BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

(Curriculum applicable to students who entered as freshmen beginning academic year 2015-2016)

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
1	1	CHM11-3	GENERAL CHEMISTRY 1	3.0	-	2.0			CHE-CHM
		CHM11-3L	GENERAL CHEMISTRY LABORATORY 1	-	4.5	1.0		CHM11-3	CHE-CHM
		COE111	INTRODUCTION TO COMPUTER ENGINEERING	1.5	-	1.0			EECE
		FIL10	FILIPINO 1	4.5	-	3.0			SLHS
		MATH10-3	ALGEBRA	4.5	-	3.0			MATH
		MATH12-1	PLANE AND SPHERICAL TRIGONOMETRY	4.5	-	3.0			MATH
		NSTP1	NATIONAL SERVICE TRAINING PROGRAM 1	-	4.5	(1.5)			SOCIP
		PE11-1	PHYSICAL EDUCATION 1 (PHYSICAL FITNESS AND GROUP GAMES)	-	3.0	(2.0)			ATHLETICS
			Total	**18.0**	**12.0**	**13.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
1	2	CHM12-3	GENERAL CHEMISTRY 2	3.0	-	2.0	CHM11-3, CHM11-3L		CHE-CHM
		CHM12-3L	GENERAL CHEMISTRY LABORATORY 2	-	4.5	1.0	CHM11-3, CHM11-3L	CHM12-3	CHE-CHM
		COE112	COMPUTER FUNDAMENTALS AND PROGRAM LOGIC FORMULATION	4.5	-	3.0	MATH10-3		EECE
		CS10-2L	INTRODUCTION TO PROGRAMMING LABORATORY	-	4.5	1.0	MATH10-3	COE112	SOIT
		FIL11	FILIPINO 2	4.5	-	3.0			SLHS
		MATH10-4	ADVANCED ALGEBRA	4.5	-	3.0	MATH10-3		MATH
		MATH13-1	SOLID MENSURATION	3.0	-	2.0	MATH12-1		MATH
		NSTP2	NATIONAL SERVICE TRAINING PROGRAM 2	-	4.5	(1.5)	NSTP1		SOCIP
		PE12	PHYSICAL EDUCATION 2 (DANCE, MARTIAL ARTS AND BOARD GAMES)	-	3.0	(2.0)			ATHLETICS
			Total	**19.5**	**16.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
1	3	COE113	COMPUTER PROGRAMMING	4.5	-	3.0	COE112, CS10-2L		EECE
		COE113L	COMPUTER PROGRAMMING LABORATORY	-	4.5	1.0	COE112, CS10-2L	COE113	EECE
		DRAW10W	ENGINEERING DRAWING	-	4.5	1.0			MVA
		ENG10	ENGLISH FOR ACADEMIC PURPOSES 1	4.5	-	3.0			SLHS
		MATH21-1	CALCULUS 1	7.5	-	5.0	MATH13-1, MATH10-4		MATH
		SSE01	SOCIAL SCIENCE ELECTIVE	4.5	-	3.0			SLHS

	NSTP3	NATIONAL SERVICE TRAINING PROGRAM 3	-	4.5	(1.5)	NSTP2		SOCIP
	PE13-2	PHYSICAL EDUCATION 3 (INDIVIDUAL / DUAL SPORTS)	-	3.0	(2.0)			ATHLETICS
		Total	**21.0**	**16.5**	**16.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
1	4	COE114	ADVANCED COMPUTER PROGRAMMING	4.5	-	3.0	COE113		EECE
		COE114L	ADVANCED COMPUTER PROGRAMMING LABORATORY	-	4.5	1.0	COE113, COE113L	COE114	EECE
		ENG11	ENGLISH FOR ACADEMIC PURPOSES 2	4.5	-	3.0	ENG10		SLHS
		MATH22-1	CALCULUS 2	7.5	-	5.0	MATH21-1		MATH
		SSE02	SOCIAL SCIENCE ELECTIVE	4.5	-	3.0			SLHS
		NSTP4	NATIONAL SERVICE TRAINING PROGRAM 4	-	4.5	(1.5)	NSTP3		SOCIP
		PE14	PHYSICAL EDUCATION 4 (TEAM SPORTS)	-	3.0	(2.0)			ATHLETICS
			Total	**21.0**	**12.0**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
2	1	CAD10L	COMPUTER-AIDED DRAFTING	-	4.5	1.0	DRAW10W		MVA
		ENV20	INTRODUCTION TO ENVIRONMENTAL ENGINEERING	3.0	-	2.0	CHM12-3		CHE-CHM
		MATH15-1	LINEAR ALGEBRA	3.0	-	2.0	MATH13-1, MATH10-4		MATH
		MATH23-1	CALCULUS 3	4.5	-	3.0	MATH22-1		MATH
		PHY10	GENERAL PHYSICS 1	3.0	-	2.0	MATH22-1		PHYSICS
		PHY10L	GENERAL PHYSICS LABORATORY 1	-	4.5	1.0	MATH22-1	PHY10	PHYSICS
		RZL10	RIZAL'S WORKS & WRITINGS OF OTHER FILIPINO HEROES	4.5	-	3.0			SLHS
			Total	**18.0**	**9.0**	**14.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
2	2	COE128	DISCRETE MATHEMATICS	4.5	-	3.0	MATH10-4		EECE
		HME01	HUMANITIES ELECTIVE	4.5	-	3.0			SLHS
		MATH24-1	DIFFERENTIAL EQUATIONS	4.5	-	3.0	MATH23-1		MATH
		PHY11	GENERAL PHYSICS 2	3.0	-	2.0	PHY10, PHY10L		PHYSICS
		PHY11L	GENERAL PHYSICS LABORATORY 2	-	4.5	1.0	PHY10, PHY10L	PHY11	PHYSICS
		SSE03	SOCIAL SCIENCE ELECTIVE	4.5	-	3.0			SLHS
			Total	**21.0**	**4.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
2	3	COE116	DATA STRUCTURES AND ALGORITHM	4.5	-	3.0	COE114		EECE
		COE116L	DATA STRUCTURES AND ALGORITHM LABORATORY	-	4.5	1.0	COE114, COE114L	COE116	EECE
		HME02	HUMANITIES ELECTIVE	4.5	-	3.0			SLHS
		MATH16-1L	INTRODUCTION TO SCIENTIFIC COMPUTING	-	4.5	1.0	MATH22-1, COE113, COE113L		MATH
		MEC30	STATICS OF RIGID BODIES	4.5	-	3.0	PHY11, PHY11L		CEGE
		PHY12	GENERAL PHYSICS 3	3.0	-	2.0	PHY11, PHY11L		PHYSICS
		PHY12L	GENERAL PHYSICS LABORATORY 3	-	4.5	1.0	PHY11, PHY11L	PHY12	PHYSICS
		Total		**16.5**	**13.5**	**14.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
2	4	BIO20-1	INTRODUCTION TO BIOELECTRONICS AND BIOINFORMATION ENGINEERING	4.5	-	3.0	CHM12-3		CHE-CHM
		COE115-1L	COMPUTER HARDWARE AND TROUBLESHOOTING LABORATORY 1	-	4.5	1.0	COE112		EECE
		ECE50	ADVANCED ENGINEERING MATHEMATICS	4.5	-	3.0	MATH24-1		EECE
		HME03	HUMANITIES ELECTIVE	4.5	-	3.0			SLHS
		MEC31-1	DYNAMICS OF RIGID BODIES	3.0	-	2.0	MEC30		MME
		PHY13	GENERAL PHYSICS 4	3.0	-	2.0	PHY12, PHY12L		PHYSICS
		PHY13L	GENERAL PHYSICS LABORATORY 4	-	4.5	1.0	PHY12, PHY12L	PHY13	PHYSICS
		Total		**19.5**	**9.0**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
3	1	COE115-2L	COMPUTER HARDWARE AND TROUBLESHOOTING LABORATORY 2	-	4.5	1.0	COE115-1L		EECE
		COE60	NUMERICAL METHODS	4.5	-	3.0	MATH24-1		EECE
		ECE103	ELECTRONICS 1	4.5	-	3.0	PHY12, MATH24-1		EECE
		ECE103L	ELECTRONICS 1 LABORATORY	-	4.5	1.0	PHY12L, PHY12, MATH24-1	ECE103	EECE
		EE101	ELECTRICAL CIRCUITS 1	4.5	-	3.0	PHY12, MATH24-1		EECE
		EE101L	ELECTRICAL CIRCUITS LABORATORY 1	-	4.5	1.0	PHY12, PHY12L, MATH24-1	EE101	EECE
		MEC32	MECHANICS OF DEFORMABLE BODIES	4.5	-	3.0	MEC31-1		CEGE
		Total		**18.0**	**13.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
3	2	COE117	LOGIC CIRCUITS AND SWITCHING THEORY	4.5	-	3.0	ECE103, ECE103L		EECE
		COE117L	LOGIC CIRCUITS AND SWITCHING THEORY LABORATORY	-	4.5	1.0	ECE103, ECE103L	COE117	EECE
		ECE104	ELECTRONICS 2	4.5	-	3.0	ECE103		EECE
		ECE104L	ELECTRONICS 2 LABORATORY	-	4.5	1.0	ECE103, ECE103L	ECE104	EECE
		EE103	ELECTRICAL CIRCUITS 2	4.5	-	3.0	EE101		EECE
		EE103L	ELECTRICAL CIRCUITS LABORATORY 2	-	4.5	1.0	EE101, EE101L	EE103	EECE
		EE40	ENGINEERING ECONOMY	4.5	-	3.0	3rd Year Standing		EECE
			Total	**18.0**	**13.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
3	3	COE118	ADVANCED LOGIC CIRCUITS AND SWITCHING THEORY	4.5	-	3.0	COE117		EECE
		COE118L	ADVANCED LOGIC CIRCUITS AND SWITCHING THEORY LABORATORY	-	4.5	1.0	COE117, COE117L	COE118	EECE
		COE119	COMPUTER SYSTEM ORGANIZATION WITH ASSEMBLY LANGUAGE	4.5	-	3.0	COE117		EECE
		COE119L	COMPUTER SYSTEM ORGANIZATION WITH ASSEMBLY LANGUAGE LABORATORY	-	4.5	1.0	COE117, COE117L	COE119	EECE
		COE133L	HDL PROGRAMMING LABORATORY	-	4.5	1.0	COE113, COE113L, COE117, COE117L	COE118	EECE
		ECE121	PRINCIPLES OF COMMUNICATIONS	4.5	-	3.0	ECE50		EECE
		MATH30-6	PROBABILITY AND STATISTICS	4.5	-	3.0	MATH23-1		MATH
			Total	**18.0**	**13.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
3	4	COE121	MICROPROCESSOR SYSTEMS	4.5	-	3.0	COE117, COE117L		EECE
		COE121L	MICROPROCESSOR SYSTEMS LABORATORY	-	4.5	1.0	COE117, COE117L	COE121	EECE
		COE127	PRINCIPLES OF OPERATING SYSTEMS	4.5	-	3.0	COE118, COE119		EECE
		COE127L	PRINCIPLES OF OPERATING SYSTEMS LABORATORY	-	4.5	1.0	COE118, COE118L, COE119, COE119L	COE127	EECE

	COE129L	COMPUTER ENGINEERING DRAFTING AND DESIGN	-	4.5	1.0	COE118, COE119		EECE
	COE134	CODES AND SPECIFICATIONS	1.5	-	1.0	COE118, COE119		EECE
	EECE100-1	METHODS OF RESEARCH	3.0	-	2.0	MATH30-6, COE118, COE119, ECE121	COE121, COE127	EECE
	ENG12	ENGLISH FOR THE WORKPLACE 1	4.5	-	3.0	ENG11		SLHS
		Total	**18.0**	**13.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
4	1	COE123	COMPUTER SYSTEM ARCHITECTURE	4.5	-	3.0	COE121, COE127		EECE
		COE123D	DESIGN 1	-	4.5	1.0	COE121, COE134, EECE100-1, EE103, ECE104		EECE
		COE125	SOFTWARE ENGINEERING	4.5	-	3.0	COE127		EECE
		COE160L	DATA COMMUNICATIONS 1	-	9.0	2.0	ECE121		CCESC
		EMG20	ENGINEERING MANAGEMENT	4.5	-	3.0	4th Year Standing		IE-EMG
			PROFESSIONAL ELECTIVE 1	-	-	3.0			
			Total	**13.5**	**13.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
4	2	COE123L	COMPUTER SYSTEM ARCHITECTURE LABORATORY	-	4.5	1.0	COE123		EECE
		COE124D	DESIGN 2	-	4.5	1.0	COE123D		EECE
		COE131	SYSTEM ANALYSIS AND DESIGN	4.5	-	3.0	COE123, COE125		EECE
		COE131L	SYSTEM ANALYSIS AND DESIGN LABORATORY	-	4.5	1.0	COE123, COE125	COE131	EECE
		COE161L	DATA COMMUNICATIONS 2	-	9.0	2.0	COE160L		CCESC
		COE200L	THESIS 1	-	4.5	1.0	EECE100-1, COE123, COE125, COE123D	COE131	EECE
		SSE04	SOCIAL SCIENCE ELECTIVE	4.5	-	3.0			SLHS
			PROFESSIONAL ELECTIVE 2	-	-	3.0			
			Total	**9.0**	**27.0**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
4	3	COE162L	COMPUTER NETWORKS 1	-	9.0	2.0	COE161L		CCESC
		COE200-1L	THESIS 2	-	4.5	1.0	COE200L		EECE

	ECE107	SIGNALS SPECTRA, AND SIGNAL PROCESSING	4.5	-	3.0	ECE50		EECE
	ECE107L	SIGNALS SPECTRA, AND SIGNAL PROCESSING LABORATORY	-	4.5	1.0	ECE50	ECE107	EECE
	ECE131	FEEDBACK AND CONTROL SYSTEMS	4.5	-	3.0	ECE50		EECE
	ECE131L	FEEDBACK AND CONTROL SYSTEMS LABORATORY	-	4.5	1.0	ECE50	ECE131	EECE
	SFTY100	SAFETY ENGINEERING MANAGEMENT	1.5	-	1.0	4th Year Standing		CCESC
		PROFESSIONAL ELECTIVE 3	-	-	3.0			
		Total	**10.5**	**22.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
4	4	COE126F	SEMINARS AND FIELD TRIPS	-	4.5	1.0	ECE131, ECE107, SFTY100		EECE
		COE132	TECHNOPRENEURSHIP	4.5	-	3.0	EMG20		EECE
		COE163L	COMPUTER NETWORKS 2	-	9.0	2.0	COE162L		CCESC
		COE200-2L	THESIS 3	-	4.5	1.0	COE200-1L		EECE
		COE70	CpE ETHICS AND COMPUTER LAWS	3.0	-	2.0	4th Year Standing		EECE
		ENG13	ENGLISH FOR THE WORKPLACE 2	4.5	-	3.0	ENG12		SLHS
			PROFESSIONAL ELECTIVE 4	-	-	3.0			
			Total	**12.0**	**18.0**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
5	1	COE199R	CpE PRACTICUM	-	24.0	3.0	COE70, COE126F, COE163L, COE132, ENG13		EECE
			Total	**0.0**	**24.0**	**3.0**			

