

**BS(SE) Program Road Map Batch 19 (F2020)**

**Total courses: 44    Total Credit Hours:132**

1 <sup>st</sup> Semester				2 <sup>nd</sup> Semester			
Course Code	Course Title	Cr. Hrs.	Pre-req	Course Code	Course Title	Cr. Hrs.	Pre-req
IT1091	Introduction to Info & Comm. Technologies	2		CC1022	Object Oriented Programming	3	CC1021, CC1021L
IT1091L	Introduction to Info & Comm. Technologies Lab	1		CC1022L	Object Oriented Programming Lab	1	CC1021, CC1021L
NS125	Applied Physics	2		CC1041	Discrete Structures	3	
NS125L	Applied Physics Lab	1		EN125	Composition & Communication	3	EN111
MA100	Calculus and Analytical Geometry	3			Supporting Elective-I (e.g., SE1105-Business Process Engineering)	3	
EN111	English Grammar & Comprehension	3			GE/University Elective-I	3	
CC1021	Programming Fundamentals	3					
CC1021L	Programming Fundamentals Lab	1					
	<b>Semester Credit Hours</b>	<b>16</b>			<b>Semester Credit Hours</b>	<b>16</b>	

3 <sup>rd</sup> Semester				4 <sup>th</sup> Semester			
Course Code	Course Title	Cr. Hrs.	Pre-req	Course Code	Course Title	Cr. Hrs.	Pre-req
CC2042	Data Structures and Algorithms	3	CC1022, CC1022L	CC2141	Database Systems	3	CC2042, CC2042L
CC2042L	Data Structures and Algorithms Lab	1	CC1022, CC1022L	CC2141L	Database Systems Lab	1	CC2042, CC2042L
MA210	Linear Algebra	3			Supporting Elective-II(e.g., IT4052-OperationResearch)	3	
CC2101	Software Engineering	3		MA150	Probability and Statistics	3	
	GE/University Elective II	3		SE2102	Software Requirement Engineering (SRE)	3	CC2101
	GE/University Elective III	3			GE/University Elective IV	3	
POL101	Pakistan Studies	3					
	<b>Semester Credit Hours</b>	<b>19</b>			<b>Semester Credit Hours</b>	<b>16</b>	

5 <sup>th</sup> Semester				6 <sup>th</sup> Semester			
Course Code	Course Title	Cr. Hrs.	Pre-req	Course Code	Course Title	Cr. Hrs.	Pre-req
SE3103	Software Design and Architecture	3	SE2102	SE3111	Software Construction and Development	2	SE3103
CC3011	Operating Systems	3	CC2042, CC2042L	SE3111L	Software Construction and Development Lab	1	SE3103
CC3011L	Operating Systems Lab	1	CC2042, CC2042L	SE3162	Web Engineering	3	
	SE Elective I	3		CC3071	Computer Networks	3	
	SE Elective II	3		CC3071L	Computer Networks Lab	1	
	Supporting Elective III (e.g., SE3104-Formal Methods in Software Engineering)	3		CC3121	Information Security	3	
ISL101	Islamic Studies	3		SD100	English Immersion 1	0	
					SE Elective III	3	
	<b>Semester Credit Hours</b>	<b>19</b>			<b>Semester Credit Hours</b>	<b>16</b>	

7 <sup>th</sup> Semester				8 <sup>th</sup> Semester			
Course Code	Course Title	Cr. Hrs.	Pre-req	Course Code	Course Title	Cr. Hrs.	Pre-req
CC4181	Final Year Project-I	3		CC4182	Final Year Project-II	3	CC4181
SE4192	Software Project Management	3	CC2101	SE4114	Human Computer Interaction	3	CC2101
SE4112	Software Quality Engineering	3	CC2101	HU4092	Professional Practices	3	
	SE Elective IV	3		SD102	21st Century Skills	0	
SE4113	Software Re-Engineering	3	SE3111, SE3111L		SE Elective V	3	
EN220	Research Paper Writing & Presentation	3	EN125				
	<b>Semester Credit Hours</b>	<b>18</b>			<b>Semester Credit Hours</b>	<b>12</b>	

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