Semester wise Road Map - **Total Credit Hours 132**

<table>
<tr><td colspan="8" align="center">1stYear</td></tr>
<tr><td colspan="4" align="center">Fall Semester</td><td colspan="4" align="center">Spring Semester</td></tr>
<tr><td>Code</td><td>Course Title</td><td>Cr. Hrs</td><td>Pre req.</td><td>Code</td><td>Course Title</td><td>Cr. Hrs</td><td>Pre req.</td></tr>
<tr><td>IT1091</td><td>Introduction to ICT</td><td>2</td><td>- - - -</td><td>CC1022</td><td>Object Oriented Programming</td><td>3</td><td>CC1021, CC1021L</td></tr>
<tr><td>IT1091L</td><td>Introduction to ICT Lab</td><td>1</td><td>- - - -</td><td>CC1022L</td><td>Object Oriented Programming Lab</td><td>1</td><td>CC1021, CC1021L</td></tr>
<tr><td>EN111</td><td>English Grammar & Comprehension</td><td>3</td><td>- - - -</td><td>CC1041</td><td>Discrete Structures</td><td>3</td><td>- - - -</td></tr>
<tr><td>MA100</td><td>Calculus & Analytical Geometry</td><td>3</td><td>- - - -</td><td>EN125</td><td>Composition and Communication</td><td>3</td><td>EN111</td></tr>
<tr><td>CC1021</td><td>Programming Fundamentals</td><td>3</td><td>- - - -</td><td></td><td>University Elective – I</td><td>3</td><td>- - - -</td></tr>
<tr><td>CC1021L</td><td>Programming Fundamentals Lab</td><td>1</td><td>- - - -</td><td></td><td>University Elective – II</td><td>3</td><td>- - - -</td></tr>
<tr><td>NS125</td><td>Applied Physics</td><td>2</td><td>- - - -</td><td></td><td></td><td></td><td></td></tr>
<tr><td>NS125L</td><td>Applied Physics Lab</td><td>1</td><td>- - - -</td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="2">Semester Credit Hours</td><td>16</td><td></td><td colspan="2">Semester Credit Hours</td><td>16</td><td></td></tr>
<tr><td colspan="8" align="center">2ndYear</td></tr>
<tr><td>Code</td><td>Course Title</td><td>Cr. Hrs</td><td>Pre req.</td><td>Code</td><td>Course Title</td><td>Cr. Hrs</td><td>Pre req.</td></tr>
<tr><td>CC2042</td><td>Data Structures & Algorithms</td><td>3</td><td>CC1022, CC1022L</td><td></td><td>IT Supporting Course – II (e.g. SE2102 - SRE)</td><td>3</td><td>- - - -</td></tr>
<tr><td>CC2042L</td><td>Data Structures & Algorithms Lab</td><td>1</td><td>CC1022, CC1022L</td><td></td><td>IT Supporting Course – I (e.g. IT2234 - Enterprise Systems)</td><td>3</td><td>- - - -</td></tr>
<tr><td>MA150</td><td>Probability & Statistics</td><td>3</td><td>- - - -</td><td>CC3071</td><td>Computer Networks</td><td>3</td><td>- - - -</td></tr>
<tr><td>CC2101</td><td>Software Engineering</td><td>3</td><td>- - - -</td><td>CC3071L</td><td>Computer Networks Lab</td><td>1</td><td>- - - -</td></tr>
<tr><td>IT2231</td><td>IT Infrastructure</td><td>3</td><td>- - - -</td><td></td><td>University Elective – III</td><td>3</td><td>- - - -</td></tr>
<tr><td>MA210</td><td>Linear Algebra</td><td>3</td><td>- - - -</td><td>CC2141</td><td>Database Systems</td><td>3</td><td>CC2042, CC2042L</td></tr>
<tr><td></td><td></td><td></td><td></td><td>CC2141L</td><td>Database Systems Lab</td><td>1</td><td>CC2042, CC2042L</td></tr>
<tr><td colspan="2">Semester Credit Hours</td><td>16</td><td></td><td colspan="2">Semester Credit Hours</td><td>17</td><td></td></tr>
</table>

					3rd Year		
Fall Semester				**Spring Semester**			
Code	**Course Title**	**Cr. Hrs**	**Pre req.**	**Code**	**Course Title**	**Cr. Hrs**	**Pre req.**
	IT Elective – I	3	- - - -	IT3161	Web Technologies	3	- - - -
ISL101	Islamic Studies	3	- - - -	IT3072	System and Network Administration	3	CC3011, CC3011L
CC3011	Operating Systems	3	CC2042, CC2042L	IT3072L	System and Network Administration Lab	1	CC3011, CC3011L
CC3011L	Operating Systems Lab	1	CC2042, CC2042L	IT4122	Cyber Security	3	- - - -
IT3142	Database Administration and Management	3	CC2141, CC2141L		IT Elective – III	3	- - - -
IT3142L	Database Administration and Management Lab	1	CC2141, CC2141L	IT3171	Virtual Systems and Services	3	- - - -
	IT Elective – II	3	- - - -	IT3171L	Virtual Systems and Services Lab	1	- - - -
EN100	English Immersion	0	- - - -		21st century	0	- - - -
Semester Credit Hours		**17**		**Semester Credit Hours**		**17**	
					4th Year		
Code	**Course Title**	**Cr. Hrs**	**Pre req.**	**Code**	**Course Title**	**Cr. Hrs**	**Pre req.**
CC4181	Final Year Project – I	3	- - - -	CC4182	Final Year Project – II	3	CC4181
EN220	Research Paper Writing and Presentation	3	EN125		University Elective – IV	3	- - - -
CC3121	Information Security	3	- - - -		IT Elective – V	3	- - - -
	IT Elective – IV	3	- - - -	HU4092	Professional Practices	3	- - - -
IT4191	IT Project Management	3	- - - -	POL101	Pakistan Studies	3	- - - -
	IT Supporting Course – III (e.g. IT4052-Operations Research)	3	- - - -				
Semester Credit Hours		**18**		**Semester Credit Hours**		**15**	