

## B.E Computer Systems Engineering Course Schema

### COURSE SCHEMA OF BE COMPUTER SYSEMS ENGINEERING

(FALL-2020)

<b>SEMESTER-I</b>	<b>S.NO</b>	<b>COURSE CODE</b>	<b>SUBJECT</b>	<b>Knowledge Area</b>	<b>PRE-REQ</b>	<b>CREDIT HOURS</b>
	1	CSE-111	Computing Fundamentals	CSE Foundation	-----	3 (2+1)
	2	CSE-112	Introduction to Programming	CSE Foundation	-----	4 (3+1)
	3	HUM-111	Functional English	Humanities	-----	3 (3+0)
	4	HUM-112	Pakistan Studies	Humanities	-----	2 (2+0)
	5	MTS-111	Calculus and Analytical Geometry	Natural Science	-----	3 (3+0)
	6	ELE-111	Workshop Practice	ELE Foundation	-----	1 (0+1)
	<b>TOTAL CREDIT HOURS</b>					

<b>SEMESTER-II</b>	<b>S.NO</b>	<b>COURSE CODE</b>	<b>SUBJECT</b>	<b>Knowledge Area</b>	<b>PRE-REQ</b>	<b>CREDIT HOURS</b>
	1	CSE-121	Object Oriented Programming	CSE Foundation	CSE-112	4 (3+1)
	2	MTS-121	Discrete Mathematics	Natural Science	-----	3 (3+0)
	3	HUM-122/3	Islamic Studies/ Ethics	Humanities	-----	2 (2+0)
	4	ELE-121	Fundamentals of Electrical & Electronics Engineering	ELE/ESE Foundation	-----	4 (3+1)
	5	PHY-121	Applied Physics	Natural Science	-----	4 (3+1)
	6	CSE-122	Computer Aided Design	CSE Foundation	-----	1 (0+1)
	<b>TOTAL CREDIT HOURS</b>					

<b>SEMESTER-III</b>	<b>S.NO</b>	<b>COURSE CODE</b>	<b>SUBJECT</b>	<b>Knowledge Area</b>	<b>PRE-REQ</b>	<b>CREDIT HOURS</b>
	1	MTS-211	Complex Variables & Transforms	Natural Science	MTS-111	3 (3+0)
	2	CSE-211	Data Structures and Algorithms	CSE Foundation	CSE-121	4 (3+1)

	3	ELE-211	Circuit Analysis	ELE Foundation	PHY-121	4 (3+1)
	4	ESE-211	Digital Logic Design	ESE Foundation	-----	4 (3+1)
	5	HUM-211	Communication and Presentation Skills	Humanities	-----	3 (3+0)
<b>TOTAL CREDIT HOURS</b>						<b>18(15+3)</b>

<b>SEMESTER-IV</b>	<b>S.NO</b>	<b>COURSE CODE</b>	<b>SUBJECT</b>	<b>Knowledge Area</b>	<b>PRE-REQ</b>	<b>CREDIT HOURS</b>
	1	MTS-221	Linear Algebra & Differential Equations	Natural Science	MTS-111	3 (3+0)
	2	CSE-221	Computer Architecture & Organization	CSE Foundation	ESE-211	4 (3+1)
	3	ESE-221	Signals and Systems	ESE Foundation	ELE-121 or ELE-211	4 (3+1)
	4	CSE-222	Operating Systems	CSE Foundation	CSE-211	4 (3+1)
	5	HUM-221	Technical Writing	Humanities	-----	3 (3+0)
	<b>TOTAL CREDIT HOURS</b>					

<b>SEMESTER-V</b>	<b>S.NO</b>	<b>COURSE CODE</b>	<b>SUBJECT</b>	<b>Knowledge Area</b>	<b>PRE-REQ</b>	<b>CREDIT HOURS</b>
	1	MTS-311	Probability & Statistics	Natural Science	MTS-221	3 (3+0)
	2	CSE-311	Database Management System	CSE Breadth	CSE-211	4 (3+1)
	3	CSE-312	Computer Communication and Networks	CSE Breadth	-----	4 (3+1)
	4	CSE-313	Artificial Intelligence	CSE Breadth	CSE-211	4 (3+1)
	5	HUM-311	Organizational Behavior	Humanities	-----	3 (3+0)
<b>TOTAL CREDIT HOURS</b>						<b>18 (15+3)</b>

<b>SEME</b>	<b>S.NO</b>	<b>COURSE CODE</b>	<b>SUBJECT</b>	<b>Knowledge Area</b>	<b>PRE-REQ</b>	<b>CREDIT HOURS</b>
	1	MTS-321	Numerical Methods	Natural Science	-----	3 (3+0)

