Proposed Curriculum for BS Software Engineering 4-Year Program

Semester - 1			
Code	Course Title	Pre-Req	Cr Hrs
	Programming Fundamentals		3-1
	Application of Info. and Comm. Technologies		2-1
	English Composition and Comprehension		3
	Calculus and Analytical Geometry		3
	Applied Physics		3
	Pakistan Studies		2
	*Pre- Mathematics I		3 (NC)
Total			16-2

Semester - 2			
Code	Course Title	Pre-Req	Cr Hr
	Discrete Structure		3
	Object Oriented Programming	PF	3-1
	Communication and Presentation Skills	English Composition and Comprehension	3
	Software Engineering		3
	Islamic Studies/ Ethics		3
	University elective- I		3
	*Pre- Mathematics II		3 (NC)
Total			17-1

Semester - 3			
Code	Course Title	Pre-Req	Cr Hrs
	Data Structures and Algorithms	OOP	3-1
	Software Requirements Engineering	SE	3
	Human Computer Interaction	SE	3
	Linear Algebra		3
	University Elective-II		3
Total			15-1

Semester - 4			
Code	Course Title	Pre-Req	Cr Hr
	Operating System	Data Structures and Algorithms	3-1
	Software Design and Architecture	HCI	2-1
	Database Systems	Data Structures and Algorithms	3-1
	Probability and Statistics		3
	University Elective-III		3
Total			14-3

Semester - 5			
Code	Course Title	Pre-Req	Cr Hrs
	Software Construction and Development	SE	2-1
	Computer Networks		3-1
	Technical and Business Writing	English Composition and Comprehension	3
	SE Supporting-I		3
	SE Supporting-II		3

Semester - 6			
Code	Course Title	Pre-Req	Cr Hr
	Software Quality Engineering	SE	3
	Information Security	Computer Networks	3
	Web Engineering		3
	Professional Practices		3
	SE Elective-I		3
	SE Supporting-III		3

Total			14-2		Total			18-0
Semester - 7					**Semester - 8**			
Code	Course Title	Pre-Req	Cr Hrs		Code	Course Title	Pre-Req	Cr Hr
	Final Year Project - I		0-3			Final Year Project – II	FYP-I	0-3
	Software Re-Engineering	SC&D	3			SE Elective-IV		3
	Software Project Management	SE	3			SE Elective-V		3
	SE Elective-II		3			Entrepreneurship /University Elective IV		3
	SE Elective-III		3					
Total			12-3					9-3
					*For FSc Pre-Medical Students Only			

Eligibility Criteria:

For admission to BSSE, a minimum of 50% marks in Intermediate/12 years schooling/A-Level (HSSC) or Equivalent with Mathematics is required. However, the students who have not studied mathematics at the intermediate level have to pass the deficiency mathematics courses (06 credits) in the first two semesters.

Duration:

The minimum duration for completing BSSE is four years. However, the HEC allows a maximum of seven years to complete the BSSE degree.

Credit Hours:

Minimum credit hours are 130, including 6 credit hours of the capstone project.

Award of Degree:

A minimum 2.0 CGPA (Cumulative Grade Point Average) on a scale of 4.0 is required to be awarded a BSSE Degree.

S#	Category	Crt Hrs.	Percentage
1	General Education	19	15
2	Computing Core	39	30
3	Domain Core	24	18
4	SE Supporting	09	07
5	Domain Elective	15	12
6	Math & Science	12	09
7	University Elective	12	09
	Total	**130**	**100**

Revised List of Elective Courses for BSSE:

Database Administration and Management	3	Information Technology Project Management	3
Cyber Security	3	Information Technology Infrastructure	3
System and Network Administration	3	Virtual Systems and Services	3
Compiler Construction	3	Comp. Organization & Assembly Language	3
Digital Logic Design	3	Design & Analysis of Algorithms	3
Parallel & Distributed Computing	3	Artificial Intelligence	3
Theory of Automata	3	Data Encryption and Security	3
Cloud Computing	3	Software Metrics	3
Mobile Application Development	3	Visual Programming	3
Topics in Software Engineering	3	Distributed Database Systems	3
Machine Learning	3	Data Mining	3
Introduction to Blockchain	3	Advanced Database Management Systems	3
Computer Architecture	3	Advanced Project Management	3
Research Methods	3	Operation Research	3