SPECIALIZATIONS : 12.00 UNITS

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
EMBEDDED SYSTEM									
4	1	COE185P	INTRODUCTION TO EMBEDDED SYSTEM	3.0	4.5	3.0	4th Year Standing		EECE
4	2	COE186P	EMBEDDED SYSTEM SOFTWARE ARCHITECTURES	3.0	4.5	3.0	COE185P		EECE
4	3	COE187P	REAL TIME EMBEDDED SYSTEM	3.0	4.5	3.0	COE186P		EECE
4	4	COE188P	DESIGN AND DEVELOPMENT OF EMBEDDED SYSTEM	3.0	4.5	3.0	COE187P		EECE
			Total	**12.0**	**18.0**	**12.0**			
ENTREPRENEURSHIP									
4	1	EMG120	APPLIED FINANCE AND MARKETING	4.5	-	3.0	4th Year Standing		IE-EMG
4	2	EMG121	STRATEGIC PLANNING AND MANAGEMENT	4.5	-	3.0	EMG120		IE-EMG
4	3	EMG122	BUSINESS MODELLING	4.5	-	3.0	EMG121		IE-EMG
4	4	EMG123	BUSINESS INCUBATION	4.5	-	3.0	EMG122		IE-EMG
			Total	**18.0**	**0.0**	**12.0**			
HP UNIX ADMINISTRATION TRACK									
4	1	COE194P	HP-UX ADMINSTRATION 1	3.0	4.5	3.0	4th Year Standing		CCESC
4	2	COE195P	HP-UX ADMINSTRATION 2	3.0	4.5	3.0	COE194P		CCESC
4	3	COE196P	HP-UX ADMINSTRATION 3	3.0	4.5	3.0	COE195P		CCESC
4	4	COE197P	HP-UX ADMINSTRATION 4	3.0	4.5	3.0	COE196P		CCESC
			Total	**12.0**	**18.0**	**12.0**			
MICROELECTRONICS TRACK									
4	1	COE190P	DIGITAL MICROELECTRONICS 1	3.0	4.5	3.0	4th Year Standing	COE123	EECE
4	2	COE191P	DIGITAL MICROELECTRONICS 2	3.0	4.5	3.0	COE190P		EECE
4	3	COE192P	DIGITAL MICROELECTRONICS 3	3.0	4.5	3.0	COE191P		EECE
4	4	COE193P	DIGITAL MICROELECTRONICS 4	3.0	4.5	3.0	COE192P		EECE
			Total	**12.0**	**18.0**	**12.0**			
MICROSOFT DOT NET TECHNOLOGY									
4	1	COE181P	MICROSOFT.NET TECHNOLOGY 1	3.0	4.5	3.0	4th Year Standing		CCESC
4	2	COE182P	MICROSOFT.NET TECHNOLOGY 2	3.0	4.5	3.0	COE181P		CCESC
4	3	COE183P	MICROSOFT.NET TECHNOLOGY 3	3.0	4.5	3.0	COE182P		CCESC
4	4	COE184P	MICROSOFT.NET TECHNOLOGY 4	3.0	4.5	3.0	COE183P		CCESC
			Total	**12.0**	**18.0**	**12.0**			

ROBOTICS AND MECHATRONICS

4	1	ECE181P	ROBOTICS AND MECHATRONICS 1	3.0	4.5	3.0	4th Year Standing		EECE
4	2	ECE182P	ROBOTICS AND MECHATRONICS 2	3.0	4.5	3.0	ECE181P		EECE
4	3	ECE183P	ROBOTICS AND MECHATRONICS 3	3.0	4.5	3.0	ECE182P		EECE
4	4	ECE184P	ROBOTICS AND MECHATRONICS 4	3.0	4.5	3.0	ECE183P		EECE
			Total	**12.0**	**18.0**	**12.0**			

TEST DEVELOPMENT

4	1	ECE141P	TEST DEVELOPMENT 1	3.0	4.5	3.0	ECE121		EECE
4	2	ECE142P	TEST DEVELOPMENT 2	3.0	4.5	3.0	ECE141P		EECE
4	3	ECE143P	TEST DEVELOPMENT 3	3.0	4.5	3.0	ECE142P		EECE
4	4	ECE144P	TESTDEVELOPMENT 4	3.0	4.5	3.0	ECE143P		EECE
			Total	**12.0**	**18.0**	**12.0**			

Total Academic Units : 240.00

BACHELOR OF SCIENCE IN ELECTRONICS ENGINEERING

(Curriculum applicable to students who entered as freshmen beginning academic year 2015-2016)

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
1	1	ECE100	INTRODUCTION TO ELECTRONICS ENGINEERING	1.5	-	1.0			EECE
		FIL10	FILIPINO 1	4.5	-	3.0			SLHS
		HME01	HUMANITIES ELECTIVE	4.5	-	3.0			SLHS
		MATH10-3	ALGEBRA	4.5	-	3.0			MATH
		MATH12-1	PLANE AND SPHERICAL TRIGONOMETRY	4.5	-	3.0			MATH
		NSTP1	NATIONAL SERVICE TRAINING PROGRAM 1	-	4.5	(1.5)			SOCIP
		PE11-1	PHYSICAL EDUCATION 1 (PHYSICAL FITNESS AND GROUP GAMES)	-	3.0	(2.0)			ATHLETICS
			Total	**19.5**	**7.5**	**13.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
1	2	CS10-1L	COMPUTER FUNDAMENTALS AND PROGRAMMING LABORATORY	-	9.0	2.0	MATH10-3		SOIT
		ENG10	ENGLISH FOR ACADEMIC PURPOSES 1	4.5	-	3.0			SLHS
		FIL11	FILIPINO 2	4.5	-	3.0			SLHS
		MATH10-4	ADVANCED ALGEBRA	4.5	-	3.0	MATH10-3		MATH
		MATH13-1	SOLID MENSURATION	3.0	-	2.0	MATH12-1		MATH
		SSE01	SOCIAL SCIENCE ELECTIVE	4.5	-	3.0			SLHS
		NSTP2	NATIONAL SERVICE TRAINING PROGRAM 2	-	4.5	(1.5)	NSTP1		SOCIP
		PE12	PHYSICAL EDUCATION 2 (DANCE, MARTIAL ARTS AND BOARD GAMES)	-	3.0	(2.0)	PE11-1		ATHLETICS
			Total	**21.0**	**16.5**	**16.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
1	3	CHM11-3	GENERAL CHEMISTRY 1	3.0	-	2.0			CHE-CHM
		CHM11-3L	GENERAL CHEMISTRY LABORATORY 1	-	4.5	1.0			CHE-CHM
		DRAW10W	ENGINEERING DRAWING	-	4.5	1.0			MVA
		MATH15-1	LINEAR ALGEBRA	3.0	-	2.0	MATH13-1, MATH10-4		MATH
		MATH21-1	CALCULUS 1	7.5	-	5.0	MATH13-1, MATH10-4		MATH
		SSE02	SOCIAL SCIENCE ELECTIVE	4.5	-	3.0			SLHS
		NSTP3	NATIONAL SERVICE TRAINING PROGRAM 3	-	4.5	(1.5)	NSTP2		SOCIP
		PE13-2	PHYSICAL EDUCATION 3 (INDIVIDUAL / DUAL SPORTS)	-	3.0	(2.0)			ATHLETICS
			Total	**18.0**	**16.5**	**14.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
1	4	CAD10L	COMPUTER-AIDED DRAFTING	-	4.5	1.0	DRAW10W		MVA
		CHM12-3	GENERAL CHEMISTRY 2	3.0	-	2.0	CHM11-3, CHM11-3L		CHE-CHM
		CHM12-3L	GENERAL CHEMISTRY LABORATORY 2	-	4.5	1.0	CHM11-3, CHM11-3L	CHM12-3	CHE-CHM
		ENG11	ENGLISH FOR ACADEMIC PURPOSES 2	4.5	-	3.0	ENG10		SLHS
		MATH22-1	CALCULUS 2	7.5	-	5.0	MATH21-1		MATH
		RZL10	RIZAL'S WORKS & WRITINGS OF OTHER FILIPINO HEROES	4.5	-	3.0			SLHS
		NSTP4	NATIONAL SERVICE TRAINING PROGRAM 4	-	4.5	(1.5)	NSTP3		SOCIP
		PE14	PHYSICAL EDUCATION 4 (TEAM SPORTS)	-	3.0	(2.0)			ATHLETICS
			Total	**19.5**	**16.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
2	1	BIO20-1	INTRODUCTION TO BIOELECTRONICS AND BIOINFORMATION ENGINEERING	4.5	-	3.0	CHM12-3, MATH22-1		CHE-CHM
		ENV20	INTRODUCTION TO ENVIRONMENTAL ENGINEERING	3.0	-	2.0	CHM12-3		CHE-CHM
		HME02	HUMANITIES ELECTIVE	4.5	-	3.0			SLHS
		MATH23-1	CALCULUS 3	4.5	-	3.0	MATH22-1		MATH
		MATH23-1X	ENGINEERING MATHEMATICS EXIT EXAM	-	-	0.0	MATH22-1	MATH23-1	MATH
		PHY10	GENERAL PHYSICS 1	3.0	-	2.0	MATH22-1		PHYSICS
		PHY10L	GENERAL PHYSICS LABORATORY 1	-	4.5	1.0	MATH22-1	PHY10	PHYSICS
			Total	**19.5**	**4.5**	**14.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
2	2	COE128	DISCRETE MATHEMATICS	4.5	-	3.0	MATH10-4		EECE
		ENG12	ENGLISH FOR THE WORKPLACE 1	4.5	-	3.0	ENG11		SLHS
		MATH16-1L	INTRODUCTION TO SCIENTIFIC COMPUTING	-	4.5	1.0	MATH22-1, CS10-1L		MATH
		MATH24-1	DIFFERENTIAL EQUATIONS	4.5	-	3.0	MATH23-1, MATH23-1X		MATH
		PHY11	GENERAL PHYSICS 2	3.0	-	2.0	PHY10, PHY10L		PHYSICS
		PHY11L	GENERAL PHYSICS LABORATORY 2	-	4.5	1.0	PHY10, PHY10L	PHY11	PHYSICS
			Total	**16.5**	**9.0**	**13.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
2	3	ECE102	VECTOR ANALYSIS	4.5	-	3.0	MATH24-1		EECE
		HME03	HUMANITIES ELECTIVE	4.5	-	3.0			SLHS

	MATH30-6	PROBABILITY AND STATISTICS	4.5	-	3.0	MATH23-1		MATH
	MEC30	STATICS OF RIGID BODIES	4.5	-	3.0	PHY11, PHY11L		CEGE
	PHY12	GENERAL PHYSICS 3	3.0	-	2.0	PHY11, PHY11L		PHYSICS
	PHY12L	GENERAL PHYSICS LABORATORY 3	-	4.5	1.0	PHY11, PHY11L	PHY12	PHYSICS
		Total	**21.0**	**4.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
2	4	ECE114-0	ELECTROMAGNETICS FOR ECE	4.5	-	3.0	ECE102		EECE
		EE101	ELECTRICAL CIRCUITS 1	4.5	-	3.0	PHY12, MATH24-1		EECE
		EE101L	ELECTRICAL CIRCUITS LABORATORY 1	-	4.5	1.0	PHY12, PHY12L, MATH24-1	EE101	EECE
		PHY13	GENERAL PHYSICS 4	3.0	-	2.0	PHY12, PHY12L		PHYSICS
		PHY13L	GENERAL PHYSICS LABORATORY 4	-	4.5	1.0	PHY12, PHY12L	PHY13	PHYSICS
		PHY13X	GENERAL PHYSICS EXIT EXAM	-	-	0.0	PHY12, PHY12L	PHY13, PHY13L	PHYSICS
		SSE03	SOCIAL SCIENCE ELECTIVE	4.5	-	3.0			SLHS
			Total	**16.5**	**9.0**	**13.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
3	1	ECE103	ELECTRONICS 1	4.5	-	3.0	PHY12, MATH24-1		EECE
		ECE103L	ELECTRONICS 1 LABORATORY	-	4.5	1.0	PHY12L, PHY12, MATH24-1	ECE103	EECE
		ECE50	ADVANCED ENGINEERING MATHEMATICS	4.5	-	3.0	MATH24-1		EECE
		EE103	ELECTRICAL CIRCUITS 2	4.5	-	3.0	EE101		EECE
		EE103L	ELECTRICAL CIRCUITS LABORATORY 2	-	4.5	1.0	EE101, EE101L	EE103	EECE
		EE40	ENGINEERING ECONOMY	4.5	-	3.0	3rd Year Standing		EECE
			Total	**18.0**	**9.0**	**14.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
3	2	COE117	LOGIC CIRCUITS AND SWITCHING THEORY	4.5	-	3.0	ECE103, ECE103L		EECE
		COE117L	LOGIC CIRCUITS AND SWITCHING THEORY LABORATORY	-	4.5	1.0	ECE103, ECE103L	COE117	EECE
		ECE104	ELECTRONICS 2	4.5	-	3.0	ECE103		EECE

