

Courses Offered at the DEE Jalozai Campus for the intake year 2021, intake year 2022 and intake year 2023 (Power and Communication streams)

Semester	Course No.	Course Title	Knowledge Area	Sub area	Credit Hours (Theory +Practical)	Contact Hours (Theory +Practical)	Total Credit Hours	Pre-requisite courses
Semester I	BSI-122	Calculus	Natural Sciences	Math	3+0	3+0	3	Nil
	BSI-151	Electricity & Magnetism	Natural Sciences	General physics-I	3+1	3+3	4	Nil
	ME-100	Engineering Drawing	Inter-Disciplinary Engineering (IDEE)	-----	0+1	0+3	1	Nil
	EE-121	Computer Fundamentals	Computing	Fundamentals	2+1	2+3	3	Nil
	BSI-101	Islamic Studies	Humanities & Social Sciences	Culture	2+0	2+0	2	Nil
	BSI-120	Professional Ethics	Humanities & Social Sciences	Social science	2+0	2+0	2	Nil

	BSI-110	Pakistan Studies	Humanities & Social Sciences	Culture	2+0	2+0	2	Nil
	Total credit hours				14+3		17	
Semester II	BSI-111	Linear Algebra	Natural Sciences	Math	3+0	3+0	3	Nil
	EE-156	Basic Electrical Engineering	Electrical Engineering Foundation	-----	3+1	3+3	4	Nil
	EE-170	Computer Programming	Computing	Programming	3+1	3+3	4	Computer Fundamentals (EE-121)
	BSI-162	Engineering Mechanics	Natural sciences	General physics -II	3+0	3+0	3	Electricity & Magnetism (BSI-151)
	EE-157	Workshop Technology	Electrical Engineering Foundation	-----	1+1	1+3	2	Nil
	BSI-142	English Composition & Comprehension	Humanities & Social Sciences	English	3+0	3+0	3	Nil
	Total credit hours				16+3		19	
Semester - III	BSI-231	Differential Equations	Natural Sciences	Math	3+0	3+0	3	Nil

	EE-225	Digital Logic Design	Electrical Engineering Foundation		3+1	3+3	4	Nil
	EE-200	Circuit Analysis-I	Electrical Engineering Foundation		3+1	3+3	4	Basic Electrical Engineering (EE-156)
	EE-271	Oop & Data Structures	Computing	Programming & Design	2+1	2+3	3	Computer Programming (EE-170)
	BSI-143	Communication & Presentation Skills	Humanities & Social Sciences	English	3+0	3+0	3	Nil
	Total credit hours				14+3		17	
Semester – IV	EE-202	Probability & Random Variables	Electrical Engineering Foundation		3+0	3+0	3	Nil
	EE-287	Engineering Economics	Management Sciences		3+0	3+0	3	Nil
	EE-201	Circuit Analysis –II	Electrical Engineering Foundation		3+1	3+3	4	Circuit Analysis - I (EE-200)
	BSI-242	Numerical Analysis	Natural Sciences	Math	3+0	3+0	3	Linear Algebra (BSI-111)

	EE-345	Electronic Devices & Circuits	Electrical Engineering Foundation		3+1	3+3	4	Basic Electrical Engineering (EE-156)
	Total credit hours				15+2 =17			
Semester-V	EE-312	Signals & Systems	Electrical Engineering Foundation		3+1	3+3	4	Nil
	EE-363	Electromagnetic Field Theory	Electrical Engineering foundation		3+0	3+0	3	Nil
	EE-497	Electronic Circuits-II	Electrical Engineering Core (Breadth)		3+1	3+3	4	Electronic Devices & Circuits (EE-345)
	EE-440	Electrical Machines	Electrical Engineering Core (Breadth)		3+1	3+3	4	Electricity & Magnetism (BSI-151)
	BSI-362	Complex Variables & Transforms	Natural Sciences	Math	3+0	3+0	3	Differential Equations (BSI-231)
	Total credit hours				15+3		18	
Semester – VI	EE-336	Electrical Measurement &	Electrical Engineering Core (Breadth)		3+1	3+3	4	1- Basic Electrical Engineering (EE-156)

		Instrumentation						2- Workshop Technology (EE-157)
	EE-326	Microprocessor & Microcontroller Bases System Design	Electrical Engineering Foundation		3+1	3+3	4	Digital Logic Design(EE-225)
	ENE-431	Smart grid	Inter-disciplinary Engineering (IDEE)		2+1 (for comm. Stream)	1+3 (for comm. Stream)	3	Nil
	EE-3xx	Smart grid	Elective-I course (for power stream)		3 (for power stream)	3 (for power stream)	3	Nil
	EE-388	Engineering Management	Management Sciences		2+0	2+0	2	Nil
	EE-391	Communication Systems	Major Based Core (breadth)		3+1	3+3	4	Signal and Systems (EE-312)
	Total credit hours (communication stream)				13+4 (for comm. Stream)		17	
	Total credit hours (power stream)				14+3 (for power stream)		17	

