Curriculum for Electrical Engineering Program (PAF-IAST Haripur)
B-2020

Course Code	Course Title	Credit Hours	Knowledge Area	Sub Area
Semester 01 (17CH)				
SS-101	Functional English	2	Humanities and Social Sciences	English
MTH-101	Calculus and Analytical Geometry	3	Natural Sciences	Math
SS-112	Pak Studies	2	Humanities and Social Sciences	Culture
COMP-111	Programming Fundamentals	3	Computing	Computing
COMP-111L	Programming Fundamentals Lab	1	Computing	Computing
SS-111	Islamic Studies	2	Humanities and Social Sciences	Culture
PHY-101	Applied Physics	3	Natural Sciences	Physics
PHY-101L	Applied Physics Lab	1	Natural Sciences	Physics
Semester 02 (17 CH)				
MTH-202	Linear Algebra and Differential Equations	3	Natural Sciences	Math
ECE-111	Linear Circuit Analysis	3	Electrical Engineering Foundation	Foundation
ECE-111L	Linear Circuit Analysis Lab	1	Electrical Engineering Foundation	Foundation
ME-101L	Workshop Practice	1	Electrical Engineering Foundation	Foundation
COMP-112	Object Oriented Programming	3	Computing	Computing
COMP-112L	Object Oriented Programming Lab	1	Computing	Computing
ECE-161	Digital Logic Design	3	Electrical Engineering Foundation	Foundation
ECE-161L	Digital Logic Design Lab	1	Electrical Engineering Foundation	Foundation
ME-102L	Engineering Drawing	1	Electrical Engineering Foundation	Foundation
Semester 03 (17 CH)				
MTH-205	Complex Variables and Transforms	3	Natural Sciences	Math
ECE-211	Electrical Network Analysis	3	Electrical Engineering Foundation	Foundation
ECE-211L	Electrical Network Analysis Lab	1	Electrical Engineering Foundation	Foundation
ECE-212	Electronic Devices and Circuits	3	Electrical Engineering Foundation	Foundation
ECE-212L	Electronic Devices and Circuits Lab	1	Electrical Engineering Foundation	Foundation
COMP-201	Data Structures and Algorithms	3	Computing	Computing
COMP-201L	Data Structures and Algorithms Lab	1	Computing	Computing
SS-102	Communication Skills	2	Humanities and Social Sciences	English
Semester 04 (18 CH)				
ECE-251	Signals and Systems	3	Electrical Engineering Foundation	Foundation
ECE-251L	Signals and Systems Lab	1	Electrical Engineering Foundation	Foundation
SS-203	Technical and Business Writing	3	Humanities and Social Sciences	English
ECE-261	Introduction to Embedded Systems	3	Electrical Engineering Foundation	Foundation
ECE-261L	Introduction to Embedded Systems Lab	1	Electrical Engineering Foundation	Foundation
MTH-231	Probability and Statistics	3	Natural Sciences	Math

ECE-213	Electronic Circuit Design	3	Electrical Engineering Core	Breadth
ECE-213L	Electronic Circuit Design Lab	1	Electrical Engineering Core	Breadth
Semester 05 (18 CH)				
ECE-321	Electrical Machines	3	Electrical Engineering Core	Breadth
ECE-321L	Electrical Machines Lab	1	Electrical Engineering Core	Breadth
ECE-331	Electromagnetic Field Theory	3	Electrical Engineering Core	Breadth
ECE-332	Communication Systems	3	Electrical Engineering Core	Breadth
ECE-332L	Communication Systems Lab	1	Electrical Engineering Core	Breadth
ECE-351	Digital Signal Processing	3	Electrical Engineering Core	Breadth
ECE-351L	Digital Signal Processing Lab	1	Electrical Engineering Core	Breadth
MTH-307	Numerical Computations	2	Natural Sciences	Elective
MTH-307L	Numerical Computations Lab	1	Natural Sciences	Elective
Semester 06 (17 CH)				
ECE-342	Linear Control Systems	3	Electrical Engineering Core	Breadth
ECE-342L	Linear Control Systems Lab	1	Electrical Engineering Core	Breadth
ECE-341	Instrumentation and Measurements	3	Electrical Engineering Core	Breadth
ECE-341L	Instrumentation and Measurements Lab	1	Electrical Engineering Core	Breadth
ME-103	Thermodynamics	3	IDEE	IDEE
MGT-345	Engineering Project Management	3	Management Sciences	Elective
SS-310	Professional Ethics	3	Humanities and Social Sciences	Elective
Semester 07 (17 CH)				
SS-221	Organizational Behavior	3	Humanities and Social Sciences	Elective
ECE-4XX/COMP-4XX	Depth Elective I	3	Electrical Engineering Specialization Based Electives	Depth
ECE-4XXL	Depth Elective I Lab	1	Electrical Engineering Specialization Based Electives	Depth
ECE-4XX	Depth Elective II	3	Electrical Engineering Specialization Based Electives	Depth
ECE-4XXL	Depth Elective II Lab	1	Electrical Engineering Specialization Based Electives	Depth
ECE-4XX	Depth Elective III	3	Electrical Engineering Specialization Based Electives	Depth
ECE-4XXL	Depth Elective III Lab	1	Electrical Engineering Specialization Based Electives	Depth
ECE-498	Final Year Project – I	2	Senior Design Project	Final Year Project-I
Semester 08 (15 CH)				
MGT-262	Entrepreneurship	3	Management Sciences	Elective
SS-331L	Community Services	2	Humanities and Social Sciences	Non Credited mandatory

ECE-4XX	Depth Elective IV	3	Electrical Engineering Specialization Based Electives	Depth
ECE-4XXL	Depth Elective IV Lab	1	Electrical Engineering Specialization Based Electives	Depth
ECE-4XX	Depth Elective V	3	Electrical Engineering Specialization Based Electives	Depth
ECE-4XXL	Depth Elective V Lab	1	Electrical Engineering Specialization Based Electives	Depth
ECE-499	Final Year Project – II	4	Senior Design Project	Final Year Project-II

Total CH: 136
Engineering domain CH: 94 = 69%
Non-Engineering domain CH: 42 = 31%

Elective Courses for Electrical Engineering Program

S.No.	Course code	Subject
1.	ECE-461	Digital Systems Design
2.	ECE-201	Computer Architecture and Organization
3.	ECE-462	Internet of Things
4.	COMP-317	Artificial Intelligence
5.	ECE-411	Power Electronics and Drives
6.	ECE-413	Digital Integrated Circuit Design
7.	ECE-414	Analog Integrated Circuit Design
8.	ECE-431	Digital Communication
9.	ECE-432	Wireless and Mobile Communication
10.	ECE-433	Computer Communication Networks
11.	ECE-421	Power Generation, Transmission and Distribution
12.	ECE-422	Power Distribution and Utilization
13.	ECE-423	Power Generation
14.	ECE-424	Electrical Power Transmission
15.	ECE-425	Power System Analysis
16.	ECE-426	Power System Protection
17.	ECE-412	RF and Microwave Engineering
18.	ECE-434	Antennas and Wave Propagation

Note: Electives shall be offered on students' interest condition to the availability of resources