing and solving complex problems								
H. Philippine Electrical Code 2	6%	6	1	1	3	1		
H.1 Recalling and comprehending the basic principles	2%	2	1	1				
H.2 Applying the principles in solving basic problems	3%	3			3			
H.3 Analyzing and solving complex problems	1%	1				1		
I. Safety	7%	7	1	1	4	1		
I.1 Recalling and comprehending the basic principles	2%	2	1	1				
I.2 Applying the principles in solving basic problems	4%	4			4			
I.3 Analyzing and solving complex problems	1%	1				1		
J. Others	3%	3	1		2			
J.1 Recalling and comprehending the basic principles	1%	1	1					
J.2 Applying the principles in solving basic problems	2%	2			2			
J.3 Analyzing and solving complex problems								
Total	50%	50	10	5	25	10		
				15	25	10		

Table of Specifications
in Engineering Sciences and Allied Subjects for Registered Electrical Engineering Examination

Board of Electrical Engineering
Subject : Engineering Sciences and Allied Subjects
Weight: 30%

PQF Descriptor Level 6								
Bloom's Taxonomy			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Topics and Outcome	Wgt	No. of Item						
	30%	100						
The examinees can perform the following competencies under each topic:								
A. Chemistry for Engineers*	1.5%	5	1	1	2	1		
A.1 Recalling and comprehending the basic principles	0.6	2	1	1				
A.2 Applying the principles in solving basic problems	0.6	2			2			
A.3 Analyzing and solving complex problems	0.3	1				1		
B. Physics for Engineers*	4.5%	15	2	3	6	4		
B.1 Recalling and comprehending the basic principles	1.5	5	2	3				
B.2 Applying the principles in solving basic problems	1.8	6			6			
B.3 Analyzing and solving complex problems	1.2	4				4		
C. Computer Programming, Microprocessor Systems and Logic Circuits and Switching Theory*	4.5%	15	2	2	7	4		
C.1 Recalling and comprehending the basic principles	1.2	4	2	2				
C.2 Applying the principles in solving basic problems	2.1	7			7			
C.3 Analyzing and solving complex problems	1.2	4				4		
D. Materials Science, Environmental Science & Engineering*	1.5%	5	1	1	2	1		
D.1 Recalling and comprehending the basic principles	0.6	2	1	1				
D.2 Applying the principles in solving basic problems	0.6	2			2			
D..3 Analyzing and solving complex problems	0.3	1				1		
E. Fluid Mechanics*	1.5%	5	1	1	2	1		
E.1 Recalling and comprehending the basic principles	0.6	2	1	1				
E.2 Applying the principles in solving basic problems	0.6	2			2			
E.3 Analyzing and solving complex problems	0.3	1				1		
F. Fundamental of Deformable Bodies*	1.5%	5	1	1	2	1		
F.1 Recalling and comprehending the basic principles	0.6	2	1	1				
F.2 Applying the principles in solving basic problems	0.6	2			2			
F.3 Analyzing and solving complex problems	0.3	1				1		
G. Basic Thermodynamics*	1.5%	5	2	2	1			
G.1 Recalling and comprehending the basic principles	1.2	4	2	2				
G.2 Applying the principles in solving basic problems	0.3	1			1			
G.3 Analyzing and solving complex problems	0%							
H. EE Laws, Codes, Professional Ethics, BOSH & Electrical Standards and Practices*	6.0%	20	2	2	13	3		
H.1 Recalling and comprehending the basic principles	1.2	4	2	2				
H.2 Applying the principles in solving basic problems	3.9	13			13			
H.3 Analyzing and solving complex problems	0.9	3				3		
I. Engineering Economics*	4.5%	15	2	1	9	3		
I.1 Recalling and comprehending the basic principles	0.9	3	2	1				
I.2 Applying the principles in solving basic problems	2.7	9			9			
I.3 Analyzing and solving complex problems	0.9	3				3		
J. Technopreneurship 101 and Management of Engineering Projects*	3.0%	10	1	1	6	2		
J.1 Recalling and comprehending the basic principles	0.6	2	1	1				
J.2 Applying the principles in solving basic problems	1.8	6			6			
J.3 Analyzing and solving complex problems	0.6	2				2		
Total (for 100 items)	30%	100	15	15	50	20		
				30		50	20	

Note: * Based on the syllabi as per CMO no. 88 Series of 2017 - PSG for BSEE
* Course Outline for Basic Thermodynamics

Chemistry - Solar cells, energy storage, battery, photosynthesis, rtenerwable energy

	After completing this course, the student must be able to:
Course Outcomes	1. Understand the principles underlying the utilization of energy in thermal systems, open and closed systems; and 2. Know the vapor and gas cycles.

