

Course Offerings

NOTE: Attach the listing of Course-Contents for ALL courses

COURSE SCHEMA OF BACHELOR OF ENGINEERING IN COMPUTER SYSTEMS- FALL-2024

SEMESTER-I	S.NO	COURSE CODE	SUBJECT	Knowledge Area	PRE-REQ	CREDIT HOURS
	1	MTS-111	Calculus and Analytical Geometry	Natural Science	-----	3 (3+0)
	2	HUM-112	Pakistan Studies	Humanities	-----	2 (2+0)
	3	CSE-111	Information and Communication Technologies	CSE Foundation	-----	3 (2+1)
	4	CSE-112	Computer Programming	CSE Foundation	-----	4 (3+1)
	5	HUM-111	Functional English	Humanities	-----	2 (2+0)
	6	CSE-113	Computer Engineering Workshop	CSE Foundation	-----	1 (0+1)
	TOTAL CREDIT HOURS					15 (12+3)

SEMESTER-II	S.NO	COURSE CODE	SUBJECT	Knowledge Area	PRE-REQ	CREDIT HOURS
	1	MTS-121	Linear Algebra	Natural Science	-----	2 (2+0)
	2	CSE-121	Object Oriented Programming	CSE Foundation	-----	4 (3+1)
	3	PHY-121	Applied Physics	Natural Science	-----	4 (3+1)
	4	ESE-121	Electronic Devices and Circuits	ESE Foundation	-----	4 (3+1)
	5	HUM-121	Communication and Presentation Skills	Humanities	-----	2 (2+0)
	6	HUM-122/123	Islamic Studies/ Ethics	Humanities	-----	2 (2+0)
	TOTAL CREDIT HOURS					18(15+3)

SE	S.NO	COURSE CODE	SUBJECT	Knowledge Area	PRE-REQ	CREDIT HOURS
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	1	ESE-211	Digital Logic Design	ESE Foundation	-----	4 (3+1)
	2	CSE-211	Data Structures and Algorithms	CSE Foundation	CSE-112	4 (3+1)
	3	ELE-211	Circuit Analysis	ELE Foundation	PHY-121	4 (3+1)
	4	MTS-212	Discrete Structures	Natural Science	-----	2 (2+0)
	5	MTS-211	Differential Equations	Natural Science	MTS-111	3 (3+0)
	6	CSE-212	Computer Aided Design	CSE Foundation	-----	1 (0+1)
	TOTAL CREDIT HOURS					18 (14+4)

SEMESTER-IV	S.NO	COURSE CODE	SUBJECT	Knowledge Area	PRE-REQ	CREDIT HOURS
	1	MTS-221	Complex Variables & Transforms	Natural Science	MTS-111	3 (3+0)
	2	CSE- 221	Database Management System	CSE Breadth	-----	4 (3+1)
	3	CSE-222	Operating Systems	CSE Breadth	-----	4 (3+1)
	4	CSE-223	Computer Architecture and Organization	CSE Foundation	-----	4 (3+1)
	5	MGT-221	Digital Marketing	Management Science	-----	2 (2+0)
	TOTAL CREDIT HOURS					17 (14+3)

SEMESTER-V	S.NO	COURSE CODE	SUBJECT	Knowledge Area	PRE-REQ	CREDIT HOURS
	1	ESE-311	Signals and Systems	ESE Foundation	-----	4 (3+1)
	2	MTS-311	Probability and Statistics	Natural Science	-----	3 (3+0)
	3	CSE-311	Computer Communication Networks	CSE Breadth	-----	4 (3+1)
	4	CSE-312	CEDE-I (Web Engineering)	CSE Depth	-----	4 (3+1)
	5	CSE- 313	Software Engineering	CSE Breadth	-----	3 (3+0)
	TOTAL CREDIT HOURS					18 (15+3)

SEMESTER-VI	S.NO	COURSE CODE	SUBJECT	Knowledge Area	PRE-REQ	CREDIT HOURS
	1	CSE- 321	Embedded Systems	CSE Breadth	ESE-211	4 (3+1)
	2	MCH-321	Health, Safety and Environment	MDEE	-----	1 (1+0)
	3	CSE-322	MDEE-I (Enterprise Application Development)	MDEE	-----	4 (3+1)
	4	MGT- 321	Professional Ethics	Social Science	-----	2 (2+0)
	5	CSE-323	Artificial Intelligence	CSE Breadth	-----	4 (3+1)
	TOTAL CREDIT HOURS					15 (12+3)

