



TECHNOLOGICAL INSTITUTE OF THE PHILIPPINES

2023 CURRICULUM FOR BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING (BSEE)

(203 units)

COURSE CODE	DESCRIPTIVE TITLE	Lecture Hours			Laboratory Hours			PREREQUISITE(S)/ COREQUISITE(S)
		Lecture	Discussion	Recitation	Laboratory	Workshop	Credit Units	
FIRST YEAR, FIRST SEMESTER (20 UNITS)								
CHM 001	Chemistry for Engineers	3	3	4				
MATH 141	Calculus 1	4	0	4				
MATH 025	Discrete Mathematics	3	0	3				
EE 111	Introduction to Electrical Engineering	1	0	1				
MATH 131	Engineering Mathematics	3	0	3				
PE 001	Physical Activities Toward Health and Fitness 1 (PATHFit 1)	2	0	2				
NSTP 001	National Service Training Program 1	3	0	3				
FIRST YEAR, SECOND SEMESTER (22 UNITS)								
PHYS 111	Calculus-Based Physics	3	3	4			MATH 141 (P)	
MATH 242	Calculus 2	4	0	4			MATH 141 (P), MATH 131(P)	
GEC 004	Mathematics in the Modern World	3	0	3				
CHM 008	Environmental Science and Engineering	3	0	3				
GEE 001B	GE Elective 1- Gender and Society	3	0	3				
PE 002	Physical Activities Toward Health and Fitness 2 (PATHFit 2)	2	0	2			PE 001 (P)	
NSTP 002	National Service Training Program 2	3	0	3			NSTP 001 (P)	
SECOND YEAR, FIRST SEMESTER (28 UNITS)								
EE 200	Electrical Circuits 1	3	3	4			PHYS 111 (P)	
MATH 021	Differential Equations	3	0	3			MATH 242 (P)	
GEC 003	The Contemporary World	3	0	3				
CE 201B	Engineering Mechanics	3	0	3			PHYS 111 (P)	
GEE 003C	GE Elective 3- Entrepreneurial Mind	3	0	3				
ME 201A	Thermodynamics	3	0	3			CHM 001 (P), PHYS 111 (P)	
GEE 002B	G.E. Elective 2- Living in the IT Era	3	0	3				
PE 003	Physical Activities Toward Health and Fitness 3 (PATHFit 3)	2	0	2			PE 002 (P)	
MATH 022B	Linear Algebra with MATLAB	2	3	3			MATH 242 (P), MATH 025 (P)	
CPE 102A	Computer Programming	0	3	1				
SECOND YEAR, SECOND SEMESTER (28 UNITS)								
EE 202	Electrical Circuits 2	3	3	4			EE 200 (P), MATH 021 (P)	
EE 201	Electromagnetics for EE	2	0	2			EE 200 (P)	
MATH 024D	Engineering Mathematics for EE	3	0	3			CPE 102A (P), MATH 021 (P), MATH 022B (P)	
ECE 200A	Electronic Circuits: Devices and Analysis	3	3	4			EE 200 (P)	
CE 205A	Fundamentals of Deformable Bodies	2	0	2			CE 201B (P)	
CE 309A	Fluid Mechanics	2	0	2			PHYS 111 (P)	
GEC 008	Ethics	3	0	3				
MATH 026A	Numerical Methods and Analysis	2	3	3			MATH 022B (P)	
MATH 027C	Engineering Data Analysis 1	3	0	3			MATH 141 (P)	
PE 004	Physical Activities Toward Health and Fitness 4 (PATHFit 4)	2	0	2			PE 003 (P)	
THIRD YEAR, FIRST SEMESTER (26 UNITS)								
EE 304	Electrical Machines 1	2	0	2			EE 202 (P), EE 201 (P)	
EE 340	Industrial Power Electronics	3	3	4			ECE 200A (P), EE 202 (P)	
CPE 203	Logic Circuits and Switching Theory	3	3	4			ECE 200A (P)	
ME 304	Engineering Economics	3	0	3			MATH 027C (P)	
IE 321	Engineering Data Analysis 2	0	3	1			MATH 027C (P)	
CHM 007	Materials Science and Engineering	3	0	3			CHM 001 (P)	
GEM 001	Life and Works of Rizal	3	0	3				
GEC 002	Readings in Philippine History	3	0	3				
EE ELEC 1	EE Elective 1	3	0	3			See track for pre-requisite(s)	
THIRD YEAR, SECOND SEMESTER (26 UNITS)								
EE 310	Control Systems Analysis	2	0	2			EE 202 (P), MATH 024D (P), MATH 026A (P)	
EE 303	Integration Course in Mathematics	2	0	2			MATH 024D (P)	
EE 305	Electrical Machines 2	3	3	4			EE 304 (P)	
EE 306	Electrical Apparatus and Devices	2	3	3			EE 202 (P), MATH 027C (P)	
EE 308	Research Methods	0	3	1			IE 321 (P)	
COE 312	Fundamentals of Intellectual Property	0	3	1			EE 308 (C)	
GEC 001	Understanding the Self	3	0	3				
EE 309	EE Law, Codes and Professional Ethics	2	0	2			GEC 008 (P)	
CPE 405A	Microprocessor Systems	3	3	4			CPE 203 (P)	
CADD 001A	Computer-Aided Drafting	0	3	1			3rd Year Standing	
EE ELEC 2	EE Elective 2	3	0	3			See track for pre-requisite(s)	