Course Outline	1. Introduction
	 2. Basic Principles, Concepts, and Definitions
	 3. First Law of Thermodynamics
	 4. Ideal Gases
	    4.1. Ideal Gas Laws
	    4.2. Processes of Ideal Gases
	 5. Pure Substances
	    5.1. Properties of Pure Substances
	    5.2. Processes of Pure Substances
	 6. Introduction to Cycle Analysis: Second Law of Thermodynamics
	 7. Introduction to Gas and Vapor Cycles

2. **NATURAL/PHYSICAL SCIENCES**
   2.1 Chemistry for Engineers
   2.2 Physics for Engineers

3. **BASIC ENGINEERING SCIENCES**
   3.1 Computer-aided Drafting
   3.2 Engineering Mechanics
   3.3 Engineering Economics
   3.4 Technopreneurship 101 (refer to No. 7)

4. **ALLIED COURSES**
   4.1. Fundamentals of Deformable Bodies
   4.2. Electronic Circuits: Devices and Analysis
   4.3. Basic Thermodynamics
   4.4. Industrial Electronics
   4.5. Electromagnetics
   4.6. Fluid Mechanics
   4.7. Fundamentals of Electronic Communications
   4.8. Logic Circuits and Switching Theory
   4.9. Microprocessor Systems
   4.10. Computer Programming
   4.11. Basic Occupational Safety and Health
   4.12. Environmental Science and Engineering
   4.13. Materials Science and Engineering

5. **PROFESSIONAL COURSES**
   5.1. Numerical Methods and Analysis
   5.2. Management of Engineering Projects
   5.3. EE Law, Codes, and Professional Ethics
   5.4. Electrical Standards and Practices
   5.5. Electrical Circuits 1
   5.6. Electrical Circuits 2
   5.7. Electrical Apparatus and Devices
   5.8. Electrical Machines 1
   5.9. Electrical Machines 2
   5.10. Engineering Mathematics for EE

Table of Specifications
in Technical Subjects for RME Exams

Board of Electrical Engineering
Subject : TECHNICAL SUBJECTS
Weight : 50%

PQF Level : 5

Bloom's Taxonomy Topics and Outcome	Wgt	No. of Item	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
The examinees can perform the following competencies under each topic:	50%	50						
A. Ohm's Law	10%	10	1	2	4	3		
A.1 Recalling and comprehending the basic principles	3%	3	1	2				
A.2 Applying the principles in solving basic problems	4%	4			4			
A.3 Analyzing and solving complex problems	3%	3				3		
B. Electrical Machines	5%	5	1	1	2	1		
B.1 Recalling and comprehending the basic principles	2%	2	1	1				
B.2 Applying the principles in solving basic problems	2%	2			2			
B.3 Analyzing and solving complex problems	1%	1				1		
C. Control Equipment	5%	5	1		3	1		
C.1 Recalling and comprehending the basic principles	1%	1	1					
C.2 Applying the principles in solving basic problems	3%	3			3			
C.3 Analyzing and solving complex problems	1%	1				1		
D. Electrical Components	5%	5	1	1	2	1		
D.1 Recalling and comprehending the basic principles	2%	2	1	1				
D.2 Applying the principles in solving basic problems	2%	2			2			
D.3 Analyzing and solving complex problems	1%	1				1		
E. Maintenance & Repair of Electrical Machinery	5%	5	1		3	1		
E.1 Recalling and comprehending the basic principles	1%	1	1					
E.2 Applying the principles in solving basic problems	3%	3			3			
E.3 Analyzing and solving complex problems	1%	1				1		
F. Test Equipment	4%	4	1		2	1		
F.1 Recalling and comprehending the basic principles	1%	1	1					
F.2 Applying the principles in solving basic problems	2%	2			2			
F.3 Analyzing and solving complex problems	1%	1				1		
G. Electrical Engineering Law	3%	3	1		2			
G.1 Recalling and comprehending the basic principles	1%	1	1					
G.2 Applying the principles in solving basic problems	2%	2			2			
G.3 Analyzing and solving complex problems								
H. BOSH	5%	5	1	1	2	1		
H.1 Recalling and comprehending the basic principles	2%	2	1	1				
H.2 Applying the principles in solving basic problems	2%	2			2			
H.3 Analyzing and solving complex problems	1%	1				1		
I. Electrical Safety	5%	5	1		3	1		
I.1 Recalling and comprehending the basic principles	1%	1	1					
I.2 Applying the principles in solving basic problems	3%	3			3			
I.3 Analyzing and solving complex problems	2%	1				1		
J. Others	6%	3	1		2			
J.1 Recalling and comprehending the basic principles	1%	1	1					
J.2 Applying the principles in solving basic problems	2%	2			2			
J.3 Analyzing and solving complex problems								
Total	50%	50	10	5	25	10		
				15	25	10		

Table of Specifications
in Electrical Engineering for Registered Electrical Engineering Examination