	EE-481	Control Systems	Electrical Engineering Core (Breadth)		3+1	3+3	4	Nil
Semester – VII	EE-478A	Project	Senior Design Project		0+3	0+9	3	Nil
	Communication stream							
	EE-496	Computer Communication Networks	Major Based Core (Depth)		3+1	3+3	4	Nil
	EE-413	Elective-I Digital Signal Processing	Major Based Core (Depth)		3+1	3+3	4	Signal and Systems (EE-312)
	EE-286	Technical Report Writing	Humanities & Social Sciences	English	3+0	3+0	3	Nil
	Total credit hours				12+6		18	
	Power stream							
	CE230	Hydraulics and Hydraulics Machinery	Inter-disciplinary Engineering (IDEE)		3+0	3+0	3	Nil
	EE-4xx	Elective-II			3+0	3+0	3	Nil
	EE-4xx	Elective-III			3+1	3+3	4	
	Total credit hours				12+5		17	

Semester- VIII	Communication stream							
	EE- 393	Elective-II Digital Communicatio n	Major Based Core (Depth)		3+1	3+3	4	Signal and Systems (EE-312)
	EE-425	Elective-IV Introduction to Machine Learning			3+1	3+3	4	Nil
	EE-494	Wireless Communicatio n	Major Based Core (Depth)		3+0	3+0	3	Nil
	EE-478B	Project	Senior Design Project		0+3	0+9	3	Nil
	Total credit hours				9+4		13	
	Power stream							
	EE-4xx	Elective-IV	Major Based Core (Depth)		3+1	3+3	4	Nil
	EE-4xx	Elective-V	Major Based Core (Depth)		3+1	3+3	4	Nil
	EE-4xx	Power transmission and distribution	Major Based Core (Depth)		3+0	3+0	3	Nil
	EE-478B	Project	Senior Design		0+3	0+9	3	Nil

		Project					
	Total credit hours			9+5		14	

Courses Offered at the DEE Jalozai Campus for the intake year 2024 and onwards (Power, Communication, and Computing & AI streams)

Semester	Course No.	Course Title	Knowledge Area	Sub area	Credit Hours (Theory +Practical)	Contact Hours (Theory +Practical)	Total Credit Hours	Pre-requisite courses
Semester I	BSI-122	Calculus	Natural Sciences	Math	3+0	3+0	3	Nil
	BSI-151	Electricity & Magnetism	Natural Sciences	General physics-I	3+1	3+3	4	Nil
	ME-100	Engineering Drawing	Inter-Disciplinary Engineering (IDEE)	-----	0+1	0+3	1	Nil
	EE-121	Computer Fundamentals	Computing	Fundamentals	2+1	2+3	3	Nil

	BSI-101	Islamic Studies	Humanities & Social Sciences	Culture	2+0	2+0	2	Nil
	BSI-120	Professional Ethics	Humanities & Social Sciences	Social science	2+0	2+0	2	Nil
	BSI-110	Pakistan Studies	Humanities & Social Sciences	Culture	2+0	2+0	2	Nil
	Total credit hours				14+3		17	
Semester II	BSI-111	Linear Algebra	Natural Sciences	Math	3+0	3+0	3	Nil
	EE-156	Basic Electrical Engineering	Electrical Engineering Foundation	-----	3+1	3+3	4	Nil
	EE-170	Computer Programming	Computing	Programm ing	3+1	3+3	4	Computer Fundamenta l (EE-121)
	BSI-162	Engineering Mechanics	Natural sciences	General physics -II	3+0	3+0	3	Electricity & Magnetism (BSI-151)
	EE-157	Workshop Technology	Electrical Engineering Foundation	-----	0+1	1+3	2	Nil
	BSI-142	English Composition & Comprehensio n	Humanities & Social Sciences	English	3+0	3+0	3	Nil
	Total credit hours				15+3		18	

Semester - III	BSI-231	Differential Equations	Natural Sciences	Math	3+0	3+0	3	Nil
	EE-225	Digital Logic Design	Electrical Engineering Foundation		3+1	3+3	4	Nil
	EE-200	Circuit Analysis-I	Electrical Engineering Foundation		3+1	3+3	4	Basic Electrical Engineering (EE-156)
		Civics and community engagement			2+0	2+0	2	Nil
	EE287	Engineering Economy			2+0	2+0	2	Nil
	EE251 (for Comp.&AI stream)	Introduction to AI programming			2+1	2+3	3	Nil
	Total credit hours (for power and Comm. Streams)				13+2		15	
	Total credit hours (for Comp. & AI stream)				15+3		18	
Semester – IV	EE-202	Probability & Random Variables	Electrical Engineering Foundation		3+0	3+0	3	Nil
	EE-326	Microprocessor & Microcontroller	Electrical Engineering Foundation		3+1	3+3	4	Digital Logic Design(EE-225)