	2	CSE- 321	Microprocessor and Microcontroller	CSE Breadth	CSE-221	4 (3+1)
	3	CSE-322	Software Engineering	CSE Breadth	-----	4 (3+1)
	4	XXX-XXX	IDEE-I	IDEE-I	-----	3 (3+0)
	5	MGT-321	Engineering Economics & Management	Management Science	-----	3 (3+0)
	<b>TOTAL CREDIT HOURS</b>					<b>17 (15+2)</b>

<b>SEMESTER-VII</b>	<b>S.NO</b>	<b>COURSE CODE</b>	<b>SUBJECT</b>	<b>Knowledge Area</b>	<b>PRE-REQ</b>	<b>CREDIT HOURS</b>
	1	CSE-XXX	Elective-I	Elective (CSE-Depth)-I	-----	3 (3+x)
	2	CSE-XXX	Elective-II	Elective (CSE-Depth)-II	-----	3 (3+x)
	3	XXX-XXX	IDEE-II	IDEE-II	-----	3 (3+0)
	4	MGT-411	Entrepreneurship Development & Project Management	Management Science	-----	3 (3+0)
	5	CSE-419	Final Year Project-I	FYP	-----	3 (0+3)
	<b>TOTAL CREDIT HOURS</b>					<b>15(12+3)</b>

<b>SEMESTER-VIII</b>	<b>S.NO</b>	<b>COURSE CODE</b>	<b>SUBJECT</b>	<b>Knowledge Area</b>	<b>PRE-REQ</b>	<b>CREDIT HOURS</b>
	1	CSE-XXX	Elective-III	Elective (CSE-Depth)-III	-----	3(3+x)
	2	CSE-XXX	Elective-IV	Elective (CSE-Depth)-IV	-----	3(3+x)
	3	CSE-XXX	Elective-V	Elective (CSE-Depth)-V	-----	3(3+x)
	4	CSE-429	Final Year Project-II	FYP	-----	3 (0+3)
		<b>TOTAL CREDIT HOURS</b>				
	<b>GRAND TOTAL CREDIT HOURS</b>					<b>132 (108+24)</b>

IDEE (Inter-Disciplinary Engineering Electives)	S.NO	COURSE CODE	SUBJECT	Knowledge Area	PRE-REQ	CREDIT HOURS
	1	XXX-XXX	Health Safety and Environment	Environmental Engineering	-----	3(3+0)
	2	XXX-XXX	Energy Storage Devices	Energy Engineering	-----	3(3+0)
	3	XXX-XXX	Precision Agriculture	Agriculture Engineering	-----	3(3+0)
	4	XXX-XXX	Smart Grids	Power Engineering	-----	3(3+0)

ELECTIVES	S.NO	COURSE CODE	SUBJECT	Knowledge Area	PRE-REQ	CREDIT HOURS
	1	CSE-XXX	Digital Signal Processing	CSE Depth	ESE-221	4(3+1)
	2	CSE-XXX	Control System and Robotics	CSE Depth	ESE-221	4(3+1)
	3	CSE-XXX	Digital Image Processing	CSE Depth	Digital Signal Processing	4(3+1)
	4	CSE-XXX	Cloud Computing	CSE Depth	CSE-311	4 (3+1)
	5	CSE-XXX	Internet of Things	CSE Depth	CSE-312	4(3+1)
	6	CSE-XXX	Machine Learning	CSE Depth	CSE-211, MTS-311	4(3+1)
	7	CSE-XXX	Fuzzy Logic and Neural Networks	CSE Depth	Artificial Intelligence	4(3+1)
	8	CSE-XXX	Computer Vision	CSE Depth	CSE-112 MTS-221	4(3+1)
	9	CSE-XXX	Block chain	CSE Depth	CSE-211 CSE-311	4(3+1)

	10	CSE-XXX	Cyber Security	CSE Depth	CSE-312	4(3+1)
	11	CSE-XXX	Human Computer Interactions	CSE Depth	CSE-112	3(3+0)
	12	CSE-XXX	Web Engineering	CSE Depth	CSE-311 CSE-121	4(3+1)
	13	CSE-XXX	Data Warehousing and Data Mining	CSE Depth	CSE-311	4(3+1)
	14	CSE-XXX	Digital System Design	CSE Depth	CSE- 321	4(3+1)
	15	CSE-XXX	VLSI	CSE Depth	-----	4(3+1)
	16	CSE-XXX	Biomedical Engineering	CSE Depth	-----	3(3+0)