

Recommended Plan of Studies for Bachelor of Electrical Engineering

SEMESTER-1				SEMESTER-2			
Course ID	Course Title	Cr. Hr.	Pre-req	Course ID	Course Title	Cr. Hr.	Pre-req
HS -111	Functional English	2+0	-	EE-121	Workshop Practice	0+1	-
NS-111	Calculus and Analytical Geometry	3+0	-	HS-121	Pakistan Studies	2+0	-
NS-112	Applied Physics	3+1	-	NS-121	Differential Equations	3+0	NS-111
CSE-111	Introduction to Computing	2+1	-	CSE-121	Programming Fundamentals	3+1	CSE-111
EE-111	Linear Circuit Analysis	3+1	-	EE-122	Electronic Devices and Circuits	3+1	EE-111
HS-112	Islamic Studies / Ethical Behavior	2+0	-	ME-121	IDEE-I (<i>Engineering Mechanics</i>)	3+0	-
Total credits		18		Total credits		17	
SEMESTER-3				SEMESTER-4			
Course ID	Course Title	Cr. Hr.	Pre-req	Course ID	Course Title	Cr. Hr.	Pre-req
NS-211	Complex Variables and Transforms	3+0	NS-111	NS-221	Linear Algebra	3+0	
HS-211	Communication Skills	2+0	HS -111	EE-221	Electromagnetic Field Theory	3+0	NS-211
EE-211	Digital Logic Design	3+1	-	EE-222	Signals and Systems	3+1	NS-211
EE-212	Electrical Network Analysis	3+1	EE-111	EE-223	Probability Methods in Engineering	3+0	NS-111
CSE-211	Computing Elective (<i>Data Structure & Algorithm</i>)	3+1	CSE-121	ME-221	IDEE-II (<i>Thermodynamics</i>)	3+0	-
EE-213	Engineering Drawing	0+1		-			
Total credits		18		Total credits		16	
SEMESTER-5				SEMESTER-6			
Course ID	Course Title	Cr. Hr.	Pre-req	Course ID	Course Title	Cr. Hr.	Pre-req
EE-311	Electrical Machines	3+1	EE-212	HS-321	Technical Report Writing	3+0	-
NS-311	Natural Sciences Elective-I (<i>Numerical Analysis</i>)	3+0		EE-321	Breadth Core-I (<i>Electronics Circuit Design</i>)	3+1	EE-122
EE-312	Communication Systems	3+1	EE-222 EE-223	EE-322	Breadth Core-II (<i>Power Distribution & Utilization</i>)	3+1	EE-212
EE-313	Introduction to Embedded Systems	3+1	EE-211 CSE-121	EE-323	Depth Elective I (<i>Instrumentation & Measurement</i>)	3+1	-
EE-314	Linear Control Systems	3+1	EE-222	MS-321	Management Sciences Elective-I (<i>Entrepreneurship</i>)	3+0	-
Total credits		19		Total credits		18	
SEMESTER-7				SEMESTER-8			
Course ID	Course Title	Cr. Hr.	Pre-req	Course ID	Course Title	Cr. Hr.	Pre-req
EE-411	Depth Elective II (<i>Electrical Power Transmission</i>)	3+1	EE-212	EE-421	Depth Elective IV (<i>Digital Signal Processing</i>)	3+1	EE-222
HS-411	Humanities and Social Sciences Elective-I (<i>Organizational Behaviour</i>)	3+0	-	EE-422	Depth Elective V (<i>Power Generation</i>)	3+0	
MS-411	Management Sciences Elective-II (<i>Engineering Project Management</i>)	3+0	-	HS-421	Humanities and Social Sciences Elective-II (<i>Professional Ethics</i>)	3+0	-
EE-412	Depth Elective III (<i>Power Electronics</i>)	3+1	EE-122	EE-420	Final Year Project Part-II	0+3	EE-410
EE-410	Final Year Project Part-I	0+3	-	-			
Total credits		17		Total credits		13	

Total number of semesters = 8
Total number of courses = 40 Courses + FYP Project
Total credit hours = 136

List of Technical and General Electives

Natural Science Electives

Code	Course Title	Cr. Hrs.	Code	Course Title	Cr. Hrs.
NS-	Multivariable Calculus	3+0	NS-311	Numerical Analysis	3+0

Breadth Core

Courses	Cr. Hr.	Pre-Requisite
EE-322 Power Distribution and Utilization	3+1	EE-212 Electrical Network Analysis
EE-314 Power System Analysis	3+0	EE-212 Electrical Network Analysis
EE-321 Electronics Circuit Design	3+1	EE-122 Electronic Devices and Circuits

Depth Electives

Courses	Cr. Hr.	Pre-Requisite
EE-4XX Advanced Electrical Machines	3+1	EE-311 Electrical Machines
EE-421 Power System Protection	3+1	EE-322 Power Distribution and Utilization
EE-412 Power Electronics	3+1	EE-122 Electronic Devices and Circuit
EE-411 Electrical Power Transmission	3+1	EE-322 Power Distribution and Utilization
EE-4XX Digital Signal Processing	3+1	EE-222 Signals and Systems
EE-323 Instrumentation and Measurements	3+1	--
EE-422 Power Generation	3+0	EE-322 Power Distribution and Utilization
EE-4XX Power System Operation & Control	3+0	EE-314 Power System Analysis
EE-4XX Electrical Machine Design and Maintenance	3+1	EE-311 Electrical Machines
EE-4XX High Voltage Engineering	3+1	--
EE-4XX Renewable Energy Systems	3+1	--
EE-4XX Industrial Drives	3+0	EE-412 Power Electronics
EE-4XX FACTS and HVDC Transmission	3+1	EE-412 Power Electronics
EE-4XX Data Communication	3+1	--
EE-4XX Smart Grid	3+1	EE-314 Power System Analysis EE-312 Communication Systems

Humanities and Social Science Electives

Code	Course Title	Cr. Hrs.	Code	Course Title	Cr. Hrs.
HS-421	Professional Ethics	3+0	HS-411	Organizational Behavior	3+0
4XX	Sociology for Engineers	3+0	4XX	Professional Psychology	3+0
4XX	Critical Thinking	3+0			

Management Science Electives

Code	Course Title	Cr. Hrs.	Code	Course Title	Cr. Hrs.
MS-321	Entrepreneurship	3+0	MS-411	Engineering Project Management	3+0
MS-	Principles of Management	3+0	MS-	Leadership and Personal Grooming	3+0
MS-	Engineering Management	3+0	MS-	Engineering Economics	3+0