NO STUDENT SHALL BE ALLOWED TO TAKE FOURTH YEAR PROFESSIONAL COURSES UNLESS HE HAS COMPLETED THE BASIC AND THE THIRD YEAR COURSES INCLUDING PE AND NSTP.

COURSE CODE	DESCRIPTIVE TITLE	Lecture Hours			Laboratory Hours			PREREQUISITE(S)/ COREQUISITE(S)
		Lecture Hours	Laboratory Hours	Credit Units				
THIRD YEAR, SUMMER (9 UNITS)								
EE	400	Electrical Standards and Practices	0	3	1	EE 309 (P)		
EE	430	Management of EE Projects	2	0	2	ME 304 (P)		
BOSH	101	Basic Occupational Safety and Health	3	0	3			
ECE	204A	Principles of Electronic Communications	3	0	3	ECE 200A (P)		
FOURTH YEAR, FIRST SEMESTER (27 UNITS)								
EE	410	Electrical Systems and Illumination Engineering Design	3	6	5	EE 306 (P)		
EE	431	EE Design Project 1	2	3	3	EE 305 (P), EE 306 (P), EE 308 (P)		
EE	432	Instrumentation and Control	2	3	3	EE 310 (P)		
EE	407	Integration Course in Engineering Sciences	2	0	2	EE 303 (P)		
EE	415	Power System Analysis	3	3	4	EE 305 (P), EE 306 (P)		
EE	416	Power Plant Engineering and Generating Substation Design	0	3	1	EE 415 (C)		
GEC	005	Purposive Communication	3	0	3			
EE	417A	Transmission and Distribution Systems with Substation	2	3	3	EE 415 (C)		
EE	ELEC 3	EE ELECTIVE 3	3	0	3	See track for pre-requisite(s)		
FOURTH YEAR, SECOND SEMESTER (17 UNITS)								
EE	312	On-the-Job-Training for EE	0	240	2	Graduating (P)		
GEC	007	Science, Technology and Society	3	0	3			
TECH	101A	Technology Entrepreneurship	3	0	3	Graduating (P)		
GEC	006	Art Appreciation	3	0	3			
EE	414	EE Design Project 2	1	6	3	Graduating (P), EE 431 (P)		
EE	418	Seminars/Colloquia	0	3	1	Graduating (P)		
EE	419	Integration Course in Electrical Engineering	2	0	2	Graduating (P), EE 407 (P)		
Total No. of Units : 203								
Elective Courses: 9 Credit Units								
A student can choose any of the three (3) tracks below and once a track is chosen, all courses in the track must be taken.								
TRACK ELECTIVE 1: Power System Economics								
PSE	420	Power System Reliability and Planning	3	0	3	MATH 027C (P), EE 202 (P) EE 202		
PSE	421	Power Quality and Demand Side Management	3	0	3	PSE 420 (P)		
PSE	422	Power System Market Operation	3	0	3	PSE 421 (P)		
TRACK ELECTIVE 2: Power System Automation and Renewable Energy								
PSA	422	Renewable Energy Systems Integration	3	0	3	EE 304 (C)		
PSA	423	Smart Grid Application in Power System	3	0	3	PSA 422 (P)		
PSA	424	Advanced Automation in Distribution System	3	0	3	PSA 423 (P)		
TRACK ELECTIVE 3: Railway Engineering								
RWE	001	Introduction to Railway Systems and Engineering	3	0	3			
RWE	002A	Railway Management and Governance and Operations	3	0	3	RWE 001 (P)		
RWE	003	Railway Power System and Protection	3	0	3	RWE 002A (P)		