

LIST OF ELECTIVES
(Fall 2024 and onwards)

List of Arts and Humanities Electives (2+0)			
Code	Course Title	Code	Course Title
	Communication and Presentation Skills		Sociology for Engineers
	Beginners Spanish		Applied Psychology
	Elementary Arabic		Social Psychology
	Elementary French		Critical Thinking
	Elementary Chinese		Human Resource Management
	History		Organizational Behaviour
	Philosophy		Engineering Law
	Professional Ethics		Engineering Economics
	Engineering Management		Marketing Management
	Financial Management		Leadership and Personal Grooming
Proposed Electives for Natural Science (3+0)			
	Course Title		Course Title
	Multivariable Calculus		Applied Chemistry
	Discrete Mathematics		Biology
	Numerical Analysis		
List of Elective Courses (Power)			
Code	Course Title	Pre-req.*	
BEE-48E1	Electrical Power Transmission		
BEE-48E2	Power System Protection		
BEE-48E3	Renewable Energy Systems		
BEE-48E4	Power System Operation and Control		
BEE-48E5	Smart Grid		
BEE-48E6	High Voltage Engineering		
BEE-48E7	Electrical Machine Design and Maintenance		
BEE-48E8	Electrical Power Transmission		
BEE-48E9	FACTS and HVDC Transmission		
BEE-48EA	Power Electronics		
BEE-48EB	Instrumentation and Measurement		
List of Elective Courses (Electronics)			
Code	Course Title	Pre-req.*	
BEE-48E1	VLSI Design		
BEE-48E2	Embedded Systems		
BEE-48E3	Optoelectronics		
BEE-48E4	Medical Robotics		
BEE-48E5	RF and Microwave Engineering	BEE-2403	
BEE-48E6	Biomedical Instrumentation		
BEE-48E7	Wave Propagation and Antennas	BEE-2403	
BEE-48E8	Internet of Things (IoT)		
BEE-48E9	Analogue Integrated Electronics		
BEE-48EA	Digital Signal Processing	BEE-2402, BEE-2402L	
BEE-48EB	FPGA Based Digital Design		
BEE-48EC	Digital Control		
BEE-48EE	Nanotechnology		
BEE-48EF	Micro Electromechanical Systems (MEMS)		
BEE-48EG	Industrial Electronics		
BEE-48EH	Application Specific Integrated Circuits (ASIC) Design		

List of Elective Courses (Communication)		
Code	Course Title	Pre-req.*
BEE-48E1	Wireless and Mobile Communications	
BEE-48E2	Optical Communications	
BEE-48E3	Navigation Systems	
BEE-48E4	Digital Image Processing	
BEE-48E5	Microwave and Radar Systems	BEE-2403
BEE-48E7	Biomedical Instrumentation	
BEE-48E8	Antenna and Wave Propagation	BEE-2403
BEE-48E9	Data Communications	
BEE-48EA	Internet of Things (IoT)	
BEE-48E9	Satellite Communications	
BEE-48EA	Digital Communications	
BEE-48EB	Next Generation Networks	
BEE-48EC	Wireless Network Systems	
BEE-48EE	Telecommunications Standards and Regulations	
BEE-48EF	Network Management	
BEE-48EG	Telecommunications Traffic Engineering	
BEE-48EH	Transmission and Switching Systems	
List of Elective Courses (Electric Vehicles)		
Code	Course Title	Pre-req.*
BEE-48E1	Sensors and Actuators	
BEE-48E2	EV Batteries and Ancillaries	
BEE-48E3	EV Software	
BEE-48E4	EV Control Systems	
BEE-48E5	EV Intergration with Power Grid	
BEE-48E6	Autonomous Vehicles	
BEE-48E7	EV Circuits and Electronics	
BEE-48E8	EV Body and Chassis Design	
BEE-48E9	Vehicular Networking	
BEE-48EA	EV Dynamics	
List of MDEs		
	Course Title	Pre-req.*
	Applied Mechanics	
	Fluid Mechanics	
	Thermodynamics	
	Surveying and Levelling	
	Bio-Mechanics	
	Environmental Engineering	
	Software Engineering	
	Optimization Techniques	
List of Flexible Courses		
	Course Title	
	Pakistan Studies	
	Data Communications	
	Data Analytics and Machine Learning	
	Internet of Things (IoT)	
	Artificial Intelligence for Electrical Engineers	
	Intelligent Control	
	Environment and Sustainability	
	Python for Engineers	
	Energy Informatics	