	ECE104L	ELECTRONICS 2 LABORATORY	-	4.5	1.0	ECE103, ECE103L	ECE104	EECE
	ECE160L	DATA COMMUNICATIONS AND COMPUTER NETWORKING 1	-	9.0	2.0	ECE50		CCESC
	MEC31-1	DYNAMICS OF RIGID BODIES	3.0	-	2.0	MEC30		MME
	MSE20	FUNDAMENTALS OF MATERIALS SCIENCE AND ENGINEERING	4.5	-	3.0	PHY13, PHY13L, PHY13X, CHM12-3		CHE-CHM
		Total	**16.5**	**18.0**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
3	3	COE121	MICROPROCESSOR SYSTEMS	4.5	-	3.0	COE117, COE117L		EECE
		COE121L	MICROPROCESSOR SYSTEMS LABORATORY	-	4.5	1.0	COE117, COE117L	COE121	EECE
		COE121X	LOGIC AND COMPUTER SYSTEMS EXIT EXAM	-	-	0.0	COE117	COE121	EECE
		ECE105	ELECTRONICS 3	4.5	-	3.0	ECE104		EECE
		ECE105L	ELECTRONICS LABORATORY 3	-	4.5	1.0	ECE104, ECE104L	ECE105	EECE
		ECE161L	DATA COMMUNICATIONS AND COMPUTER NETWORKING 2	-	9.0	2.0	ECE160L		CCESC
		EE153	ENERGY CONVERSION	4.5	-	3.0	EE103, EE103L, EE103X		EECE
		EE153L	ENERGY CONVERSION LABORATORY	-	4.5	1.0	EE103, EE103L, EE103X	EE153	EECE
			Total	**13.5**	**22.5**	**14.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
3	4	ECE109	INDUSTRIAL ELECTRONICS	4.5	-	3.0	ECE105		EECE
		ECE109L	INDUSTRIAL ELECTRONICS LABORATORY	-	4.5	1.0	ECE105, ECE105L	ECE109	EECE
		ECE110X	ELECTRONICS EXIT EXAM	-	-	0.0	ECE105	ECE109	EECE
		ECE121	PRINCIPLES OF COMMUNICATIONS	4.5	-	3.0	ECE105		EECE
		ECE121L	PRINCIPLES OF COMMUNICATIONS LABORATORY	-	4.5	1.0	ECE105	ECE121	EECE
		ECE162L	DATA COMMUNICATIONS AND COMPUTER NETWORKING 3	-	9.0	2.0	ECE161L		CCESC
		ECE60	NUMERICAL METHODS WITH COMPUTING	4.5	-	3.0	MATH24-1		EECE
		ECE60L	NUMERICAL METHODS WITH COMPUTING LABORATORY	-	4.5	1.0	MATH24-1	ECE60	EECE
		EECE100	METHODS OF RESEARCH	3.0	-	2.0	MATH30-6, 3rd Year Standing		EECE
			Total	**16.5**	**22.5**	**16.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
4	1	ECE107	SIGNALS SPECTRA, AND SIGNAL PROCESSING	4.5	-	3.0	ECE50		EECE
		ECE107L	SIGNALS SPECTRA, AND SIGNAL PROCESSING LABORATORY	-	4.5	1.0	ECE50	ECE107	EECE
		ECE110D	ELECTRONICS DESIGN	-	4.5	1.0	ECE109		EECE
		ECE122	DIGITAL COMMUNICATIONS	4.5	-	3.0	ECE121		EECE
		ECE122L	DIGITAL COMMUNICATIONS LABORATORY	-	4.5	1.0	ECE121, ECE121L	ECE122	EECE
		ECE163L	DATA COMMUNICATIONS AND COMPUTER NETWORKING 4	-	9.0	2.0	ECE162L		CCESC
		MEC32	MECHANICS OF DEFORMABLE BODIES	4.5	-	3.0	MEC31-1		CEGE
		MEC32X	ENGINEERING MECHANICS EXIT EXAM	-	-	0.0	MEC31-1	MEC32	CEGE
		SFTY100	SAFETY ENGINEERING MANAGEMENT	1.5	-	1.0	4th Year Standing		CCESC
			Total	**15.0**	**22.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
4	2	ECE123	TRANSMISSION MEDIA & ANTENNA SYSTEMS	4.5	-	3.0	ECE114-0, ECE122		EECE
		ECE123L	TRANSMISSION MEDIA & ANTENNA SYSTEMS LABORATORY	-	4.5	1.0	ECE114-0, ECE122, ECE122L	ECE123	EECE
		ECE131	FEEDBACK AND CONTROL SYSTEMS	4.5	-	3.0	ECE50		EECE
		ECE131L	FEEDBACK AND CONTROL SYSTEMS LABORATORY	-	4.5	1.0	ECE50	ECE131	EECE
		ECE132X	SIGNALS, SYSTEMS AND APPLIED MATHEMATICS EXIT EXAM	-	-	0.0	ECE107	ECE131	EECE
		ECE200L	THESIS 1	-	4.5	1.0	EECE100		EECE
		ENG13	ENGLISH FOR THE WORKPLACE 2	4.5	-	3.0	ENG12		SLHS
			PROFESSIONAL ELECTIVE 1	3.0	4.5	3.0			
			Total	**16.5**	**18.0**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
4	3	ECE124	COMMUNICATIONS 4	4.5	-	3.0	ECE123		EECE
		ECE124D	COMMUNICATIONS 4 DESIGN	-	4.5	1.0	ECE123, ECE123L	ECE124	EECE
		ECE200-1L	THESIS 2	-	4.5	1.0	ECE200L		EECE
		EMG20	ENGINEERING MANAGEMENT	4.5	-	3.0			IE-EMG
		MSE102-1	THERMODYNAMICS AND PHASE EQUILIBRA OF MATERIALS	4.5	-	3.0	MSE20		CHE-CHM
			PROFESSIONAL ELECTIVE 2	3.0	4.5	3.0			
			Total	**16.5**	**13.5**	**14.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
4	4	ECE125	COMMUNICATIONS 5	4.5	-	3.0	ECE124, ECE124D		EECE
		ECE125D	COMMUNICATIONS 5 DESIGN	-	4.5	1.0	ECE124, ECE124D	ECE125	EECE
		ECE125X	COMMUNICATION SYSTEM EXIT EXAM	-	-	0.0	ECE124, ECE163L	ECE125	EECE
		ECE126	BROADCAST AND ACOUSTICS	4.5	-	3.0	ECE123, ECE123L		EECE
		ECE126L	BROADCAST AND ACOUSTICS LABORATORY	-	4.5	1.0	ECE123, ECE123L	ECE126	EECE
		ECE200-2L	THESIS 3	-	4.5	1.0	ECE200-1L		EECE
			PROFESSIONAL ELECTIVE 3	3.0	4.5	3.0			
			Total	**12.0**	**18.0**	**12.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
5	1	ECE198L	CORRELATION COURSE 1	-	4.5	1.0	ECE110X, ECE132X, ECE125		CCESC
		ECE70	ECE LAWS, CODES AND STANDARDS	4.5	-	3.0	5th Year Standing		EECE
		ECE70X	ECE SCIENCES EXIT EXAM	-	-	0.0	MSE102-1, EE153, SFTY100, EMG20, EE40	ECE70	EECE
		SSE04	SOCIAL SCIENCE ELECTIVE	4.5	-	3.0			SLHS
			PROFESSIONAL ELECTIVE 4	3.0	4.5	3.0			
			Total	**12.0**	**9.0**	**10.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
5	2	ECE117F	SEMINARS AND FIELD TRIPS	-	4.5	1.0	5th Year Standing		EECE
		ECE198-1L	CORRELATION COURSE 2	-	4.5	1.0	ECE198L, ECE125X		CCESC
		ECE199R	ECE PRACTICUM	-	24.0	3.0	ECE70, ECE198L		EECE
			Total	**0.0**	**33.0**	**5.0**			

PROFESSIONAL ELECTIVES : 12 UNITS

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
ADVANCED INTERNET PROTOCOL NETWORKING									
4	2	ECE151P	ADVANCED INTERNET PROTOCOL NETWORKING 1	3.0	4.5	3.0	ECE163L		CCESC
4	3	ECE152P	ADVANCED INTERNET PROTOCOL NETWORKING 2	3.0	4.5	3.0	ECE151P		CCESC
4	4	ECE153P	ADVANCED INTERNET PROTOCOL NETWORKING 3	3.0	4.5	3.0	ECE152P		CCESC
5	1	ECE154P	ADVANCED INTERNET PROTOCOL NETWORKING 4	3.0	4.5	3.0	ECE153P		CCESC
			Total	**12.0**	**18.0**	**12.0**			
COMMUNICATIONS									
4	2	ECE161P	COMMUNICATIONS ELECTIVE 1	3.0	4.5	3.0	ECE121		EECE
4	3	ECE162P	COMMUNICATIONS ELECTIVE 2	3.0	4.5	3.0	ECE161P		EECE
4	4	ECE163P	COMMUNICATIONS ELECTIVE 3	3.0	4.5	3.0	ECE162P		EECE
5	1	ECE164P	COMMUNICATIONS ELECTIVE 4	3.0	4.5	3.0	ECE163P		EECE
			Total	**12.0**	**18.0**	**12.0**			
ENTREPRENEURSHIP									
4	2	EMG120	APPLIED FINANCE AND MARKETING	4.5	-	3.0	4th Year Standing		IE-EMG
4	3	EMG121	STRATEGIC PLANNING AND MANAGEMENT	4.5	-	3.0	EMG120		IE-EMG
4	4	EMG122	BUSINESS MODELLING	4.5	-	3.0	EMG121		IE-EMG
5	1	EMG123	BUSINESS INCUBATION	4.5	-	3.0	EMG122		IE-EMG
			Total	**18.0**	**0.0**	**12.0**			
INDUSTRIAL AUTOMATION & CONTROL									
4	2	EE160P	INDUSTRIAL AUTOMATION 1	3.0	4.5	3.0	ECE109, ECE109L		EECE
4	3	EE161P	INDUSTRIAL AUTOMATION 2	3.0	4.5	3.0	EE160P		EECE
4	4	EE162P	INDUSTRIAL AUTOMATION 3	3.0	4.5	3.0	EE161P		EECE
5	1	EE163P	INDUSTRIAL AUTOMATION 4	3.0	4.5	3.0	EE162P		EECE
			Total	**12.0**	**18.0**	**12.0**			
MICROELECTRONICS									
4	2	ECE173P	MICROELECTRONICS 1	3.0	4.5	3.0	ECE105		EECE
4	3	ECE174P	MICROELECTRONICS 2	3.0	4.5	3.0	ECE173P		EECE
4	4	ECE175P	MICROELECTRONICS 3	3.0	4.5	3.0	ECE174P		EECE
5	1	ECE176P	MICROELECTRONICS 4	3.0	4.5	3.0	ECE175P		EECE
			Total	**12.0**	**18.0**	**12.0**			

PETROLEUM REFINING TECHNOLOGY

4	2	PRT190	INTRODUCTION TO PETROLEUM REFINING	4.5	-	3.0	CHM12-3, CHM12-3L, 4th Year Standing		CHE-CHM
4	3	PRT192	OVERVIEW OF PETROLEUM REFINING PROCESS (WITH ELECTRICAL FOCUS)	4.5	-	3.0	PRT190		CHE-CHM
4	4	PRT193	PETROLEUM REFINING EQUIPMENT	4.5	-	3.0	PRT192		MME
5	1	PRT194	PETROLEUM REFINING SAFETY	4.5	-	3.0	PRT193		MME
			Total	**18.0**	**0.0**	**12.0**			

POWER ELECTRONICS

4	2	ECE191P	POWER ELECTRONICS 1	3.0	4.5	3.0	ECE109, ECE109L		EECE
4	3	ECE192P	POWER ELECTRONICS 2	3.0	4.5	3.0	ECE191P		EECE
4	4	ECE193P	POWER ELECTRONICS 3	3.0	4.5	3.0	ECE192P		EECE
5	1	ECE194P	POWER ELECTRONICS 4	3.0	4.5	3.0	ECE193P		EECE
			Total	**12.0**	**18.0**	**12.0**			

ROBOTICS AND MECHATRONICS

4	1	ECE181P	ROBOTICS AND MECHATRONICS 1	3.0	4.5	3.0	4th Year Standing		EECE
4	2	ECE182P	ROBOTICS AND MECHATRONICS 2	3.0	4.5	3.0	ECE181P		EECE
4	3	ECE183P	ROBOTICS AND MECHATRONICS 3	3.0	4.5	3.0	ECE182P		EECE
4	4	ECE184P	ROBOTICS AND MECHATRONICS 4	3.0	4.5	3.0	ECE183P		EECE
			Total	**12.0**	**18.0**	**12.0**			

TEST DEVELOPMENT

4	2	ECE141P	TEST DEVELOPMENT 1	3.0	4.5	3.0	ECE105		EECE
4	3	ECE142P	TEST DEVELOPMENT 2	3.0	4.5	3.0	ECE141P		EECE
4	4	ECE143P	TEST DEVELOPMENT 3	3.0	4.5	3.0	ECE142P		EECE
5	1	ECE144P	TESTDEVELOPMENT 4	3.0	4.5	3.0	ECE143P		EECE
			Total	**12.0**	**18.0**	**12.0**			

Total Academic Units : 243.00

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

(Curriculum applicable to students who entered as freshmen beginning academic year 2015-2016)

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
1	1	CHM11-3	GENERAL CHEMISTRY 1	3.0	-	2.0			CHE-CHM
		CHM11-3L	GENERAL CHEMISTRY LABORATORY 1	-	4.5	1.0		CHM11-3	CHE-CHM
		DRAW10W	ENGINEERING DRAWING	-	4.5	1.0			MVA
		EE100	INTRODUCTION TO ELECTRICAL ENGINEERING	1.5	-	1.0			EECE
		HME01	HUMANITIES ELECTIVE	4.5	-	3.0			SLHS
		MATH10-3	ALGEBRA	4.5	-	3.0			MATH
		MATH12-1	PLANE AND SPHERICAL TRIGONOMETRY	4.5	-	3.0			MATH
		NSTP1	NATIONAL SERVICE TRAINING PROGRAM 1	-	4.5	(1.5)			SOCIP
		PE11-1	PHYSICAL EDUCATION 1 (PHYSICAL FITNESS AND GROUP GAMES)	-	3.0	(2.0)			ATHLETICS
			Total	**18.0**	**16.5**	**14.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
1	2	CAD10L	COMPUTER-AIDED DRAFTING	-	4.5	1.0	DRAW10W		MVA
		CHM12-3	GENERAL CHEMISTRY 2	3.0	-	2.0	CHM11-3, CHM11-3L		CHE-CHM
		CHM12-3L	GENERAL CHEMISTRY LABORATORY 2	-	4.5	1.0	CHM11-3, CHM11-3L	CHM12-3	CHE-CHM
		FIL10	FILIPINO 1	4.5	-	3.0			SLHS
		MATH10-4	ADVANCED ALGEBRA	4.5	-	3.0	MATH10-3		MATH
		MATH13-1	SOLID MENSURATION	3.0	-	2.0	MATH12-1		MATH
		RZL10	RIZAL'S WORKS & WRITINGS OF OTHER FILIPINO HEROES	4.5	-	3.0			SLHS
		NSTP2	NATIONAL SERVICE TRAINING PROGRAM 2	-	4.5	(1.5)	NSTP1		SOCIP
		PE12	PHYSICAL EDUCATION 2 (DANCE, MARTIAL ARTS AND BOARD GAMES)	-	3.0	(2.0)			ATHLETICS
			Total	**19.5**	**16.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
1	3	BIO20-1	INTRODUCTION TO BIOELECTRONICS AND BIOINFORMATION ENGINEERING	4.5	-	3.0	CHM12-3		CHE-CHM
		CS10-1L	COMPUTER FUNDAMENTALS AND PROGRAMMING LABORATORY	-	9.0	2.0	MATH10-3		SOIT
		ENG10	ENGLISH FOR ACADEMIC	4.5	-	3.0			SLHS

		PURPOSES 1						
	MATH21-1	CALCULUS 1	7.5	-	5.0	MATH13-1, MATH10-4		MATH
	SSE01	SOCIAL SCIENCE ELECTIVE	4.5	-	3.0			SLHS
	NSTP3	NATIONAL SERVICE TRAINING PROGRAM 3	-	4.5	(1.5)	NSTP2		SOCIP
	PE13-2	PHYSICAL EDUCATION 3 (INDIVIDUAL / DUAL SPORTS)	-	3.0	(2.0)			ATHLETICS
		Total	**21.0**	**16.5**	**16.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
1	4	ENG11	ENGLISH FOR ACADEMIC PURPOSES 2	4.5	-	3.0	ENG10		SLHS
		HME02	HUMANITIES ELECTIVE	4.5	-	3.0			SLHS
		MATH22-1	CALCULUS 2	7.5	-	5.0	MATH21-1		MATH
		SSE02	SOCIAL SCIENCE ELECTIVE	4.5	-	3.0			SLHS
		NSTP4	NATIONAL SERVICE TRAINING PROGRAM 4	-	4.5	(1.5)	NSTP3		SOCIP
		PE14	PHYSICAL EDUCATION 4 (TEAM SPORTS)	-	3.0	(2.0)			ATHLETICS
			Total	**21.0**	**7.5**	**14.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
2	1	COE130	IT FOR EE	3.0	-	2.0	CS10-1L		EECE
		COE130L	IT FOR EE LABORATORY	-	4.5	1.0	CS10-1L	COE130	EECE
		FIL11	FILIPINO 2	4.5	-	3.0			SLHS
		MATH15-1	LINEAR ALGEBRA	3.0	-	2.0	MATH13-1, MATH10-4, 2nd Year Standing		MATH
		MATH16-1L	INTRODUCTION TO SCIENTIFIC COMPUTING	-	4.5	1.0	MATH22-1, CS10-1L		MATH
		MATH23-1	CALCULUS 3	4.5	-	3.0	MATH22-1		MATH
		MATH23-1X	ENGINEERING MATHEMATICS EXIT EXAM	-	-	0.0	MATH22-1	MATH23-1	MATH
		PHY10	GENERAL PHYSICS 1	3.0	-	2.0	MATH22-1		PHYSICS
		PHY10L	GENERAL PHYSICS LABORATORY 1	-	4.5	1.0	MATH22-1	PHY10	PHYSICS
			Total	**18.0**	**13.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
2	2	ENG12	ENGLISH FOR THE WORKPLACE 1	4.5	-	3.0	ENG11		SLHS
		HME03	HUMANITIES ELECTIVE	4.5	-	3.0			SLHS
		MATH24-1	DIFFERENTIAL EQUATIONS	4.5	-	3.0	MATH23-1, MATH23-1X		MATH