		Bases System Design						
	EE-201	Circuit Analysis –II	Electrical Engineering Foundation		3+1	3+3	4	Circuit Analysis - I (EE-200)
	BSI-242	Numerical Analysis	Natural Sciences	Math	3+0	3+0	3	Linear Algebra (BSI-111)
	EE-345	Electronic Devices & Circuits	Electrical Engineering Foundation		3+1	3+3	4	Basic Electrical Engineering (EE-156)
	Total credit hours				15+3 =18			
Semester-V	EE-312	Signals & Systems	Electrical Engineering Foundation		3+1	3+3	4	Nil
	EE-363	Electromagnetic Field Theory	Electrical Engineering foundation		3+0	3+0	3	Nil
	BSI-362	Complex Variables & Transforms	Natural Sciences	Math	3+0	3+0	3	Differential Equations (BSI-231)
	Communication stream							

	EE-497	Electronic Circuits-II	Electrical Engineering Core (Breadth)		3+1	3+3	4	Electronic Devices & Circuits (EE-345)
	EE271	OOPs and Data structure			2+1	2+3	3	
	Total credit hours (Communication stream)				14+3		17	
	Power stream							
	EE-497	Electronic Circuits-II	Electrical Engineering Core (Breadth)		3+1	3+3	4	Electronic Devices & Circuits (EE-345)
	ME211	Applied Thermodynamics	IDEE		3+0	3+0	3	
	Total credit hours (Power stream)				15+2		17	
	Computing & AI stream							
	EE3xx	Elective-1			3+1	3+3	4	
	EE351	Operating systems			3+1	3+3	4	
	Total credit hours				15+3		18	
Semester – VI	EE-336	Electrical Measurement & Instrumentation	Electrical Engineering Core (Breadth)		3+1	3+3	4	1- Basic Electrical Engineering (EE-156)

								2- Workshop Technology (EE-157)
	EE-286	Technical Report Writing	Humanities & Social Sciences	English	3+0	3+0	3	Nil
	ENE-431	Smart grid	Inter-disciplinary Engineering (IDEE)		2+1 (for comm. And Comp.&AI Streams)	1+3 (for comm. Stream)	3	Nil
	EE-3xx	Smart grid	Elective-I course (for power stream)		3 (for power stream)	3 (for power stream)	3	Nil
	EE-391	Communication Systems	Major Based Core (breadth)		3+1	3+3	4	Signal and Systems (EE-312)
	EE3xx	Elective I (Power generation) **For power stream	Major Based Core (breadth)		3+0	3+0	3	
	Total credit hours (communication and Comp.&AI streams)				11+3 (for comm. Stream)		14	
	Total credit hours (power stream)				15+2 (for power stream)		17	
	EE-xxx	Entrepreneurship			2+0	2+0	2	

Semester – VII	EE-440	Electrical Machines	Electrical Engineering Core (Breadth)		3+1	3+3	4	Electricity & Magnetism (BSI-151)
	Communication stream							
	EE-496	Computer Communication Networks	Major Based Core (Depth)		3+1	3+3	4	Nil
	EE- 413	Elective-I Digital Signal Processing	Major Based Core (Depth)		3+1	3+3	4	Signal and Systems (EE-312)
	EE- 393	Elective-II Digital Communication	Major Based Core (Depth)		3+1	3+3	4	Signal and Systems (EE-312)
	Total credit hours				14+4		18	
	Power stream							
	CE230	Hydraulics and Hydraulics Machinery	Inter-disciplinary Engineering (IDEE)		3+0	3+0	3	Nil
	EE-4xx	Elective-II (High voltage engineering)	Major Based Core (Depth)		3+1	3+3	4	Nil

	EE-4xx	Elective-III (power system Analysis)	Major Based Core (Depth)		3+1	3+3	4	
	Total credit hours				14+3		17	
	Computing & AI stream							
	EE-496	Computer Comm. Networks	Major Based Core (Depth)		3+1	3+3	4	Nil
	EE413	Elective II			3+1	3+3	4	
	EE393	Elective III			3+0	3+0	3	
	Total credit hours				14+3		17	
Semester- VIII	Communication stream							
	EE-481	Control Systems	Electrical Engg. Core (Breadth)		3+1	3+3	4	Nil
	EE4xx	Elective III (wireless Comm.)	Major Based Core (Depth)		3+0	3+0	3	
	EE-425	Elective-IV Introduction to Machine Learning			3+1	3+3	4	Nil
	EE-478B	Project	Senior Design Project		0+6	0+9	6	Nil

	EE-388	Engineering Management			2+0	2+0	2	Nil
	Total credit hours				11+8		19	
	Computing & AI							
	EE-481	Control Systems	Electrical Engineering Core (Breadth)		3+1	3+3	4	Nil
	EE-388	Engineering Management			2+0	2+0	2	Nil
	EE-425	Elective IV			3+0	3+0	3	Nil
	EE-478B	Project	Senior Design Project		0+6	0+18	6	Nil
	Total credit hours				8+7		15	
	Power stream							
	EE-481	Control Systems	Electrical Engineering Core (Breadth)		3+1	3+3	4	Nil
	EE-4xx	Elective IV Power transmission & distribution	Major Based Core (Depth)		3+0	3+0	3	Nil
	EE-388	Engineering Management			2+0	2+0	2	Nil

	EE-4xx	Elective-V (power system protection)	Major Based Core (Depth)		3+0	3+0	3	Nil
	EE-478B	Project	Senior Design Project		0+6	0+18	6	Nil
	Total credit hours				11+7		18	