(Mirpur University of Science & Technology)
Scheme of Studies B.Sc. Electrical Engineering

Scheme of Studies 2024-28 onwards

Program Duration:	**8-14 Semesters (4-7 Academic Years)**
Total number of Credit Hours (CH) inclusive of 6-credit project:	**136**
Final Year Project Credits	**6**
Internship/Practical Training:	**S/U Basis**
Engineering Domain Courses: (Power/ Communication/ Electronics/ Electric Vehicles)	**95 (69.85%)**
Non-Engineering Domain Courses: (Basic Sciences/ Arts/ Humanitites)	**41 (30.14%)**

* Both Theory and Lab must be passed for all Pre-Requsite Courses.

Semester 1

Code	Course Title	Cr. Hrs.	Ct. Hrs.	Pre-req.*
ENG-1103	Functional English	3	3	
MAT-1105	Calculus and Analytical Geometry	3	3	
BEE-1101	Linear Circuit Analysis	3	3	
BEE-1101L	Linear Circuit Analysis Lab	1	3	
ICT-1126	Applications of Information and Communication Technologies	2	2	
ICT-1126L	Applications of Information and Communication Technologies Lab	1	3	
BEE-1102L	Engineering Drawing	1	3	
PHY-1108	Applied Physics	2	2	
PHY-1108L	Applied Physics Lab	1	3	
HQT-1128	Holy Quran with Translation, Tajveed and Tafseer	S/U	1	
CHE-0004	Chemistry^	S/U	3	
CHE-0004L	Chemistry Lab^		3	
Total		**17**	**32**	

Semester 2

Code	Course Title	Cr. Hrs.	Ct. Hrs.	Pre-req.*
MAT-2305	Differential Equations	3	3	
	Natural Science Elective	3	3	
BEE -1201	Computer Programming	3	3	
BEE -1201L	Computer Programming Lab	1	3	
BEE-1202L	Electrical Workshop Practice	1	3	
~~ICP-2329~~ PS 1217	~~Ideology and Constitution of Pakistan~~ Pakistan Studies	2	2	
BEE -1203	Electronic Devices and Circuits	3	3	
BEE -1203L	Electronic Devices and Circuits Lab	1	3	
HQT-1128	Holy Quran with Translation, Tajveed and Tafseer	S/U	1	
Total		**17**	**24**	

Semester 3				
Code	**Course Title**	**Cr. Hrs.**	**Ct. Hrs.**	**Pre-req.***
MAT-2406	Complex Variables and Transforms	3	3	
	Arts and Humanities Elective	2	2	
BEE-2301	Electrical Network Analysis	3	3	BEE-1101, BEE-1101L
BEE-2301L	Electrical Network Analysis Lab	1	3	
BEE-2302	Data Structures and Algorithms	3	3	BEE-1201, BEE-1201L
BEE-2302L	Data Structures and Algorithms Lab	1	3	
BEE-2303	Digital Logic Design	3	3	
BEE-2303L	Digital Logic Design Lab	1	3	
MDE -2303	Occupational Health and Safety	1	1	
HQT-1128	Holy Quran with Translation, Tajveed and Tafseer	S/U	1	
Total		**18**	**25**	
Semester 4				
Code	**Course Title**	**Cr. Hrs.**	**Ct. Hrs.**	**Pre-req.***
	Social Sciences Elective	**2**	**2**	
MAT-1204	Linear Algebra	3	3	
ISL-1212	Islamic Studies/ Ethics	2	2	
BEE-2401	Probability and Statistics for Engineers	3	3	
BEE-2402	Signal and Systems	3	3	
BEE-2402L	Signal and Systems Lab	1	3	
BEE-2403	Electromagnetic Field Theory	3	3	
HQT-1128	Holy Quran with Translation, Tajveed and Tafseer	S/U	1	
Total		**17**	**18**	
Semester 5				
Code	**Course Title**	**Cr. Hrs.**	**Ct. Hrs.**	**Pre-req.***
BEE-3501	Electrical Machines	3	3	
BEE-3501L	Electrical Machines Lab	1	3	
BEE-3502	Microprocessors and Interfacing	3	3	
BEE-3502L	Microprocessors and Interfacing Lab	1	3	
BEE-3503	Communication Systems	3	3	BEE-2402, BEE-2402L
BEE-3503L	Communication Systems Lab	1	3	
CEE-2330	Civics and Community Engagement	2	2	
	Multi-Disciplinary Domain Engineering Elective	3	3	
HQT-1128	Holy Quran with Translation, Tajveed and Tafseer	S/U	1	
Total		**17**	**24**	

