

## B.Sc. Electrical Engineering: Sessions 2012 - 2014

### Year 1

Semester 1				
Course No	Title	Hrs		Cat
		Th	Lb	
EE 100	Electric Circuits	3	1	E
HU 100	Communication Skills	2	0	H
HU 101	Islamic Studies/Ethics	3	0	H
MA 100	Calculus	3	0	M
ME 100	Engineering Drawing	0	1	E
ME 101	Workshop Practice	0	1	E
Ph 100	Applied Physics	3	1	S
<b>Subtotal</b>		<b>18</b>		

Semester 2				
Course No	Title	Hrs		Cat
		Th	Lb	
EE 102	Introduction to Computing	1	1	E
EE 110	Circuit Analysis & Design	3	1	E
EE 111	Semiconductor Devices	3	1	E
Ch 100	Applied Chemistry	3	0	S
MA 101	Differential Equations	3	0	M
ME 102	Applied Thermodynamics	3	1	E
<b>Subtotal</b>		<b>20</b>		

### Year 2

Semester 3				
Course No	Title	Hrs		Cat
		Th	Lb	
EE 211	Analog & Digital Electronics	3	1	E
EE 230	Programming Fundamentals	3	1	E
EE 270	Digital Logic Design	3	1	E
Bi 200	Applied Biology	3	0	S
MA 201	Linear Algebra	3	0	M
<b>Subtotal</b>		<b>18</b>		

Semester 4				
Course No	Title	Hrs		Cat
		Th	Lb	
EE 220	Signals and Systems	3	0	E
EE 231	Data Structures	3	1	E
EE 250	Electric Machinery Fundamentals	3	1	E
HU 201	Technical Writing	2	0	H
HU 202	Pakistan Studies/Islamic Studies	3	0	H
MA 202	Scientific Computing	3	0	M
<b>Subtotal</b>		<b>19</b>		

### Year 3

Semester 5				
Course No	Title	Hrs		Cat
		Th	Lb	
EE 355	Power Transmission & Distribution	3	1	E
EE 371	Microprocessor Systems	3	1	E
EE 380	Electromagnetic Theory	3	0	E
EE	Restricted Elective	3	0	E
MA 320	Applied Probability & Statistics	3	0	M
<b>Subtotal</b>		<b>17</b>		

Semester 6				
Course No	Title	Hrs		Cat
		Th	Lb	
EE 311	Integrated Electronic Circuits	3	1	E
EE 321	Communication Systems	3	1	E
EE 340	Control Systems	3	1	E
BA 300	Entrepreneurship and Small Business Management	2	0	H
EE	Elective I	3	1	E
<b>Subtotal</b>		<b>18</b>		

## Year 4

Semester 7					Semester 8				
Course No	Title	Hrs		Cat	Course No	Title	Hrs		Cat
		Th	Lb				Th	Lb	
EE	Elective II	3	1	E	EE	Elective V	3	1	E
EE	Elective III	3	1	E	EE	Elective VI	3	1	E
EE	Elective IV	3	1	E	EE	Elective VII	3	1	E
EE 499a	Project (Phase-I)	0	3	E	EE 499b	Project (Phase-II)	0	3	E
<b>Subtotal</b>		<b>15</b>			<b>Subtotal</b>		<b>15</b>		

### Restricted Elective

EE 334	Software Engineering or
EE 370	Digital System Design

	Hr	%
Total Hours	140	
Engineering	103	73.6
Math	15	10.7
Science	10	7.1
Humanities/Soc. Sc.	12	8.6
<b>Checksum</b>		<b>100</b>

### Numbering Scheme

First number	Level
Second number	Area
Third number	Sqnce
Areas	
General	0
Electronics	1,9
Communications	2,8
Computer	3,7
Control	4
Power	5,6

### Electives

#### Elective I (6th Semester)

EE 311: Integrated Electronic Circuits (L)	E-Core
EE 330: Operating Systems (L)	C-Core
EE 336: Database Engineering (L)	C-Core
EE 352: Renewable Electrical Energy Systems	P-Core
EE 383: Antenna Systems (L)	E-Core

#### Electives II to IV (7th Semester)

EE 410: Power Electronics (L)	E,P-Core
EE 412: Electronic System Design (L)	E-Core
EE 422: Digital Signal Processing (L)	E-Core C-Opt
EE 432: Computer Networks (L)	C-Core E-Opt
EE 434: Algorithms (L)	C-Core

EE 451: Power System Analysis and Design (L)	P-Core
EE 461: Design of Electrical Machines	P-Core
EE 482: Microwave Engineering - Passive Devices (L)	E-Core
<b>Electives V to VII (8th Semester)</b>	
EE 411: Industrial Control Systems (L)	E,P-Opt
EE 423: Digital Communications (L) - Pre-Requisite: DSP	E-Core C-Opt
EE 424: Satellite Engineering	E-Core
EE 425: Wireless Communications (L) - Pre-Requisite: DSP	E-Core
EE 437: Computer Graphics (L)	C-Core
EE 436: Database Engineering (L)	C-Core
EE 438: Introduction to Artificial Intelligence	C-Core
EE 439: Introduction to Machine Learning	C-Core
EE 450: High Voltage Engineering (L)	P-Core
EE 453: Power System Operation and Control (L) - Pre-Requisite: PSAnD	P-Core
EE 454: Power System Protection (L) - Pre-Requisite: PSAnD	P-Core
EE 455: Power Plant Engineering (L)	P-Opt
EE 475: Computer Architecture (L)	C-Core E-Opt
EE 481: Optical Circuits and Systems	C-Opt
EE 483: Antenna Systems (L)	E-Core
EE 484: Microwave Engineering - Active Devices (L) - Pre-Req: Passive Devices	E-Core
EE 485: Electromagnetic Compatibility	E-Opt