	PHY11	GENERAL PHYSICS 2	3.0	-	2.0	PHY10, PHY10L		PHYSICS
	PHY11L	GENERAL PHYSICS LABORATORY 2	-	4.5	1.0	PHY10, PHY10L	PHY11	PHYSICS
	SSE03	SOCIAL SCIENCE ELECTIVE	4.5	-	3.0			SLHS
		Total	**21.0**	**4.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
2	3	COE128	DISCRETE MATHEMATICS	4.5	-	3.0	MATH10-4		EECE
		EE50	ADVANCED ENGINEERING MATHEMATICS FOR EE	4.5	-	3.0	MATH24-1		EECE
		EE60	NUMERICAL METHODS	4.5	-	3.0	MATH24-1		EECE
		EE60L	NUMERICAL METHODS WITH COMPUTING LABORATORY	-	4.5	1.0	MATH24-1	EE60	EECE
		MATH30-6	PROBABILITY AND STATISTICS	4.5	-	3.0	MATH23-1		MATH
		PHY12	GENERAL PHYSICS 3	3.0	-	2.0	PHY11, PHY11L		PHYSICS
		PHY12L	GENERAL PHYSICS LABORATORY 3	-	4.5	1.0	PHY11, PHY11L	PHY12	PHYSICS
			Total	**21.0**	**9.0**	**16.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
2	4	ECE103	ELECTRONICS 1	4.5	-	3.0	PHY12, MATH24-1		EECE
		ECE103L	ELECTRONICS 1 LABORATORY	-	4.5	1.0	PHY12L, PHY12, MATH24-1	ECE103	EECE
		ECE131	FEEDBACK AND CONTROL SYSTEMS	4.5	-	3.0	EE50		EECE
		ECE131L	FEEDBACK AND CONTROL SYSTEMS LABORATORY	-	4.5	1.0	EE50	ECE131	EECE
		ECE131X	PROFESSIONAL AND APPLIED MATHEMATICS EXIT EXAM	-	-	0.0	EE50	ECE131	EECE
		EE101	ELECTRICAL CIRCUITS 1	4.5	-	3.0	PHY12, MATH24-1		EECE
		EE101L	ELECTRICAL CIRCUITS LABORATORY 1	-	4.5	1.0	PHY12, PHY12L, MATH24-1	EE101	EECE
		PHY13	GENERAL PHYSICS 4	3.0	-	2.0	PHY12, PHY12L		PHYSICS
		PHY13L	GENERAL PHYSICS LABORATORY 4	-	4.5	1.0	PHY12, PHY12L	PHY13	PHYSICS
		PHY13X	GENERAL PHYSICS EXIT EXAM	-	-	0.0	PHY12, PHY12L	PHY13, PHY13L	PHYSICS
			Total	**16.5**	**18.0**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
3	1	COE117	LOGIC CIRCUITS AND SWITCHING THEORY	4.5	-	3.0	ECE103, ECE103L		EECE
		COE117L	LOGIC CIRCUITS AND SWITCHING THEORY LABORATORY	-	4.5	1.0	ECE103, ECE103L	COE117	EECE
		EE103	ELECTRICAL CIRCUITS 2	4.5	-	3.0	EE101		EECE
		EE103L	ELECTRICAL CIRCUITS LABORATORY 2	-	4.5	1.0	EE101, EE101L	EE103	EECE
		ME20	THERMODYNAMICS	4.5	-	3.0	PHY12, PHY12L, MATH24-1		MME
		MEC30	STATICS OF RIGID BODIES	4.5	-	3.0	PHY11, PHY11L		CEGE
		SFTY100	SAFETY ENGINEERING MANAGEMENT	1.5	-	1.0	3rd Year Standing		CCESC
			Total	**19.5**	**9.0**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
3	2	ECE104	ELECTRONICS 2	4.5	-	3.0	ECE103		EECE
		ECE104L	ELECTRONICS 2 LABORATORY	-	4.5	1.0	ECE103, ECE103L	ECE104	EECE
		EE104	ELECTRICAL CIRCUITS 3	4.5	-	3.0	EE103		EECE
		EE104L	ELECTRICAL CIRCUITS LABORATORY 3	-	4.5	1.0	EE103, EE103L	EE104	EECE
		EE104X	ELECTRICAL CIRCUITS EXIT EXAM	-	-	0.0	EE103	EE104	EECE
		EE106	DC MACHINERY	3.0	-	2.0	EE103		EECE
		EE106L	DC MACHINERY LABORATORY	-	4.5	1.0	EE103, EE103L	EE106	EECE
		ENV20	INTRODUCTION TO ENVIRONMENTAL ENGINEERING	3.0	-	2.0	CHM12-3		CHE-CHM
		MEC31-1	DYNAMICS OF RIGID BODIES	3.0	-	2.0	MEC30		MME
			Total	**18.0**	**13.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
3	3	CE140-1P	MECHANICS OF FLUIDS	3.0	4.5	3.0	MEC31-1, PHY12, PHY12L		CEGE
		EE108	AC MACHINERY	4.5	-	3.0	EE104	EE109	EECE
		EE108L	AC MACHINERY LABORATORY	-	4.5	1.0	EE104, , EE104L	EE109L	EECE
		EE109	AC APPARATUS AND DEVICES	3.0	-	2.0	EE104	EE108	EECE

	EE109L	AC APPARATUS AND DEVICES LABORATORY	-	4.5	1.0	EE104, , EE104L	EE108L	EECE
	EE109X	ELECTRICAL MACHINERY EXIT EXAM	-	-	0.0		EE109, EE108	EECE
	MEC32	MECHANICS OF DEFORMABLE BODIES	4.5	-	3.0	MEC31-1		CEGE
	MEC32X	ENGINEERING MECHANICS EXIT EXAM	-	-	0.0	MEC31-1	MEC32	CEGE
	SSE04	SOCIAL SCIENCE ELECTIVE	4.5	-	3.0			SLHS
		Total	**19.5**	**13.5**	**16.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
3	4	ECE109	INDUSTRIAL ELECTRONICS	4.5	-	3.0	ECE104		EECE
		ECE109L	INDUSTRIAL ELECTRONICS LABORATORY	-	4.5	1.0	ECE104, ECE104L	ECE109	EECE
		ECE109X	INDUSTRIAL ELECTRONICS EXIT EXAM	-	-	0.0	ECE104	ECE109	EECE
		ECE114	ELECTROMAGNETICS	4.5	-	3.0	MATH24-1		EECE
		EE120	PATENT LAW AND INTELLECTUAL PROPERTY RIGHTS	1.5	-	1.0	3rd Year Standing	EECE100	EECE
		EE40	ENGINEERING ECONOMY	4.5	-	3.0	3rd Year Standing		EECE
		EECE100	METHODS OF RESEARCH	3.0	-	2.0	MATH30-6, 3rd Year Standing	EE120	EECE
		MSE20-2	FUNDAMENTALS OF MATERIALS SCIENCE AND ENGINEERING	4.5	-	3.0	PHY13, PHY13L, PHY13X, CHM12-3		CHE-CHM
			Total	**22.5**	**4.5**	**16.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
4	1	EE110	ELECTRICAL ENGINEERING DESIGN	3.0	-	2.0	EE108	EE114	EECE
		EE111	ELECTRICAL ENGINEERING SAFETY	1.5	-	1.0	4th Year Standing		EECE
		EE112	ELECTRICAL EQUIPMENT: OPERATION & MAINTENANCE	4.5	-	3.0	EE108, EE109		EECE
		EE112L	ELECTRICAL EQUIPMENT: OPERATION & MAINTENANCE LABORATORY	-	4.5	1.0	EE108, EE108L, EE109, EE109L	EE112	EECE
		EE114	ILLUMINATION ENGINEERING	3.0	-	2.0	EE108	EE110, EE114D	EECE
		EE114D	ILLUMINATION ENGINEERING DESIGN	-	4.5	1.0		EE114, EE110	EECE
		EE114X	ELECTRICAL SYSTEMS AND ILLUMINATION SYSTEM DESIGN EXIT EXAM	-	-	0.0		EE114, EE110	EECE

	EE200L	THESIS 1	-	4.5	1.0	EE109X, EECE100		EECE
		PROFESSIONAL ELECTIVE 1	-	-	3.0			
		Total	**12.0**	**13.5**	**14.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
4	2	COE121	MICROPROCESSOR SYSTEMS	4.5	-	3.0	COE117, COE117L		EECE
		COE121L	MICROPROCESSOR SYSTEMS LABORATORY	-	4.5	1.0	COE117, COE117L	COE121	EECE
		COE121X	LOGIC AND COMPUTER SYSTEMS EXIT EXAM	-	-	0.0	COE117	COE121	EECE
		EE113	INSTRUMENTATION AND CONTROL	4.5	-	3.0	EE103		EECE
		EE113L	INSTRUMENTATION AND CONTROL LABORATORY	-	4.5	1.0	EE103, EE103L	EE113	EECE
		EE200-1L	THESIS 2	-	4.5	1.0	EE200L		EECE
		EMG20	ENGINEERING MANAGEMENT	4.5	-	3.0	4th Year Standing		IE-EMG
			PROFESSIONAL ELECTIVE 2	-	-	3.0			
			Total	**13.5**	**13.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
4	3	ECE121	PRINCIPLES OF COMMUNICATIONS	4.5	-	3.0	EE50		EECE
		ECE121L	PRINCIPLES OF COMMUNICATIONS LABORATORY	-	4.5	1.0	EE50	ECE121	EECE
		EE110D	ELECTRICAL ENGINEERING DESIGN (DESIGN)	-	4.5	1.0	EE110		EECE
		EE112X	ELECTRICAL ENGINEERING SCIENCES EXIT EXAM	-	-	0.0	4th Year Standing	ECE121	EECE
		EE115	POWER SYSTEM	4.5	-	3.0	EE108, EE109	EE115D	EECE
		EE115D	POWER SYSTEM DESIGN	-	4.5	1.0		EE115	EECE
		EE168	RENEWABLE ENERGY FOR SUSTAINABLE DEVELOPMENT	1.5	-	1.0	4th Year Standing		EECE
		EE198L	CORRELATION COURSE 1	-	4.5	1.0	EE114X		CCESC
		EE200-2L	THESIS 3	-	4.5	1.0	EE200-1L		EECE
			PROFESSIONAL ELECTIVE 3	-	-	3.0			
			Total	**10.5**	**22.5**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
4	4	EE116	POWER PLANT ENGINEERING	3.0	-	2.0	EE115	EE117	EECE
		EE116D	POWER PLANT	-	4.5	1.0	EE115	EE116	EECE

		ENGINEERING DESIGN						
	EE116X	POWER PLANT ENGINEERING EXIT EXAM	-	-	0.0	EE115	EE116	EECE
	EE117	ELECTRICAL TRANSMISSION AND DISTRIBUTION SYSTEM	4.5	-	3.0	EE115		EECE
	EE117L	ELECTRICAL TRANSMISSION AND DISTRIBUTION SYSTEM LABORATORY	-	4.5	1.0	EE115	EE117	EECE
	EE117X	ELECTRICAL TRANSMISSION AND DISTRIBUTION EXIT EXAM	-	-	0.0	EE115	EE117	EECE
	EE71	EE LAWS, CONTRACTS, AND ETHICS	3.0	-	2.0	4th Year Standing		EECE
	ENG13	ENGLISH FOR THE WORKPLACE 2	4.5	-	3.0	ENG12		SLHS
		PROFESSIONAL ELECTIVE 4	-	-	3.0			
		Total	**15.0**	**9.0**	**15.0**			

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
5	1	EE118F	SEMINARS AND FIELD TRIPS	-	4.5	1.0	For Graduating Students Only		EECE
		EE198-1L	CORRELATION COURSE 2	-	4.5	1.0	EE198L		CCESC
		EE199R	ON THE JOB TRAINING	-	24.0	3.0	For Graduating Students Only		EECE
			Total	**0.0**	**33.0**	**5.0**			

SPECIALIZATIONS : 12 UNITS

Yr	Qtr	Code	Title	Lec Hrs	Lab Hrs	Credit Units	Prereq.	Co-requisites	Caretaker
ENTREPRENEURSHIP									
4	1	EMG120	APPLIED FINANCE AND MARKETING	4.5	-	3.0	4th Year Standing		IE-EMG
4	2	EMG121	STRATEGIC PLANNING AND MANAGEMENT	4.5	-	3.0	EMG120		IE-EMG
4	3	EMG122	BUSINESS MODELLING	4.5	-	3.0	EMG121		IE-EMG
4	4	EMG123	BUSINESS INCUBATION	4.5	-	3.0	EMG122		IE-EMG
			Total	**18.0**	**0.0**	**12.0**			

INDUSTRIAL AUTOMATION & CONTROL

4	1	EE160P	INDUSTRIAL AUTOMATION 1	3.0	4.5	3.0	ECE109, ECE109L		EECE
4	2	EE161P	INDUSTRIAL AUTOMATION 2	3.0	4.5	3.0	EE160P		EECE
4	3	EE162P	INDUSTRIAL AUTOMATION 3	3.0	4.5	3.0	EE161P		EECE
4	4	EE163P	INDUSTRIAL AUTOMATION 4	3.0	4.5	3.0	EE162P		EECE
			Total	**12.0**	**18.0**	**12.0**			

POWER ELECTRONICS

4	1	ECE191P	POWER ELECTRONICS 1	3.0	4.5	3.0	ECE109, ECE109L		EECE
4	2	ECE192P	POWER ELECTRONICS 2	3.0	4.5	3.0	ECE191P		EECE
4	3	ECE193P	POWER ELECTRONICS 3	3.0	4.5	3.0	ECE192P		EECE
4	4	ECE194P	POWER ELECTRONICS 4	3.0	4.5	3.0	ECE193P		EECE
			Total	**12.0**	**18.0**	**12.0**			

POWER SYSTEM TRACK

4	1	EE181	POWER SYSTEM 1: GENERATION	4.5	-	3.0	EE109, EE109L		EECE
4	2	EE182	POWER SYSTEM 2: TRANSMISSION	4.5	-	3.0	EE181		EECE
4	3	EE183	POWER SYSTEM 3: DISTRIBUTION SYSTEM	4.5	-	3.0	EE182		EECE
4	4	EE184	POWER SYSTEM 4: SUPPLY	4.5	-	3.0	EE183		EECE
			Total	**18.0**	**0.0**	**12.0**			

POWER SYSTEMS PROTECTION

4	1	EE173	POWER SYSTEM PROTECTION 1	4.5	-	3.0	EE109, EE109L		EECE
4	2	EE174	POWER SYSTEM PROTECTION 2	4.5	-	3.0	EE173		EECE
4	3	EE175	POWER SYSTEM PROTECTION 3	4.5	-	3.0	EE174		EECE
4	4	EE176	POWER SYSTEM PROTECTION 4	4.5	-	3.0	EE175		EECE
			Total	**18.0**	**0.0**	**12.0**			