Board of Electrical Engineering
Subject: Electrical Engineering
Weight: 45%

PQF Descriptor Level 6								
Bloom's Taxonomy			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Topics and Competencies	Wgt	No. of Item						
	45%	100						
The examinees can perform the following competencies under each topic:								
A. Electromagnetism *	4.50%	10	2	1	6	1		
A.1 Recalling and comprehending the basic principles	1.35	3	2	1				
A.2 Applying the principles in solving basic problems	2.70	6			6			
A.3 Analyzing and solving complex problems	0.45	1				1		
B. Electric Circuits 1*	4.50%	10	1	2	5	2		
B.1 Recalling and comprehending the basic principles	1.35	3	1	2				
B.2 Applying the principles in solving basic problems	2.25	5			5			
B.3 Analyzing and solving complex problems	0.90	2				2		
C. Electric Circuits 2*	4.50%	10	1	1	5	3		
C.1 Recalling and comprehending the basic principles	0.90	2	1	1				
C.2 Applying the principles in solving basic problems	2.25	5			5			
C.3 Analyzing and solving complex problems	1.35	3				3		
D. Fundamentals of Electronic Comminications, Electronics 1 and 2 *	2.25%	5	1	1	2	1		
D.1 Recalling and comprehending the basic principles	0.90	2	1	1				
D.2 Applying the principles in solving basic problems	0.90	2			2			
D..3 Analyzing and solving complex problems	0.45	1				1		
E. Electrical Apparatus & Devices, Industrial Electronics*	2.25%	5		1	2	2		
E.1 Recalling and comprehending the basic principles	0.45	1		1				
E.2 Applying the principles in solving basic problems	0.90	2			2			
E.3 Analyzing and solving complex problems	0.90	2				2		
F. Electrical Machinery 1 *	2.25%	5	1	1	2	1		
F.1 Recalling and comprehending the basic principles	0.90	2	1	1				
F.2 Applying the principles in solving basic problems	0.90	2			2			
F.3 Analyzing and solving complex problems	0.45	1				1		
G. Electrical Machinery 2*	4.50%	10	2	1	5	2		
G.1 Recalling and comprehending the basic principles	1.35	3	2	1				
G.2 Applying the principles in solving basic problems	2.25	5			5			
G.3 Analyzing and solving complex problems	0.90	2				2		
H. Instrumentation & Control, Feedback Control System and Research Methods*	4.50%	10	1	2	5	2		
H.1 Recalling and comprehending the basic principles	1.35	3	1	2				
H.2 Applying the principles in solving basic problems	2.25	5			5			
H.3 Analyzing and solving complex problems	0.90	2				2		
I. Electrical Systems & Illumination Engineering Design*	4.50%	10	1	1	6	2		
I.1 Recalling and comprehending the basic principles	0.90	2	1	1				
I.2 Applying the principles in solving basic problems	2.70	6			6			
I.3 Analyzing and solving complex problems	0.90	2				2		
J. Fundamental of Power Plants Engineering Designs and Distribution Systems and Substation Design*	2.25%	5	1	1	2	1		
J.1 Recalling and comprehending the basic principles	0.90	2	1	1				
J.2 Applying the principles in solving basic problems	0.90	2			2			
J.3 Analyzing and solving complex problems	0.45	1				1		
K. Power System Analysis*	9.00%	20	4	3	10	3		
K.1 Recalling and comprehending the basic principles	3.15	7	4	3				
K.2 Applying the principles in solving basic problems	4.50	10			10			
K.3 Analyzing and solving complex problems	1.35	3				3		
Total (for 100 items)	45%	100	15	15	50	20		
				30	50	20		

Note: * Based on the syllabi as per CMO no. 88 Series of 2017 - PSG for BSEE
*Sample Course Outline for Electric Circuits !

Course Outline	1. DC/AC Sources and Electrical Circuit Components, Voltage and Current Laws
	2. Nodal and Mesh Analysis
	  a. General nodal analysis
	  b. General mesh analysis
	3. Circuit Analysis Techniques
	  a. Linearity and superposition
	  b. Source transformation
	  c. Thevenin and Norton equivalent circuits
	  d. Maximum power transfer
	  e. Delta-wye conversion
	  f. Circuits with controlled sources and the ideal op amp
	4. Characteristics of Energy-storing Elements
	  a. Capacitors and capacitance
	  b. Inductors and inductance

	5. Analysis of RL and RC Circuits
	a. Source-free RL and RC circuits
	b. Driven RL and RC circuits
	6. Analysis of RLC circuits
	a. Source-free series and parallel RLC circuits
	b. Complete response of RLC circuits
	7. Sinusoidal Steady-state Analysis in the Frequency Domain
	a. The phasor concept and phasor diagram
	b. Concept of impedance and admittance
	c. Nodal and mesh analysis
Laboratory Equipment	Refer to Annex IV-B – Recommended Laboratory Requirements