Semester 6				
Code	Course Title	Cr. Hrs.	Ct. Hrs.	Pre-req.*
ENG-2407	Expository Writing	3	3	
BEE-3601	Linear Control Systems	3	3	
BEE-3601L	Linear Control Systems Lab	1	3	
BEE-3602	Power Distribution and Utilization	3	3	
BEE-3602L	Power Distribution and Utilization Lab	1	3	
BEE-3603	Artificial Intelligence	3	3	
BEE-3603L	Artificial Intelligence Lab	1	3	
MAN-3511	Project Management	2	2	
HQT-1128	Holy Quran with Translation, Tajveed and Tafseer	S/U	1	
	Total	**17**	**24**	
Semester 7 (Power)				
Code	Course Title	Cr. Hrs.	Ct. Hrs.	Pre-req.*
BEE-4701	Power System Analysis	3	3	
BEE-4701L	Power System Analysis Lab	1	3	
BEE-4702	Power Generation	3	3	
	Depth Elective -III	3	3	
	Depth Elective -III Lab	1	3	
	Depth Elective -IV	3	3	
	Depth Elective -IV Lab	1	3	
BEE-4805	Final Year Project	2	6	
HQT-1128	Holy Quran with Translation, Tajveed and Tafseer	S/U	1	
	Total	**17**	**28**	
Semester 7 (Electronics)				
Code	Course Title	Cr. Hrs.	Ct. Hrs.	Pre-req.*
BEE-4701	Electronic Circuit Design	3	3	
BEE-4701L	Electronic Circuit Design Lab	1	3	
BEE-4702	Power Electronics	3	3	
BEE-4702L	Power Electronics Lab	1	3	
	Depth Elective -III	3	3	
	Depth Elective -III Lab	1	3	
	Depth Elective -IV	3	3	
BEE-4805	Final Year Project	2	6	
HQT-1128	Holy Quran with Translation, Tajveed and Tafseer	S/U	1	
	Total	**17**	**28**	

	Semester 7 (Communication)				
Code	**Course Title**	**Cr. Hrs.**	**Ct. Hrs.**	**Pre-req.***	
BEE-4701	Electronic Circuit Design	3	3	
BEE-4701L	Electronic Circuit Design Lab	1	3	
BEE-4702	Computer Communication Networks	3	3	
BEE-4702L	Computer Communication Networks Lab	1	3	
	Depth Elective -III	3	3	
	Depth Elective -III Lab	1	3	
	Depth Elective -IV	3	3	
BEE-4805	Final Year Project	2	6	
HQT-1128	Holy Quran with Translation, Tajveed and Tafseer	S/U	1	
	Total	**17**	**28**	

	Semester 7 (Electric Vehicles)				
Code	**Course Title**	**Cr. Hrs.**	**Ct. Hrs.**	**Pre-req.***	
BEE-4701	Automotive Engineering	3	3	
BEE-4701L	Automotive Engineering Lab	1	3	
BEE-4702	EV Charging Devices and Technologies	3	3	
BEE-4702L	EV Charging Devices and Technologies Lab	1	3	
	Depth Elective -III	3	3	
	Depth Elective -III Lab	1	3	
	Depth Elective -IV	3	3	
BEE-4805	Final Year Project	2	6	
HQT-1128	Holy Quran with Translation, Tajveed and Tafseer	S/U	1	
	Total	**17**	**28**	

	Semester 8 (Power/ Electronics/ Communication/ Electric Vehicles)				
Code	**Course Title**	**Cr. Hrs.**	**Ct. Hrs.**	**Pre-req.***	
ETR-3608	Entrepreneurship	2	2	
HQT-1128	Holy Quran with Translation, Tajveed and Tafseer	S/U	1	
	Depth Elective-V (Power/ Electronics/ Communication/ EV)	3	3	
	Flexible Engg./ Non-Engg. Elective-II (Power/ Electronics/ Communication/ EV)	3	3	
	Flexible Engg./ Non-Engg. Elective-II Lab (Power/ Electronics/ Communication/ EV)	1	3	
	Flexible Engg./ Non-Engg. Elective-III (Power/ Electronics/ Communication/ EV)	3	3	
BEE-4805	Final Year Project	4	12	
	Total	**16**	**27**	