PETROLEUM REFINING TECHNOLOGY

4	1	PRT190	INTRODUCTION TO PETROLEUM REFINING	4.5	-	3.0	CHM12-3, CHM12-3L, 4th Year Standing		CHE-CHM
4	2	PRT192	OVERVIEW OF PETROLEUM REFINING PROCESS (WITH ELECTRICAL FOCUS)	4.5	-	3.0	PRT190		CHE-CHM
4	3	PRT193	PETROLEUM REFINING EQUIPMENT	4.5	-	3.0	PRT192		MME
4	4	PRT194	PETROLEUM REFINING SAFETY	4.5	-	3.0	PRT193		MME
			Total	**18.0**	**0.0**	**12.0**			

TEST DEVELOPMENT

4	1	ECE141P	TEST DEVELOPMENT 1	3.0	4.5	3.0	ECE109		EECE
4	2	ECE142P	TEST DEVELOPMENT 2	3.0	4.5	3.0	ECE141P		EECE
4	3	ECE143P	TEST DEVELOPMENT 3	3.0	4.5	3.0	ECE142P		EECE
4	4	ECE144P	TESTDEVELOPMENT 4	3.0	4.5	3.0	ECE143P		EECE
			Total	**12.0**	**18.0**	**12.0**			

Total Academic Units : 246.00

SCHOOL OF ELECTRICAL ENGINEERING, ELECTRONICS ENGINEERING, AND COMPUTER ENGINEERING

COE60. NUMERICAL METHODS
This course covers concepts of numerical analysis in solving engineering problems. It includes numerous techniques in finding roots of an equation, solving systems of linear and non-linear equations, polynomial approximation and interpolation, approximation of roots by the use of differentiation and integration, and the least squares method.
Credit : 3 units
Prerequisite : MATH24-1

COE70. CpE ETHICS AND COMPUTER LAWS
The course includes moral issues and decisions confronting individuals and organizations involved in engineering. This subject will focus on the study of the code of ethics, conflict of interest, safety and risk trade-offs in design, confidentiality, behavior in the work place, intellectual property rights, patents, trade secrets, contemporary issues in engineering and the Philippines' E-Commerce Law.
Credit : 2 units
Prerequisite : 4th Year Standing

COE111. INTRODUCTION TO COMPUTER ENGINEERING
This course introduces computer engineering as a profession with emphasis on the learning methods and techniques to help the students adjust to the needs of the course, the quarter system, and to develop engineering skills to succeed in the study of COE. Thus, it gives the student an introduction to the engineering profession and other related fields of study, and the career paths available, with focus on the COE program and its specializations
Credit : 1 unit

COE112. COMPUTER FUNDAMENTALS AND PROGRAM LOGIC FORMULATION
This course deals with the study of the computer systems in general, its history and evolution, number system, number system conversion and arithmetic operations, computer software, and computer hardware. It also covers the study of the different tools and techniques available in developing computer program logic such as flowchart and pseudo code.
Credit : 3 units
Prerequisite : MATH10-3

COE113. COMPUTER PROGRAMMING
This course covers topics from basic to intermediate course in computer programming and applications. It introduces students to the fundamentals of computer programming, simple control and data structures, basic operating system commands, sequential files, arrays, classes, recursive processes, and the use of text files. Students will learn to design, code, and test their own programs using C++ Language as a preferred tool.
Credit : 3 units
Prerequisite : COE112, CS10-2L

COE113L. COMPUTER PROGRAMMING LABORATORY
A laboratory course that allows students to experience actual hands on using the specified programming language.
Credit : 1 unit
Corequisite : COE113
Prerequisite : COE112, CS10-2L

COE113-1. COMPUTER PROGRAMMING FOR MAS
This course covers topics from basic to intermediate course in computer programming with applications intended to MAS students. It introduces students to the fundamentals of computer programming, simple control and data structures, basic operating system commands, sequential files, arrays, classes, recursive processes, and the use of text files. Students will learn to design, code, and test their own programs using C++ Language as a preferred tool.
Credit : 3 units
Prerequisite : COE112

COE113-1L. COMPUTER PROGRAMMING FOR MAS LABORATORY
A laboratory course designed for MAS students, allowing students to experience actual hands on using the specified programming language.
Credit : 1 unit
Corequisite : COE113-1
Prerequisite : COE112

COE114. ADVANCED COMPUTER PROGRAMMING
This course introduces computer programming using the C# programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test, debug, and implement objects using the appropriate environment at the beginning and advanced level.
Credit : 3 units
Prerequisite : COE113

COE114L. ADVANCED COMPUTER PROGRAMMING LABORATORY
A hands-on application to accompany the Advanced Computer Programming lecture
Credit : 1 unit
Corequisite : COE114
Prerequisites : COE113, COE113L

COE114-1. ADVANCED COMPUTER PROGRAMMING FOR MAS

This course introduces computer programming using the C# programming language with object-oriented programming principles and applications intended for MAS students. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test, debug, and implement objects using the appropriate environment at the beginning and advanced level.

Credit : 3 units
Prerequisite : COE113-1

COE114-1L. ADVANCED COMPUTER PROGRAMMING FOR MAS LABORATORY

A hands-on application intended to MAS students that accompanies the Advanced Computer Programming for MAS lecture.

Credit : 1 unit
Corequisite : COE114-1
Prerequisites : COE113-1, COE113-1L

COE115-1L. COMPUTER HARDWARE AND TROUBLESHOOTING LABORATORY 1

A laboratory course that covers the assembly, disassembly, and troubleshooting of the computer system

Credit : 1 unit
Prerequisite : COE112

COE115-2L. COMPUTER HARDWARE AND TROUBLESHOOTING LABORATORY 2

A laboratory course that provides an understanding of the installation, configuration, troubleshooting and upgrading of computer operating system

Credit : 1 unit
Prerequisite : COE115-1L

COE116. DATA STRUCTURES AND ALGORITHM

The course covers topics on linear data structures such as arrays, stacks, queues, linked-lists; nonlinear data structures such as generalized lists, trees, and graphs; operations on these using algorithms such as insertions, deletions, and traversals.

Credit : 3 units
Prerequisite : COE114

COE116L. DATA STRUCTURES AND ALGORITHM LABORATORY

A laboratory course accompanying Data Structures and Algorithm

Credit : 1 unit
Corequisite : COE116
Prerequisites : COE114, COE114L

COE117. LOGIC CIRCUITS AND SWITCHING THEORY

This course provides a review of number systems, coding and Boolean algebra; inputs and outputs; gates and gating networks; combinational circuits; standard form; minimization; sequential circuits; state and machine equivalence; asynchronous sequential circuits; race conditions; algorithmic state machines; and design of digital sub-systems.

Credit : 3 units
Prerequisites : ECE103, ECE103L

COE117L. LOGIC CIRCUITS AND SWITCHING THEORY LABORATORY

This course provides the practical laboratory experience on topics taken up in Logic Circuits and Switching Theory.

Credit : 1 unit
Corequisite : COE117
Prerequisites : ECE103, ECE103L

COE118. ADVANCED LOGIC CIRCUITS AND SWITCHING THEORY

This course is a continuation of Logic Circuits and Switching Theory with emphasis on algorithmic state machines, signal conversion techniques, and hardware description language (HDL) programming.

Credit : 3 units
Prerequisite : COE117

COE118L. ADVANCED LOGIC CIRCUITS AND SWITCHING THEORY LABORATORY

A laboratory course that allows students to create and simulate experimental circuits using available HDL software

Credit : 1 unit
Corequisite : COE118
Prerequisites : COE117, COE117L

COE119. COMPUTER SYSTEM ORGANIZATION WITH ASSEMBLY LANGUAGE

A course that provides a keen understanding of the PC's hardware and software fundamentals. It is also the study of 16-bit assembly language programming, binary and decimal arithmetic operations, strings and bit manipulation, interrupts, input/output operations, macros, and some introductory concepts to 32-bit assembly language programming.

Credit : 3 units
Prerequisite : COE117

COE119L. COMPUTER SYSTEM ORGANIZATION WITH ASSEMBLY LANGUAGE LABORATORY

A laboratory course on the application of the concepts of assembly language programming using the 80x86 instruction sets with emphasis on assembling, linking, and executing programs.

Credit : 1 unit
Corequisite : COE119
Prerequisites : COE117, COE117L

COE121. MICROPROCESSOR SYSTEMS

The course includes history and evolution, principles, and applications of microprocessors. The focus is on the basic understanding of its architectural design, functional parts, operations, function and programming. It also covers the study of various types of microprocessors in order to acquire a better understanding of the course. The fundamental concepts of microcontrollers are also covered here.

Credit : 3 units
Prerequisites : COE117, COE117L

COE121L. MICROPROCESSOR SYSTEMS LABORATORY

A course providing experimental learning environment on topics taken up in Microprocessor System.

Credit : 1 unit
Corequisite : COE121
Prerequisites : COE117, COE117L

COE121X. LOGIC AND COMPUTER SYSTEMS EXIT EXAM

The exam is designed to test students' knowledge of principles, theories, concepts of Logic Circuits and Switching Theory, Microprocessor System, and their applications.

Credit : 0 Unit
Prerequisite : COE117
Corequisite : COE121

COE123. COMPUTER SYSTEM ARCHITECTURE

This course provides information on the historical evolution of computers, computer design methodology, the central processing unit, the basic principles of arithmetic logic unit, memory and systems organization. The focus is on the understanding of the design issues specifically the instruction set architecture and hardware architecture. A case study on the existing architectural computer designs is a requirement of the course to give students a better understanding of its principles.

Credit : 3 units
Prerequisites : COE121, COE127

COE123L. COMPUTER SYSTEM ARCHITECTURE LABORATORY

A laboratory course of COE123 that allows students to create and simulate experimental circuits.

Credit : 1 unit
Prerequisite : COE123

COE123D. DESIGN 1

COE123D is the first of the two course series on major design experience of Computer Engineering students. The course covers submission and approval of design topic as well as the development of the approved topic. The topic to be submitted for approval shall focus on the principles of Computer Engineering and the use of IEEE standards as applied to the design, building, and testing of special circuits, modules, or digital system.

Credit : 1 unit
Prerequisites : COE121, COE134, EECE100-1, EE103, ECE104

COE124D. DESIGN 2

This is the second of the two course series on major design experience of Computer Engineering students. It is a continuation of COE123D, hence, at the end of this course, students are expected to submit the final document and the prototype of their approved design topic to a panel of critics for final approval.

Credit : 1 unit
Prerequisite : COE123D

COE125. SOFTWARE ENGINEERING

A course on software development processes such as project planning, requirement analysis, system and program design, program implementation tools and techniques, coding and programming techniques, program and system testing, software maintenance, and reusable software management issues.

Credit : 3 units
Prerequisite : COE127

COE126F. SEMINARS AND FIELD TRIPS

Covers seminars and lectures on current trends, issues or topics on Computer Engineering developments. Topics include field trips to different companies and plants dealing with computer system facilities.

Credit : 1 unit
Prerequisite : SFTY100, ECE131, ECE107

COE127. PRINCIPLES OF OPERATING SYSTEMS

Covers the concepts and approaches in the design and construction of a modern computer operating system. It includes the study of the computer system and operating system structures, process management, threads, CPU scheduling, process synchronization, deadlocks, memory management, virtual memory, file system interface and implementation, input/output systems, mass-storage structure, distributed system structures, distributed file systems, protection, and security.

Credit : 3 units
Prerequisites : COE118, COE119

COE127L. PRINCIPLES OF OPERATING SYSTEMS LABORATORY

A laboratory course on the design and construction of modern computer operating systems.

Credit : 1 unit
Corequisite : COE127
Prerequisites : COE118, COE118L, COE119, COE119L

COE128. DISCRETE MATHEMATICS

A course that covers topics on logic including quantifiers, proofs, mathematical induction, sets, relations and functions. It also covers discussion of algorithms, recursive algorithms, and recurrence relations and their use in the

analysis of algorithms, graph theory, trees, and introduction to automata.
Credit : 3 units
Prerequisite : MATH10-4

COE129L. COMPUTER ENGINEERING DRAFTING AND DESIGN
A study of the principles of layout of electrical and electronic drawings, stressing modern representation used for block diagrams, wiring/assembly drawings and printed circuit board layouts.
Credit : 1 unit
Prerequisite : COE118, COE119

COE130. IT FOR EE
This course is about the discussion of information technologies applicable in the practice of electrical engineering. It focuses on software development, data communications, computer networking, databases, internet, and web technologies.
Credit : 2 units
Prerequisite : CS10-1L

COE130L. IT FOR EE LABORATORY
A laboratory course to accompany COE130
Credit : 1 unit
Corequisite : COE130
Prerequisite : CS10-1L

COE131. SYSTEM ANALYSIS AND DESIGN
This course covers the different phases of systems development and engineering with focus on analysis and design. It covers how to handle requirements, architectural design, integration and verification and shall be facilitated thru project-team design approach in accordance with recognized standards. The students will also be introduced to recent work on the complexity of real world systems, with issues such as multi-level systems, and iterative development.
Credit : 3 units
Prerequisite : COE123, COE125

COE131L. SYSTEM ANALYSIS AND DESIGN LABORATORY
The accompanying laboratory course of COE131.
Credit : 1 unit
Corequisite : COE131
Prerequisite : COE123, COE125

COE132. TECHNOPRENEURSHIP
Technopreneurship is a course on entrepreneurship with emphasis on the technology industry. The course introduces to students not just the concept of entrepreneurship like seeking opportunities and making business plans but taking into account specific issues and characteristics found in the technology industry. The course will cover technopreneurship specific topics like history of technology, technology organization, marketing technology, financing technology ventures, governmental and legal factors like patents and copyright and technology strategies. Students are expected to submit a business plan as a major course requirement.
Credit : 3 units
Prerequisite : EMG20

COE133L. HDL PROGRAMMING LABORATORY
A laboratory course that introduces to students hardware description language or HDL as a tool for designing and testing digital circuits. The course covers fundamentals of HDL, the rules governing HDLs, as well as the basics of digital logic design using available HDL compiler.
Credit : 1 unit
Corequisite : COE118
Prerequisites : COE113, COE113L, COE117, COE117L

COE134. CODES AND SPECIFICATIONS
A course that covers codes of the different symbols, materials, and components that are applicable and appropriate in Computer Engineering design and the use of specifications to define materials or components as an essential part of the design.
Credit : 1 unit
Prerequisite : COE118, COE119

COE185P. INTRODUCTION TO EMBEDDED SYSTEM
This course is designed to introduce to the students a unified view of software and hardware in designing embedded systems. It tackles the basic concepts of embedded systems and differentiates this system from other types of systems. The discussions include topics on microprocessors, memory subsystems and the architecture of embedded systems. The course will also describe how all these hardware components interact and the key concepts in embedded hardware design.
Credit : 3 units
Prerequisite : 4th Year Standing

COE186P. EMBEDDED SYSTEM SOFTWARE ARCHITECTURES
This course covers topics on embedded software architectures, parallel software and hardware implementation, and the different software used in embedded system design. The focus of the course is to introduce the different syntax available in programming embedded systems.
Credit : 3 units
Prerequisite : COE185P

COE187P. REAL TIME EMBEDDED SYSTEM
The course provides the opportunities to the students to learn various fundamental issues as well as practical developmental techniques in the area of real-time embedded systems. The topics include embedded system programming using real-time operating system, schedulability analysis, software structures with concurrent threads, interaction between threads, and the facilities provided by RTOS. The emphasis of the course is on the

rate monotonic analysis approach for schedulability analysis. Practical factors and case study will be illustrated in the course. Actual hands-on accompanies this course.
Credit : 3 units
Prerequisite : COE186P

COE188P. DESIGN AND DEVELOPMENT OF EMBEDDED SYSTEM
This course will cover different applications of embedded system. It includes topics on embedded system development using Field Programmable Gate Array and programming FPGA and microcontroller. Actual hands-on accompanies this course.
Credit : 3 units
Prerequisite : COE187P