SEMESTER-VII	S.NO	COURSE CODE	SUBJECT	Knowledge Area	PRE-REQ	CREDIT HOURS
	1	CSE-411	Digital System Design	CSE Breadth	-----	4 (3+1)

	2	CSE-412	CEDE-II (Machine Learning)	CSE Depth	-----	4 (3+1)
	3	ESE-411	CEDE-III (Robotics and Automation)	CSE Depth	-----	4 (3+1)
	4	HUM-411	Technical Report Writing	Humanities	-----	2 (2+0)
	5	CSE-419	Final Year Project –I	-----	-----	3 (0+3)
	TOTAL CREDIT HOURS					17(11+6)

SEMESTER-VIII	S.NO	COURSE CODE	SUBJECT	Knowledge Area	PRE-REQ	CREDIT HOURS
	1	MGT-421	Engineering Entrepreneurship	Management Science	-----	2 (2+0)
	2	CSE-421	MDEE-II(Mobile Application Development)	MDEE	-----	4 (3+1)
	3	CSE-422	CEDE-IV (Cyber Security)	CSE Depth	-----	4 (3+1)
	4	CSE-429	Final Year Project –II	----	-----	3 (0+3)
	TOTAL CREDIT HOURS					13 (8+5)
GRAND TOTAL CREDIT HOURS				131		

List of Electives for BE Computer Systems

Computer Systems Engineering Depth Electives (CEDE)

Computer Systems Engineering Depth Electives (CEDE)	S.NO	COURSE CODE	SUBJECT	Knowledge Area	CREDIT HOURS
	1	CSE-XXX	Cloud and Distributed Computing	CSE Depth	3(3+x)
	2	CSE-XXX	Internet of Things	CSE Depth	3(3+x)
	3	CSE-XXX	Machine Learning	CSE Depth	3(3+x)
	4	CSE-XXX	Digital Image Processing	CSE Depth	3(3+x)
	5	CSE-XXX	System and Network Security	CSE Depth	3(3+x)
	6	CSE-XXX	Systems Programming	CSE Depth	3(3+x)
	7	CSE-XXX	High Performance Computing	CSE Depth	3(3+x)
	8	CSE-XXX	Control Engineering	CSE Depth	3(3+x)
	9	CSE-XXX	Algorithm Design and Analysis	CSE Depth	3(3+x)
	10	CSE-XXX	Hardware Design for DSP and ML	CSE Depth	3(3+x)
	11	CSE-XXX	Microprocessor and Interfacing	CSE Depth	3(3+x)
	12	CSE-XXX	Digital Signal Processing	CSE Depth	3(3+x)
	13	CSE-XXX	Web Engineering	CSE Depth	3(3+x)
	14	CSE-XXX	Numerical Analysis	CSE Depth	3(3+x)
	15	CSE-XXX	Cyber Security	CSE Depth	3(3+x)
	16	CSE-XXX	Robotics and Automation	CSE Depth	3(3+x)

Multi-Disciplinary Engineering Electives (MDEE)

Multi-Disciplinary Engineering Electives (MDEE)	S.NO	COURSE CODE	SUBJECT	Knowledge Area	CREDIT HOURS
	1	XXX-XXX	Human Computer Interaction (UI/UX)	Software Engineering	3(3+x)
	2	XXX-XXX	Block Chain Technologies and Applications	Software Engineering	3(3+x)
	3	XXX-XXX	Neural Networks and Fuzzy Logic	Software Engineering	3(3+x)
	4	XXX-XXX	Mobile Application Development	Software Engineering	3(3+x)
	5	XXX-XXX	Virtual Reality	Software Engineering	3(3+x)
	6	XXX-XXX	Software Quality Assurance	Software Engineering	3(3+x)
	7	XXX-XXX	Instrumentation and Controls	Electrical Engineering	3(3+x)
	8	XXX-XXX	VLSI System Design	Electronics Engineering	3(3+x)
	9	XXX-XXX	Data Warehousing and Big Data	Software Engineering	3(3+x)
	10	XXX-XXX	Applied Thermodynamics	Mechanical Engineering	3(3+x)
	11	XXX-XXX	GIS and Remote Sensing	Software Engineering	3(3+x)
	12	XXX-XXX	Biomedical Engineering	Biomedical Engineering	3(3+x)
	13	XXX-XXX	Business Process Re-engineering	Engineering Management	3(3+x)
	14	XXX-XXX	Nanotechnology	Electronics Engineering	3(3+x)
	15	XXX-XXX	Enterprise Application Development	Software Engineering	3(3+x)