4. ALLIED COURSES
4.1. Fundamentals of Deformable Bodies
4.2. Electronic Circuits: Devices and Analysis
4.3. Basic Thermodynamics
4.4. Industrial Electronics
4.5. Electromagnetics
4.6. Fluid Mechanics
4.7. Fundamentals of Electronic Communications
4.8. Logic Circuits and Switching Theory
4.9. Microprocessor Systems
4.10. Computer Programming
4.11. Basic Occupational Safety and Health
4.12. Environmental Science and Engineering
4.13. Materials Science and Engineering

5. PROFESSIONAL COURSES
5.1. Numerical Methods and Analysis
5.2. Management of Engineering Projects
5.3. EE Law, Codes, and Professional Ethics
5.4. Electrical Standards and Practices
5.5. Electrical Circuits 1
5.6. Electrical Circuits 2
5.7. Electrical Apparatus and Devices
5.8. Electrical Machines 1
5.9. Electrical Machines 2
5.10. Engineering Mathematics for EE

5.11. Electrical Systems and Illumination Engineering Design
5.12. Power Systems Analysis
5.13. Fundamentals of Power Plant Engineering Design
5.14. Distribution Systems and Substation Design
5.15. Research Methods
5.16. Research Project or Capstone Design Project
5.17. Instrumentation and Control
5.18. Feedback Control Systems
5.19. Seminars/Colloquia
5.20. On-the-job Training
5.21. Elective 1
5.22. Elective 2

Table of Specifications
in Mathematics for Registered Electrical Enginers Exam

Board of Electrical Engineering
Subject : MATHEMATICS
Weight : 25%

PQF Level : 6								
Bloom's Taxonomy			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Topics and Competencies	Wgt	No. of Item						
The examinees can perform the following competencies under each topic:	25%	100						
A. Algebra & Complex Numbers	1.25%	5	1	1	2	1		
A.1 Recalling and comprehending the basic principles	0.50%	2	1	1				
A.2 Applying the principles in solving basic problem	0.50%	2			2			
A.3 Analyzing and solving complex problems	0.25%	1				1		
B. Trigonometry	1.25%	5	1	1	2	1		
B.1 Recalling and comprehending the basic principles	0.50%	2	1	1				
B.2 Applying the principles in solving basic problems	0.50%	2			2			
B.3 Analyzing and solving complex problems	0.25%	1				1		
C. Analytic Geometry	1.25%	5	1		3	1		
C.1 Recalling and comprehending the basic principles	0.25%	1	1					
C.2 Applying the principles in solving basic problems	0.75%	3			3			
C.3 Analyzing and solving complex problems	0.25%	1				1		
D. Probability & Statistics	1.25%	5	1		3	1		
D.1 Recalling and comprehending the basic principles	0.25%	1	1					
D.2 Applying the principles in solving basic problems	0.75%	3			3			
D.3 Analyzing and solving complex problems	0.25%	1				1		
E. Calculus 1	3.75%	15	3	2	7	3		
E.1 Recalling and comprehending the basic principles	1.25%	5	3	2				
E.2 Applying the principles in solving basic problems	1.75%	7			7			
E.3 Analyzing and solving complex problems	0.75%	3				3		
F. Calculus 2	3.75%	15	2	2	8	3		
F.1 Recalling and comprehending the basic principles	1.00%	4	2	2				
F.2 Applying the principles in solving basic problems	2.00%	8			8			
F.3 Analyzing and solving complex problems	0.75%	3				3		
G. Engineering Data Analysis	5.00%	20	3	3	12	2		
G.1 Recalling and comprehending the basic principles	1.50%	6	3	3				
G.2 Applying the principles in solving basic problems	3.00%	12			12			
G.3 Analyzing and solving complex problems	0.50%	2				2		
H. Differential Equations	3.75%	15	3	2	7	3		
H.1 Recalling and comprehending the basic principles	1.25%	5	3	2				
H.2 Applying the principles in solving basic problems	1.75%	7			7			
H.3 Analyzing and solving complex problems	0.75%	3				3		
I. Numerical Methods & Analysis	3.75%	15	2	2	6	5		
I.1 Recalling and comprehending the basic principles	1.00%	4	2	2				
I.2 Applying the principles in solving basic problems	1.50%	6			6			
I.3 Analyzing and solving complex problems	1.25%	5				5		
Total	25%	100	17	13	50	20		
				30		50	20	

ENGINEERING MATHEMATICS FOR EE

CMO 88 S. 2017
Calculus 1

Calculus 2

Engineering Data Analysis

Differential Equations

Mathematics in the Modern World

NUMERICAL METHODS AND ANALYSIS