COE190P. DIGITAL MICROELECTRONICS 1
This course deals with solid-state electronic devices; operation, fabrication and applications; single crystal growth, p-n junction, diodes, bipolar junction transistors, MOS capacitor, FETs. The course provides students with a sound understanding of existing devices and gives the necessary background to understand the problems and challenges of the microelectronic manufacturing.
Credit : 3 units
Corequisite : COE123
Prerequisite : 4th Year Standing

COE191P. DIGITAL MICROELECTRONICS 2
This course is an introduction to digital integrated circuits. The material will cover CMOS devices and manufacturing technology along with CMOS inverters and gates. Other topics include propagation delay, noise margins, power dissipation, and regenerative logic circuits. It will also cover various design styles and architectures as well as the issues that designers must face, such as technology scaling and the impact of interconnect.
Credit : 3 units
Prerequisite : COE190P

COE192P. DIGITAL MICROELECTRONICS 3
Top-down approach to asynchronous design and the relation between computer architecture and VLSI design. For the asynchronous design component: high-level synthesis, design by program transformations, and correctness by construction. Topics include delay-insensitive design techniques, description of circuits as concurrent programs, circuit compilation, and electrical optimizations.
Credit : 3 units
Prerequisite : COE191P

COE193P. DIGITAL MICROELECTRONICS 4
The course deals with special topics related to recent developments in microelectronics. Plant tours, case studies, projects, and design and implementation of ICs are some of the activities in this course.
Credit : 3 units
Prerequisite : COE192P

COE199R. CpE PRACTICUM
A course that enables the students to relate their acquired competencies to the realities and problems of industries. This may include involvement in the industry's manpower requirements, development and research concerns, trainings, applications of principles, environmental concerns, ethical and behavioral concerns, decision making, and equipment and materials concerns.
Credit : 3 units
Prerequisites : COE70, COE126F, COE163L, COE132, ENG13

COE200L. THESIS 1
A thesis course covering the development of the approved thesis topic. This course offers culminating activities and students are expected to apply learned concepts, methodologies, research tools and theories needed in developing their approved thesis topic.
Credit : 1 unit
Corequisite : COE131
Prerequisites : COE123, COE125, COE123D EECE100-1

COE200-1L. THESIS 2
This course is a continuation of thesis 1. Students are expected to develop the required prototype model (hardware, software or a combination of both) of the approved topic, conduct system analysis and testing to be able to complete the needed system.
Credit : 1 unit
Prerequisite : COE200L

COE200-2L. THESIS 3
This course is the last of the three thesis courses and involves the development and submission of the required thesis document as well as the oral presentation of the thesis topic.
Credit : 1 unit
Prerequisite : COE200-1L

ECE20. BASIC ELECTRONICS
This course deals with basic electronic devices, circuits, and systems. It covers semiconductor devices such as pn junction diodes, transistors; rectifier circuits, wave shaping circuits, logic circuits and power supplies.
Credit : 2 units
Corequisite : ECE20L (BE,BECM)
Prerequisites : PHY12, PHY12L, MATH24-1

ECE20L. BASIC ELECTRONICS LABORATORY
A laboratory course to accompany ECE20.
Credit : 1 unit
Corequisite : ECE20
Prerequisites : PHY12, PHY12L, MATH24-1

ECE50. ADVANCED ENGINEERING MATHEMATICS

The study of mathematical methods for solving engineering problems such as complex numbers, complex variables, Cauchy-Riemann equations, Laplace transform analysis, Fourier series and Fourier transform, z-transform, power series solutions of ordinary differential equations, partial differential equation, and hypergeometric equations such as Legendre and Bessel functions.
Credit : 3 units
Prerequisite : MATH24-1

ECE60. NUMERICAL METHODS WITH COMPUTING
This course covers the concepts of numerical analysis and computer software tools dealing with engineering problems. It includes techniques in finding the roots of an equation, solving systems of linear and non-linear equations, eigenvalue problems, polynomial approximation and interpolation, ordinary and partial differential equations. The Monte-Carlo method, simulations, error propagation and analysis, the methods of least squares and goodness-of-fit tests, are also discussed.
Credit : 3 units
Prerequisite : MATH24-1

ECE60L. NUMERICAL METHODS WITH COMPUTING LABORATORY
A laboratory course to accompany ECE60
Credit : 1 unit
Corequisite : ECE60
Prerequisite : MATH24-1

ECE70. ECE LAWS, CODES AND STANDARDS
This course deals with the study of various laws, codes, ethics, and standards in the practice of the electronics and communications engineering profession
Credit : 3 units
Prerequisite : 5th Year Standing

ECE100. INTRODUCTION TO ELECTRONICS ENGINEERING
This course introduces Electronics Engineering as a profession with emphasis on the learning methods and techniques to help the students adjust to the needs of the course, the quarter system, and to develop engineering skills to succeed in the study of ECE. Thus, it gives the student an introduction to the Engineering profession and other related fields of study, and the career paths available, with focus on the ECE course and its specializations.
Credit : 1 unit

ECE102. VECTOR ANALYSIS
This course deals with vector algebra, vector calculus, vector analysis, and their applications with focus in Electromagnetics.
Credit : 3 units
Prerequisite : MATH24-1

ECE103. ELECTRONICS 1
This course deals with electronic devices and circuits. It covers introduction to quantum mechanics of solid state electronics; diode and transistor characteristics and models (BJT and FET); diode circuit analysis and applications; transistor biasing; small signal analysis; large signal analysis; transistor amplifiers; Boolean logic; transistor switch; sources of electrostatic discharge (ESD) and its effect on electronic devices.
Credit : 3 units
Prerequisites : PHY12, MATH24-1

ECE103L. ELECTRONICS 1 LABORATORY
A laboratory course to accompany ECE103.
Credit : 1 unit
Corequisite : ECE103
Prerequisites : PHY12, PHY12L, MATH24-1

ECE104. ELECTRONICS 2
This course covers topics on high frequency transistor models; analysis of transistor circuits; bipolar junction transistors and FET (JFET, MOSFET); multi-stage amplifiers, feedback, differential amplifiers and operational amplifiers; integrated circuit families (RTL, DTL, TTL, ECL, MOS).
Credit : 3 units
Prerequisite : ECE103

ECE104L. ELECTRONICS 2 LABORATORY
A laboratory course to accompany ECE104.
Credit : 1 unit
Corequisite : ECE104
Prerequisites : ECE103, ECE103L

ECE105. ELECTRONICS 3
This course covers topics on applications of operational amplifiers, switching operation of transistors; digital circuit building blocks; multivibrators; passive and active wave shaping; pulse and clock circuits, sinusoidal and non-sinusoidal waveform oscillators, voltage regulators, analog-to-digital and digital-to-analog converters; different types of IC packages and basic testing of IC.
Credit : 3 units
Prerequisite : ECE104

ECE105L. ELECTRONICS 3 LABORATORY
A laboratory course to accompany ECE105.
Credit : 1 unit
Corequisite : ECE105
Prerequisites : ECE104, ECE104L

ECE107. SIGNALS SPECTRA, AND SIGNAL PROCESSING
The course deals with Fourier transform; z transform; convolution; FIR filters; IIR filters; random signal analysis; correlation functions; DFT; FFT; spectral analysis; applications of signal processing to speech, image, etc..
Credit : 3 units
Prerequisites : ECE50

ECE107L. SIGNALS SPECTRA, AND SIGNAL PROCESSING LABORATORY
A laboratory course to accompany ECE107.

Credit : 1 unit
Corequisite : ECE107
Prerequisite : ECE50

ECE109. INDUSTRIAL ELECTRONICS
This course teaches the theory and operation of solid-state devices and control circuits for industrial processes; industrial control applications; electronics instrumentation; transducers; data acquisition system, power supply and voltage regulator. It also covers photo electronics, sensors and instruments used in industrial applications. It includes variable-frequency drives, DC motor, servomotors and stepper motor drives; application of relay logic circuits; and interfacing and programming of PLCs. Special topics in welding systems, robotic and biomedical electronic principles are also included.
Credit : 3 units
Prerequisite : ECE104 for EE, ECE105 for ECE

ECE109L. INDUSTRIAL ELECTRONICS LABORATORY
A laboratory course to accompany ECE109.
Credit : 1 unit
Corequisite : ECE109
Prerequisites : ECE104, ECE104L for EE
ECE105, ECE105L for ECE

ECE109X. BASIC ELECTRONICS EXIT EXAM
The exam is designed to test students' knowledge of the principles, concepts, theories of Basic Electronics, Industrial Electronics, and their applications.
Credit : 0 Unit
Prerequisite : ECE104
Corequisite : ECE109

ECE110D. ELECTRONICS DESIGN
A course for the design of electronic device, apparatus, equipment, and systems
Credit : 1 unit
Prerequisite : ECE109

ECE110X. ELECTRONICS EXIT EXAM
The course includes a set of examinations covering the topics on electronics engineering to evaluate the readiness of the students to take advance courses.
Credit : 0 units
Prerequisite : ECE105
Corequisite : ECE109

ECE114. ELECTROMAGNETICS
The course deals with the study of electric and magnetic fields; resistive, dielectric and magnetic materials, coupled circuits, magnetic circuits and fields, and time-varying electromagnetic fields. It involves a review of vector analysis and types of coordinate system (Cartesian, cylindrical and spherical coordinate systems). Topics covered are dot and cross products of vector, Coulomb's law and electric field intensity of different charge configuration (volume, point, line sheet charge), electric flux density, Gauss's Law, divergence, Maxwell's equations and energy and potential.
Credit : 3 units
Prerequisite : MATH24-1

ECE114-0. ELECTROMAGNETICS FOR ECE
The course deals with the study of electric and magnetic field; resistive, dielectric, and magnetic materials; coupled circuits; magnetic circuits; and time-varying electromagnetic fields. Topics covered are Coulomb's law and electric field intensity of different charge configurations (volume, point, line sheet charge), electric flux density, Gauss's Law, divergence, potential energy, potential difference, magnetic flux density, magnetic field intensity, Maxwell's equations, and their applications.
Credit : 3 units
Prerequisite : ECE102

ECE117F. SEMINARS AND FIELD TRIPS
The course involves the attendance and participation of ECE graduating students in technical seminars/workshops related to the field of Electronics and Communications Engineering. Students are also required to attend non-technical seminars and training for the enhancement of their personality. It also involves short lectures on current trends and recent developments in ECE. It further includes educational visits to selected companies and manufacturing plants.
Credit : 1 unit
Prerequisite : 5th Year Standing

ECE121. PRINCIPLES OF COMMUNICATIONS
The course deals with the study of the fundamental elements of a communication system, transmitter, channel, receiver and noise. The course also covers bandwidth, filters, linear modulation, angle modulation, phase-locked loop, pulse modulation, multiplexing techniques, noise analysis, radio transmitters and receivers, and introduction to data communication.
Credit : 3 units
Prerequisites : ECE105 for ECE, ECE50 for COE, EE50 for EE

ECE121L. PRINCIPLES OF COMMUNICATIONS LABORATORY
A laboratory course to accompany ECE121
Credit : 1 unit
Corequisite : ECE121
Prerequisites : ECE105 for ECE / EE50 for EE

ECE122. DIGITAL COMMUNICATIONS
This course includes a review of random variables, bit error rate and matched filter concepts. It involves the study of pulse communications (PAM, PWM, PPM, PCM) and digital modulation techniques (ASK, FSK, PSK). It covers the study of signal space concepts, generalized orthonormal signals, information measures such as entropy, channel capacity, efficient encoding, error detection and correction,

information theory, and data compression. It also includes the study of Time Division Multiplexing.
Credit : 3 units
Prerequisites : ECE121

ECE122L. DIGITAL COMMUNICATIONS LABORATORY
A laboratory course to accompany ECE122
Credit : 1 unit
Corequisite : ECE122
Prerequisites : ECE121, ECE121L

ECE123. TRANSMISSION MEDIA & ANTENNA SYSTEMS
The course deals with transmission media, radio wave propagation wire and cable transmission systems, fiber-optic transmission system, transmission lines, and antenna systems.
Credit : 3 units
Prerequisite : ECE114-0, ECE122

ECE123L. TRANSMISSION MEDIA & ANTENNA SYSTEMS LABORATORY
A laboratory course to accompany ECE123
Credit : 1 unit
Corequisite : ECE123
Prerequisite : ECE114-0, ECE122, ECE122L

ECE124. COMMUNICATIONS 4
The course covers signal transmission modes, spread spectrum techniques, terrestrial and satellite systems, path calculations and link budget.
Credit : 3 units
Prerequisite : ECE123

ECE124D. COMMUNICATIONS 4 DESIGN
A design course to accompany ECE124
Credit : 1 unit
Corequisite : ECE124
Prerequisites : ECE123; ECE123L

ECE125. COMMUNICATIONS 5
This course covers communication systems analyses and design, operating performance and interface standards for voice and data circuits, private communication system planning and design, communications plant design and construction to include foundations and structure, outside plant engineering, surveying, switching and handling systems, mobile systems and standards, cellular radio systems, network planning, access and convergence network, optimization of telecom networks, and PSTN.
Credit : 3 units
Prerequisites : ECE124, ECE124D

ECE125D. COMMUNICATIONS 5 DESIGN
A design course to accompany ECE125
Credit : 1 unit
Corequisite : ECE125
Prerequisites : ECE124, ECE124D

ECE125X. COMMUNICATION SYSTEMS EXIT EXAM
The course includes a set of examinations covering the topics on communication systems to evaluate the readiness of the students to take professional practice.
Credit : 0 units
Prerequisites : ECE124, ECE163L
Corequisite : ECE125

ECE126. BROADCAST AND ACOUSTICS
The course deals with studio and room acoustics, acoustical transducers, mixers, principles and theories of broadcasting audio and video information; electronic equipment and peripheral devices necessary for AM, FM, and TV broadcast standards. It also involves the study of CATV, MATV, and CCTV and state-of –the industry video systems
Credit : 3 units
Prerequisites : ECE123; ECE123L

ECE126L. BROADCAST AND ACOUSTICS LABORATORY
A laboratory course to accompany ECE128
Credit : 1 unit
Corequisite : ECE126
Prerequisites : ECE123, ECE123L

ECE131. FEEDBACK AND CONTROL SYSTEMS
This course introduces to the students the basics of control systems; terminologies and diagrams; homogeneous and transient responses of systems; systems representation such as transfer functions, state-space analysis of phase variables and techniques, nth order linear differential equations; modeling, pole-zero gain data and frequency response data; Laplace transforms; block diagrams interconnections and simplifications; signal flow graphs; conversion of block diagrams to signal flow graphs and vice versa; root Locus; Bode, Nyquist and Polar plots; PID controllers; sensitivity and stability criteria; linear feedback systems; and compensation techniques.
Credit : 3 units
Prerequisites : ECE50 for ECE and COE/ EE50 for EE

ECE131L. FEEDBACK AND CONTROL SYSTEMS LABORATORY
A laboratory course to accompany ECE131
Credit : 1 unit
Corequisite : ECE131
Prerequisites : ECE50 for ECE and COE/EE50 for EE

ECE131X. PROFESSIONAL AND APPLIED MATHEMATICS EXIT EXAM
The exam is designed to test students' knowledge of the principles, concepts, and theories of Advanced Engineering Mathematics, Feedback Control Systems and their applications.
Credit : 0 Unit
Prerequisite : EE50
Corequisite : ECE131

ECE132X. SIGNALS, SYSTEMS AND APPLIED MATHEMATICS EXIT EXAM

The course includes a set of examinations covering the topics on signals, systems, and applied mathematics to evaluate the readiness of the students to take advance courses.

