

**Department of Computer Science**  
**BS (Computer Science) Scheme of Study (Revised)**  
**Effective From 2021 Semester**

**(For eighth batch of BSCS admitted students and onward future new batches)**

<b>Semester 1</b>		<b>Semester 2</b>	
EN-101: English – 1	3	EN-102: English – 2	3
PS-101: Pakistan Studies	2	IS-101: Islamic Studies	2
MA-101: Calculus & Analytical Geometry-I	3	MA-102: Calculus & Analytical Geometry-II	3
PH-111: Introductory Mechanics & Waves	2	PH-112: Electricity, Magnetism and Thermal Physics	2
PH-193: Introductory Mechanics & Waves Lab.	1	PH-194: Electricity, Magnetism and Thermal Physics Lab.	1
CS-101: Introduction to Computing	3	MA 203: Discrete Mathematics	3
CS-105: Problem Solving and Programming	3 (2, 1)	CS-121: Object Oriented Programming	4 (3, 1)
<b>Total Credits</b>	<b>17</b>	<b>Total Credits</b>	<b>18</b>
<b>Semester 3</b>		<b>Semester 4</b>	
CS 103: Introduction to Computer Organization	3	CH-100: General Chemistry	2
EN-201: English - 3	3	CH-190: General Chemistry Lab.	1
PY-101: Introduction to Psychology	3	MA-205: Differential Equations & Linear Algebra	3
CS-211: Data Structures	3	CS-222: Analysis & Design for Software Systems	3
CS-291: Data Structures Lab.	1	CS-225: Database System	3
CS-212: Human Computer Interaction	3	CS-213: Computer Organization & Assembly Language	3
		CS-293: Computer Organization & Assembly Language Lab.	1
<b>Total Credits</b>	<b>16</b>	<b>Total Credits</b>	<b>16</b>
<b>Semester 5</b>		<b>Semester 6</b>	
ST-101: Probability & Statistics	3	EC-201: Economics	3
BY:201: Introductory Biology	3	CS-331: Theory of Automata	3
CS-223: Operating Systems	3	CS-312: Computer Communications & Networks	3
CS-311: Analysis & Design of Algorithms	3	CS-423: Computer Graphics	3
CS-322: Software Construction	3(2, 1)	Elective Course-1 from CS Electives offered	3
CS-414: Artificial Intelligence	3		
<b>Total Credits</b>	<b>18</b>	<b>Total Credits</b>	<b>15</b>
<b>Semester 7</b>		<b>Semester 8</b>	
CS-489: Project-I	3	CS-490: Project-II	3
CS-332: Net Centric Programming	3	CS-413: Introduction to Information Security	3
CS-411: Compiler Construction	3	CS-449: ICT and Society	3
Elective Course-2 from CS Electives offered	3	Elective Course-4 from CS Electives offered	3
Elective Course-3 from CS Electives offered	3	Elective Course-5 from CS Electives offered	3
<b>Total Credits</b>	<b>15</b>	<b>Total Credits</b>	<b>15</b>

**BS(Computer Science) Elective Courses**

CS-324: Web Application Development	3 (2, 1)	CS-471: Theory of Programming	3
CS-442: Mobile Application Development	3 (2,1)	CS-472: Information Interfaces	3 (2,1)
CS-443: Network Architecture	3	CS-473: Multimedia Applications & Design	3
CS-444: Knowledge Based Systems	3	CS-474: Software Testing Techniques	3
CS-445: Information Systems	3	CS-475: Emerging Trends in Software Development	3
CS-446: Introduction to Multimedia Communication	3	CS-476: Enterprise Information Infrastructure	3
CS-448: Network Management	3	CS-478: Web Technologies	3
CS-451: Introduction to Social Computing	3	CS-480: Selected Topics in CS	3
CS-452: Introduction to Game Development	3 (2,1)	CS-482: Web Engineering	3
CS-454: Introduction to Semantic Web	3	CS-483: Software Quality Assurance	3
CS-455: Introduction to Natural Language Processing	3	CS-484: Software Engineering	3
CS-456: Introduction to Web Services	3 (2, 1)	CS-486: Software Project Management	3
CS-457: Web Application Frameworks	3 (2,1)	CS-487: Formal Methods for Software Engineering	3
CS-458: Introduction to Data Mining	3	CS-488: Software Entrepreneurship	3
CS-459: Introduction to Machine Learning	3	CS-491: Real Time Systems	3
CS-462: Introduction to Cyber Security	3	CS-497: Computing Case Studies	
CS-464: Modeling & Simulation	3		