Credit : 0 units
Prerequisite : ECE107
Corequisite : ECE131

ECE141P. TEST DEVELOPMENT 1

The course provides students with an understanding of Automated Test Equipment and gives the necessary background to understand Analog Subsystems and Analog Test Methods and Techniques. The topics discussed in the course include ATE fundamentals/ Analog Testers, Introduction of CTS5010 Test Programming Environment (Programming Development Tool, Debugger Tool, Pattern Tool, Pin Map Tool, Graph Tool); Introduction of CTS programming structure; ATL Programming; Review of Unix File Manipulation Commands; Generation of Test Program Template (Main function, Limits Function , Test Routine function; Using VI to force (providing stimulus) / measure (measuring response) voltage; Using VI to force (providing stimulus) / measure (measuring response) current; Powering up DUT using DUT supply board; Routing analog signals from instrument to DUT using Analog Support Card; Configuring electrical circuit using relays; and Measuring electrical signal using DMM (HP3458).

Credit : 3 units
Prerequisite : ECE105 (for ECE)
ECE121 (for CpE)
ECE109 (for EE)

ECE142P. TEST DEVELOPMENT 2

The course provides students with an understanding of Digital Subsystem and gives the necessary background to understand Digital Test Methods and Techniques. The topics discussed in the course include configuration of Data Levels using pin card; Formatting digital data using formatters; Generating digital patterns using pattern tool; Timing digital patterns (signal vector) using pattern tool; Capturing Digital Patterns using pin cards and formatter; Writing digital signal using Digital Support Card; Reading digital signal using Digital Support Card; Generating Device Pin and Pin list using Digital Subsystem; and Looping pattern using Digital Subsystem.

Credit : 3 units
Prerequisite : ECE141P

ECE143P. TEST DEVELOPMENT 3

The course provides students with an understanding of mixed Signal Subsystem and gives the necessary background to understand Mixed Signal Test Methods and Techniques. The topics discussed in the course include generation analog signals using Arbitrary Waveform Generators; Using Test head low pass filter card as source filter; Capturing analog signal using Digitizer Viewing captured analog signal waveform using Graph Tool; Computing correct capture duration window; Using Main DAC and Dither DAC to generate high resolution composite voltage; Using sequencer for timing data drive Using sequencer for timing data receive; Using CTS mixed signal testing libraries; and using Graph Tool for viewing ADC input capture signal.Credit : 3 units
Prerequisite : ECE142P

ECE144P. TEST DEVELOPMENT 4

The course provides students with an understanding of Test Development Engineering Discipline. The topics discussed in the course include methods of product characterization through testing; Principles of Guardbanding; Identifying statistical outliers; Product Grading; Methods of ensuring test hardware/ program robustness; Testing Pitfalls : Hot switching, hot socketing; Dangers of EOS and ESD and practical ways of preventing them; Common ways to reduce test time; Transient suppression; and From Datasheet to Test List: A Test Engineer's path to creating a clear test plan.

Credit : 3 units
Prerequisite : ECE143P

ECE161P. COMMUNICATIONS ELECTIVE 1

This course begins with an introduction to RF circuit design issues and the wireless transceiver architecture. Design methodologies of active and passive circuits, amplifiers, oscillators, phase-locked loops, clock and data recovery circuits as used in RF equipment are also included. Noise and its effects are discussed in this course.

Credit : 3 units
Prerequisite : ECE121

ECE162P. COMMUNICATIONS ELECTIVE 2

The topics covered in this course include basic theory of periodic and random signals and linear transmission systems, decision and information theory, cryptography, error control coding, video transmission, compression and storage; communication system simulation.

Credit : 3 units
Prerequisite : ECE161P

ECE163P. COMMUNICATIONS ELECTIVE 3

The subject deals with the study of principles and theories of navigational systems for air, marine, and space. It also includes the study of the principles of operation of existing electronic navigational aids and devices such as RADARs, directional finders (ADF), non-directional beacons (NDB), LORAN/DECCA/OMEGA systems, instrument landing systems (ILS), distance measuring equipment (DME), VHF Omni Range (VOR), and Global Position System (GPS), CNS.

Credit : 3 units
Prerequisite : ECE162P

ECE164P. COMMUNICATIONS ELECTIVE 4

The course covers special topics dealing with advances, recent developments, and emerging technologies in electronic communications. Plant tours, case studies, design, and projects are some of the activities in this course.
Credit : 3 units
Prerequisite : ECE163P

ECE173P. MICROELECTRONICS 1
The course provides students with an understanding of existing devices and gives the necessary background to understand the problems and challenges involved in microelectronics. The topics discussed in the course include solid-state electronic devices; fabrication, assembly, operation, and applications; single crystal growth; p-n junction, diodes, bipolar junction transistors, MOS capacitor, FETs.
Credit : 3 units
Prerequisite : ECE105

ECE174P. MICROELECTRONICS 2
This course is an introduction to digital integrated circuits. The material will cover CMOS devices and manufacturing technology along with CMOS inverters and gates. Other topics include propagation delay, noise margins, and power dissipation. It also covers various design styles and architectures as well as the issues that the designers must face such as technology scaling and the impact of interconnect.
Credit : 3 units
Prerequisite : ECE173P

ECE175P. MICROELECTRONICS 3
The course covers top-down approach to asynchronous design and the relation between computer architecture and VLSI design. Topics include delay insensitive design techniques, description of circuits as concurrent programs, circuit compilation, and electrical optimization. CAD tools are used in the design process.
Credit : 3 units
Prerequisite : ECE174P

ECE176P. MICROELECTRONICS 4
The course deals with special topics related to recent developments in microelectronics. Plant tours, case studies, projects, and design and implementation of ICs are some of the activities in this course.
Credit : 3 units
Prerequisite : ECE175P

ECE181P. ROBOTICS AND MECHATRONICS 1
This course deals with an overview of robotics. Topics covered include rigid body mobile mechanisms, forward and inverse kinematics, Jacobian, dynamics and position control robot manipulators, force control and trajectory generation, collision avoidance and motion planning, robot programming languages, vision, sensors, transducers, and industrial robots.
Credit : 3 units
Prerequisite : 4th Year Standing

ECE182P. ROBOTICS AND MECHATRONICS 2
This course deals with mechanical engineering, electronic control, and the systems view in the design of products and manufacturing processes. Topics included are robotics, mechatronics, distributed controls, SCADA, and Computer Integrated Manufacturing Systems.
Credit : 3 units
Prerequisite : ECE181P

ECE183P. ROBOTICS AND MECHATRONICS 3
This course deals with Artificial Neural networks, Fuzzy logic, Expert Systems, Genetic algorithms, biologically inspired algorithms, and Hybrid Systems.
Credit : 3 units
Prerequisite : ECE182P

ECE184P. ROBOTICS AND MECHATRONICS 4
This course deals with special topics related to recent developments in robotics, mechatronics, and computer integrated manufacturing systems. Plant tours, case studies, projects, and design and implementation of robotic, mechatronic, and computer integrated systems, are some of the activities in this course.
Credit : 3 units
Prerequisite : ECE183P

ECE191P. POWER ELECTRONICS 1
This course begins with an introduction to the fundamentals of AC to DC (rectifier), DC to AC (inverter), AC to AC (voltage controller), and DC to DC conversion. Power semiconductor devices and switches such diodes, thyristors, BJTs, FETs, GTOs, IGBTs are discussed. Other topics include voltage, current power calculations; simulations; and operation of basic converters such as buck, boost, and buck-boost.
Credit : 3 units
Prerequisites : ECE109, ECE109L

ECE192P. POWER ELECTRONICS 2
The course involves the study of power supplies. Different types of DC-DC switch-mode converters are discussed. The course includes the study of the various topologies, architectures, implementations, technological approaches in the design and manufacture of UPS for commercial and industrial applications, and the types of batteries used. Other design and implementation issues addressed in the course are redundant systems, upstream electrical compatibility, and compliance with standards.
Credit : 3 units
Prerequisite : ECE191P

ECE193P. POWER ELECTRONICS 3
This course covers topics dealing with rectifiers and inverters and power electronic drives for induction, synchronous and step-motor. Other topics include

residential, commercial, industrial applications; utility interface with power electronic system; electromagnetic interference issues.
Credit : 3 units
Prerequisite : ECE192P

ECE194P. POWER ELECTRONICS 4
The course deals with special topics in Power Electronics. Plant tours, case studies, projects, and design and implementation of power electronic converters are some of the activities in this course
Credit : 3 units
Prerequisite : ECE 193P

ECE199R. ECE PRACTICUM
Industry exposure of students for them to match school acquired competencies and knowledge with the realities and problems of industry. This may include involvement in industry manpower requirements, development and research concerns, training, and applications of principles, environmental concerns, ethical and behavioral concerns, decision-making, and equipment and materials management. The student shall prepare a thesis on a topic covered by his experiences.
Credit : 3 units
Prerequisite : ECE70, ECE198L

ECE200L. THESIS 1
An application of the concepts of Methods of Research in preparation for a full blown research proposal with defense; start of laboratory/field work
Credit : 1 unit
Prerequisite : EECE100

ECE200-1L. THESIS 2
This course is a continuation of the laboratory/field work in ECE200L. A progress report is to be presented to the thesis panel.
Credit : 1 unit
Prerequisite : ECE200L

ECE200-2L. THESIS 3
This course is a continuation of the laboratory/field work in ECE200-1L. A final thesis will be submitted for defense before the thesis panel.
Credit : 1 unit
Prerequisite : ECE200-1L

ECE70X. ECE SCIENCES EXIT EXAM
The course includes a set of examinations covering the topics on ECE general engineering and applied sciences to evaluate the readiness of the students to take professional practice.
Credit : 0 units
Prerequisites : MSE102-1, EE153, SFTY100, EMG20, EE40
Corequisite : ECE70

EE20. ELEMENTARY ELECTRICAL ENGINEERING
The course covers the fundamental concepts and laws of electrical engineering; circuit theory; analysis and applications of series, parallel and series-parallel resistive circuits; mesh and nodal analysis; circuit analysis techniques and network theorems.
Credit : 3 units
Prerequisites : PHY12, PHY12L, MATH24-1

EE20L. ELEMENTARY ELECTRICAL ENGINEERING LABORATORY
A laboratory course to accompany EE20
Credit : 1 unit
Corequisite : EE20
Prerequisites : PHY12, PHY12L, MATH24-1

EE21. BASIC ELECTRICAL ENGINEERING
The course covers the basic concepts and laws of electrical circuit theory; analysis and applications of series, parallel and series-parallel resistive circuits; mesh and nodal analysis; circuit analysis techniques and applications of different network theorems.
Credit : 2 units
Prerequisites : PHY12, PHY12L, MATH24-1
MATH22-1, PHY11-2, PHY11-2L (SEM)

EE21L. BASIC ELECTRICAL ENGINEERING LABORATORY
A laboratory course to accompany EE21
Credit : 1 unit
Corequisite : EE21
Prerequisites : PHY12, PHY12L, MATH24-1
MATH22-1, PHY11-2, PHY11-2L (SEM)

EE22. DC/AC MACHINERY
This course covers the study of DC machines such as generators and motors, its principles and characteristics. It also includes the underlying principles of AC machines, its analytical treatment, construction, characteristics, operation and various related phenomena of alternators, induction motors, and synchronous motors.
Credit : 3 units
Prerequisites : EE20, EE20L
Prerequisites : EE21, EE21L for ME

EE22L. DC/AC MACHINERY LABORATORY
A laboratory course to accompany EE22
Credit : 1 unit
Corequisite : EE22
Prerequisites : EE20, EE20L
Prerequisites : EE21, EE21L for ME

EE23. BASIC ELECTRICAL ENGINEERING
The course covers the basic concepts and laws of electrical circuit theory; analysis and applications of series, parallel

and series-parallel resistive circuits; mesh and nodal analysis; circuit analysis techniques and applications of different network theorems.
Credit : 3 units
Prerequisites : MATH22-1, PHY11-2, PHY11-2L

EE23L. BASIC ELECTRICAL ENGINEERING FOR EMG LABORATORY
A laboratory course to accompany EE23
Credit : 1 unit
Corequisite : EE23
Prerequisites : MATH22-1, PHY11-2, PHY11-2L

EE24. BASIC ELECTRICAL ENGINEERING
This course provides the students with a sound background in the theory and concepts of the fundamental and basic laws of electricity and magnetism. Practical applications such as electrical equipment, electrical safety, blueprint reading, house and commercial building wiring, and lighting are introduced.
Credit : 3 units
Prerequisites : PHY12, PHY12L, MATH24-1

EE40. ENGINEERING ECONOMY
The course deals with the concepts of time value of money and equivalence, basic economy study methods, decisions under certainty, decisions recognizing risk, and decisions admitting uncertainty, and capital investment decision criteria.
Credit : 3 units
Prerequisite : 3rd Year Standing

EE50. ADVANCED ENGINEERING MATHEMATICS FOR EE
The study of mathematical methods for solving engineering problems such as complex number, complex variables, Cauchy-Riemann equations, Laplace transformation and Laplace transform analysis, Fourier series and Fourier transform, z-transform, power series solutions of ordinary differential equations, partial differential equation, and hypergeometric equations such as Legendre and Bessel functions.
Credit : 3 units
Prerequisite : MATH24-1

EE60. NUMERICAL METHODS
This course covers the concepts of numerical analysis and the capability of computer software/tools dealing with engineering problems. It includes numerous techniques in finding the roots of an equation, solving systems of linear and non-linear equations, eigenvalue problems, polynomial approximation and interpolation, ordinary and partial differential equations. Approximation of roots by the use of differentiation and integration, the Monte-Carlo methods and simulation, error propagation and analysis, the methods of least squares and goodness-of-fit tests are also discussed.
Credit : 3 units
Prerequisite : MATH24-1

EE60L. NUMERICAL METHODS WITH COMPUTING LABORATORY
A laboratory course to accompany EE60
Credit : 1 unit
Corequisite : EE60
Prerequisite : MATH24-1

EE71. EE LAWS, CONTRACTS, AND ETHICS
This course deals with the study of various laws, codes, ethics and standards in the practice of electrical engineering profession
Credit : 2 units
Prerequisite : 4th Year Standing

EE100. INTRODUCTION TO ELECTRICAL ENGINEERING
This course introduces Electrical Engineering as a profession with emphasis on the learning methods and techniques to help the students adjust to the needs of the course, the quarter system, and to develop engineering skills to succeed in the study of EE. Thus, it gives the student an introduction to the Engineering profession and other related fields of study, and the career paths available, with focus on the EE course and its specializations.
Credit : 1 unit

EE101. ELECTRICAL CIRCUITS 1
The course covers the basic concepts and fundamental laws of electrical circuit theory; analysis and applications of series, parallel and series-parallel resistive circuits; mesh and nodal analysis; circuit analysis techniques and network theorems; analysis of resistive circuits containing ideal operational amplifiers; characteristics of inductors and capacitors; analysis of RL, RC and RLC circuits with DC excitation; basic computer-aided circuit analysis and design.
Credit : 3 units
Prerequisite : PHY12, MATH24-1

EE101L. ELECTRICAL CIRCUITS LABORATORY 1
A laboratory course to accompany EE101
Credit : 1 unit
Corequisite : EE101
Prerequisites : PHY12, PHY12L, MATH24-1

EE103. ELECTRICAL CIRCUITS 2
The course covers the sinusoidal function and the sinusoidal forced response of RLC circuits; steady-state frequency domain analysis of RLC circuits driven by a sinusoidal voltage/current source; application of mesh/nodal analysis and network theorems in AC circuit analysis; concept of power in AC circuits; steady state analysis and applications of bridge circuits, resonant circuits, transient analysis with AC sources; computer-aided AC circuit analysis.
Credit : 3 units
Prerequisite : EE101

EE103L. ELECTRICAL CIRCUITS LABORATORY 2

A laboratory course to accompany EE103
Credit : 1 unit
Corequisite : EE103
Prerequisites : EE101, EE101L

EE104. ELECTRICAL CIRCUITS 3
The course covers the study of three-phase systems, with balanced and unbalanced loading; analysis of two-port networks and magnetically-coupled circuits; and symmetrical components.
Credit : 3 units
Prerequisite : EE103

EE104L. ELECTRICAL CIRCUITS LABORATORY 3
A laboratory course to accompany EE104
Credit : 1 unit
Corequisite : EE104
Prerequisites : EE103, EE103L

EE104X. ELECTRICAL CIRCUITS EXIT EXAM
The exam is designed to test students' knowledge of principles, theories, concepts of Electrical Circuit, and its applications.
Credit : 0 Unit
Prerequisite : EE103
Corequisite : EE104

EE106. DC MACHINERY
The course covers the principles of electromechanical energy conversion, generalized machine model, and the operating characteristics of DC machines
Credit : 2 units
Prerequisite : EE103

EE106L. DC MACHINERY LABORATORY
A laboratory course to accompany EE106
Credit : 1 unit
Corequisite : EE106
Prerequisites : EE103, EE103L

EE108. AC MACHINERY
The course covers the theory, principle of operation, and applications of three-phase alternators, three-phase induction motors, synchronous motors, single-phase motors, and special machines.
Credit : 3 units
Prerequisite : EE104
Corequisite : EE 109

EE108L. AC MACHINERY LABORATORY
A laboratory course to accompany EE108
Credit : 1 unit
Corequisite : EE109L
Prerequisites : EE104, EE104L

EE109. AC APPARATUS AND DEVICES
The course deals with the theory, principle of operation, and applications of single-phase transformers; parallel operation of transformers; autotransformers; three-phase transformers; instrument transformers; circuit breakers and fuses; and other selected equipment and devices currently used in the field.
Credit : 2 units
Prerequisite : EE104
Corequisite : EE 108

EE109L. AC APPARATUS AND DEVICES LABORATORY
A laboratory course to accompany EE109
Credit : 1 unit
Corequisite : EE108L
Prerequisites : EE104, EE104L

EE109X. ELECTRICAL MACHINERY EXIT EXAM
The exam is designed to test students' knowledge of principles, theories, concepts of DC and AC Machinery, AC Apparatus and Devices, and their applications.
Credit : 0 Unit
Prerequisite : None
Corequisites : EE108, EE109

EE110. ELECTRICAL ENGINEERING DESIGN
A course involving the design and installation of the electrical system of residential, commercial and industrial establishments, applying the provisions of the National Electrical Code (NEC) and the latest version of the Philippine Electrical Code (PEC), incorporating relevant laws and standards
Credit : 2 units
Prerequisites : EE108
Corequisite : EE 114

EE110D. ELECTRICAL ENGINEERING DESIGN (DESIGN)
A design course to allow individual students to design a residential, commercial and industrial establishment applying the provisions of the National Electrical Code (NEC) and the Philippine Electrical Code, including applicable laws and standards; it also involves the preliminary cost estimate of the designed system.
Credit : 1 unit
Prerequisites : EE110

EE111. ELECTRICAL ENGINEERING SAFETY
The course deals with the industrial accident prevention and safety organization, accident analysis, selection and application of remedy/corrective actions, industrial health and environmental concerns, first-aid, and CPR.
Credit : 1 unit
Prerequisite : 4th Year Standing

EE112. ELECTRICAL EQUIPMENT: OPERATION & MAINTENANCE
The course covers the principle of operation, functions, characteristics and applications of different electrical equipment and devices. Other topics are design, installation and troubleshooting, and automation and control of different kinds of industrial motors.
Credit : 3 units

Prerequisite : EE108, EE109

EE112L. ELECTRICAL EQUIPMENT: OPERATION & MAINTENANCE LABORATORY
A laboratory course to accompany EE112
Credit : 1 unit
Corequisite : EE112
Prerequisites : EE108, EE108L, EE109, EE109L

EE112X. ELECTRICAL ENGINEERING SCIENCES EXIT EXAM
The exam is designed to test students' knowledge of principles, theories, concepts of the Engineering Sciences courses, and their applications.
Credit : 0 Unit
Corequisite/s : ECE121

EE113. INSTRUMENTATION AND CONTROL
This course deals with the study on control and testing: electromechanical, analog and digital measuring and testing instruments; R, L and C measurements: calibration; graphic and waveform analyzing instruments; detectors for the measurements of process variables; analysis of performance characteristics of control systems; electronics, magnetic, hydraulic and mechanical control.
Credit : 3 units
Prerequisite : EE103

EE113L. INSTRUMENTATION AND CONTROL LABORATORY
A course to accompany EE113
Credit : 1 unit
Corequisite : EE113
Prerequisites : EE103, EE103L

EE114. ILLUMINATION ENGINEERING
This course deals with the illumination design and cost estimation, using energy-efficient lighting systems, of residential, commercial, and industrial establishments. It also includes discussion of roadway lighting, means of lighting controls, and lamp waste management, among others.
Credit : 2 units
Prerequiste : EE108
Corequisite : EE 110, EE 114D

EE114D. ILLUMINATION ENGINEERING DESIGN
A design course for students to do illumination design and cost estimation, using energy-efficient lighting systems, in residential, commercial, and industrial establishments; it also includes design of roadway lighting, etc
Credit : 1 unit
Corequisite : EE114, EE110

EE114X. ELECTRICAL SYSTEMS AND ILLUMINATION SYSTEM DESIGN EXIT EXAM
The exam is designed to test students' knowledge of principles, theories, concepts of Electrical Systems, and Illumination Design, and their applications.
Credit : 0 Unit
Prerequisite : None
Corequisites : EE110, EE114

EE115. POWER SYSTEM
This course deals with the study on the basic structure of power systems, recent trends and innovations in power systems, complex power, per-unit quantities, transmission line parameters, network modeling and calculations, load flow studies, short circuit calculations and use of computer software for simulation.
Credit : 3 units
Prerequisite : EE108, EE109
Corequisite : EE115D

EE115D. POWER SYSTEM (DESIGN)
A design course to allow students to design, network modeling and calculations of a power system and apply available software for simulation
Credit : 1 unit
Corequisite : EE115

EE116. POWER PLANT ENGINEERING
This course covers topics on load graphics, types of power plants, power plant operation and protection, interconnections, economics of electric service, and arrangement of equipment for modern plants.
Credit : 2 units
Corequisite : EE117
Prerequisite : EE115

EE116D. POWER PLANT ENGINEERING DESIGN
A design course for students to design a power plant, its interconnection, operation, economics and protection
Credit : 1 unit
Corequisite : EE116
Prerequisite : EE115

EE116X. POWER PLANT ENGINEERING EXIT EXAM
The exam is designed to test students' knowledge of principles, theories, concepts of Power System Analysis and Power Plant Engineering, and their applications.
Credit : 0 Unit
Prerequisite : EE115
Corequisite : EE116

EE117. ELECTRICAL TRANSMISSION AND DISTRIBUTION SYSTEM
A course that deals with the design of primary and secondary distribution networks, load characteristics, voltage regulation, metering techniques and systems, and protection of distribution systems
Credit : 3 units
Prerequisite : EE115

EE117L. ELECTRICAL TRANSMISSION AND DISTRIBUTION SYSTEM LABORATORY
A course to accompany EE117
Credit : 1 unit
Corequisite : EE117
Prerequisite : EE115

EE117X. ELECTRICAL TRANSMISSION AND DISTRIBUTION EXIT EXAM

The exam is designed to test students' knowledge of principles, theories, concepts of Power System Analysis and Electrical Transmission, and their applications.

Credit : 0 Unit
Prerequisite : EE115
Corequisite : EE117

EE118F. SEMINARS AND FIELD TRIPS

The course involves the attendance and participation of EE graduating students in technical seminars/workshops related to the field of Electrical Engineering. Students are also required to attend non-technical seminars and training for the enhancement of their personality. It also involves short lectures on current trends and recent developments in EE technology. It further includes educational visits to selected companies and manufacturing plants.

Credit : 1 unit
Prerequisites : FOR GRADUATING STUDENTS ONLY

EE120. PATENT LAW AND INTELLECTUAL PROPERTY RIGHTS

The course involves the general introduction to patent law, and the basic legal rules and policies that constitute the important field of intellectual property law. The substance of the course will be on the specific requirements for patentable subject matter, such as the utility, disclosure, enablement, novelty, and non-obviousness requirements, and the statutory bars of public use, sale and abandonment.

Credit : 1 unit
Prerequisites : 3rd Year Standing
Corequisite : EECE100

EE153. ENERGY CONVERSION

Principles of energy conversion and transducers: electromechanical, photoelectric, photovoltaic, thermoelectric, piezzoelectric; Hall effect; reed switch; electrochemical, etc; generators, transformers; dynamic analysis and fuel cells.

Credit : 3 units
Prerequisites : EE103, EE103L, EE103X

EE153L. ENERGY CONVERSION LABORATORY

A laboratory course to accompany EE153

Credit : 1 unit
Corequisite : EE153
Prerequisites : EE103, EE103L, EE103X

EE160P. INDUSTRIAL AUTOMATION 1

The course covers sequential control, advanced PLC commands, data manipulation, PLC analog control, motor control, *etc*.

Credit : 3 units
Prerequisites : ECE109, ECE109L

EE161P. INDUSTRIAL AUTOMATION 2

The course teaches several types of industrial sensors, calibration, PID control system, tuning and stability, PLC commands using PID principle, *etc*.

Credit : 3 units
Prerequisite : EE160P

EE162P. INDUSTRIAL AUTOMATION 3

The course teaches supervisory control and man-machine interfaces. It teaches how to design an animated graphic representation of an automated process.

Credit : 3 units
Prerequisite : EE161P

EE163P. INDUSTRIAL AUTOMATION 4

The course is a project-based system application which requires integration of different technologies (mechatronics, instrumentation, and SCADA).

Credit : 3 units
Prerequisite : EE162P

EE168. RENEWABLE ENERGY FOR SUSTAINABLE DEVELOPMENT

This course deals with the introduction to alternative energy, the usefulness of various types of energies as they relate to sustainable development. Topics include the types of PV cells, its systems, components, operation and its applications; biofuel derived from biological sources and their applications as an energy source for homes, industry and other various applications; hydroelectric power; geothermal energy; and the design, & control of all sub-components of a wind turbine.

Credit : 1 unit
Prerequisite : 4th Year Standing

EE173. POWER SYSTEM PROTECTION 1

This course deals with the study on the protection of alternators and transformers connected to the electric system at various conditions.

Credit : 3 units
Prerequisites : EE109, EE109L

EE174. POWER SYSTEM PROTECTION 2

A course involving a study of relay operating principles and characteristics, types of protective relays, applications of protective relaying, and selection of protective relays for transmission and distribution substations/switchgears.

Credit : 3 units
Prerequisites : EE173

EE175. POWER SYSTEM PROTECTION 3

Electrical surges including traveling waves due to lightning and switching. Topics to be discussed include principles of lightning protection, multi-velocity waves, insulation coordination, application of surge protection devices and power system grounding.

Credit : 3 units
Prerequisite : EE174

EE176. POWER SYSTEM PROTECTION 4
The course will cover insulations in electric field, electrical discharges and insulation systems, calculation of transient voltages, overvoltage, overvoltage protection and insulation coordination, and testing and measuring techniques.
Credit : 3 units
Prerequisite : EE175

EE181. POWER SYSTEMS 1 - Generation
This course as part of the Electric Power Distribution System will familiarize the students with current engineering trends and the latest development in technology. It covers the different types of power plants, generation rates and pricing, operation and control systems, and others. The course will also deal with real life applications.
Credit : 3 units
Prerequisite : EE1109, EE109L

EE182. POWER SYSTEMS 2 - Transmission
This course covers the basic operation of power transmission systems including substation facilities, operating voltages, applicable rules and regulation, and transmission rates and pricing. It will also give an overview on how power flows using a single line diagram of the existing Luzon Grid, Visayas Grid and Mindanao Grid. In addition the course will also familiarize the students with computation of rates and pricing using the latest applicable rules and regulation (EPIRA).
Credit : 3 units
Prerequisite : EE181

EE183. POWER SYSTEMS 3 - Distribution
This course covers the different levels of distribution voltages, different types of substations installed in a distribution utility, substation major equipment and their functions; overview of power system protection, overview of SCADA, applicable rules and regulations in distribution systems, and distribution rates and pricing.
Credit : 3 units
Prerequisite : EE182

EE184. POWER SYSTEMS 4 - Supply
This course covers the integration of generation, transmission, and distribution sectors in order to provide electric supply for end-use. Also covered is an illustration of the whole power industry and the complex relationship of its players; strategies on how to maximize spot market benefits involving pricing and other related factors; value-added topics related to electric supply, including self-generation and SmartGrid; and applicable rules and regulations to provide an up-to-date regulatory environment.
Credit : 3 units
Prerequisite : EE183

EE199R. ON THE JOB TRAINING
Industry exposure of students for them to match school acquired competencies and knowledge with the realities and problems of industry. This may include involvement in industry manpower requirements, development and research concerns, training, and applications of principles, environmental concerns, ethical and behavioral concerns, decision-making, equipment and materials management. The student shall prepare a thesis on a topic covered by his/her experiences.
Credit : 3 units
Prerequisite : FOR GRADUATING SDTUDENTS ONLY

EE200L. THESIS 1
This is an application of the concepts of Methods of Research that deals with the preparation of a full blown research proposal which includes the defense of the proposed study and marks the start of laboratory/field work.
Credit : 1 unit
Prerequisites : EE109X, EECE100

EE200-1L. THESIS 2
This is the continuation of the laboratory/field work in THESIS200L. A progress report is to be presented to the thesis panel.
Credit : 1 unit
Prerequisite : EE200L

EE200-2L. THESIS 3
This is the continuation of the laboratory/field work in THESIS200-1L. A final thesis defense is to be presented to the thesis panel as the output.
Credit : 1 unit
Prerequisite : EE200-1L

EECE100. METHODS OF RESEARCH
Nature and characteristics of research, the general approach to research studies, and processes and methodologies of research as applied to engineering; elements of technical writing as applied to the preparation of reports, proposals and theses; writing of a research proposal.
Credit : 2 units
Prerequisite : MATH30-6, 3rd Year Standing
Corequsite : EE120

EECE100-1. METHODS OF RESEARCH
Nature and characteristics of research, the general approach to research studies, and processes and methodologies of research as applied to Computer Engineering; elements of technical writing as applied to the preparation of reports, proposals and theses; writing of a Computer Engineering research proposal.
Credit : 2 units
Corequsite : COE121, COE127
Prerequisite : MATH30-6, COE118, COE119, ECE121

TCE10. PRICIPLES OF ELECTRONICS

This course offers an overview on principles, theories, concepts and application of Electronics, Industrial Electronics and Microelectronics.
Credit : 3 units
Prerequisite : NA

TCE11. PRINCIPLES OF COMMUNICATION TECHNOLOGY
This course will cover electronic communications techniques; modulation and demodulation of information; transmission and reception of analog and digital signals over wired and wireless channels / networks.
Credit : 3 units
Prerequisite : TCE10