

Proposed Curriculum for BS Computer Science 4-Year Program

Semester - 1				Semester - 2			
Code	Course Title	Pre-Req	Cr Hr	Code	Course Title	Pre-Req	Cr Hr
	Programming Fundamentals		3-1		Probability and Statistics		3
	Introduction to ICT		2-1		Digital Logic Design	Applied Physics	3-1
	English Composition and Comprehension		3		Communication and Presentation Skills	English Comp. and Comprehension	3
	Calculus and Analytical Geometry		3		Object Oriented Programming	PF	3-1
	Applied Physics		3		University Elective- I		3
	*Pre- Mathematics I		3 (NC)		*Pre- Mathematics II		3 (NC)
Total			14-2	Total			15-2
Semester - 3				Semester - 4			
Code	Course Title	Pre-Req	Cr Hr	Code	Course Title	Pre-Req	Cr Hr
	Data Structures and Algorithms	OOP	3-1		Linear Algebra		3
	Computer Organization and Assembly Language	DLD	3-1		Design and Analysis of Algorithms	Data Structures and Algorithms	3
	Discrete Structures		3		Theory of Automata		3
	Professional Practices		3		Database Systems	Data Structure and Algorithms	3-1
	CS Supporting-I		3		University Elective- II		3
Total			15-2	Total			15-1
Semester - 5				Semester - 6			
Code	Course Title	Pre-Req	Cr Hr	Code	Course Title	Pre-Req	Cr Hr
	Operating Systems	Data Structures and Algorithms	3-1		Computer Networks		3-1
	Software Engineering		3		Technical and Business Writing		3
	Compiler Construction	Theory of Automata	3		Artificial Intelligence	Discrete Structures	3-1
	CS Supporting – II		3		CS Elective-I		3
	CS Supporting – III		3		CS Elective-II		3
Total			15-1	Total			15-2
Semester - 7				Semester - 8			
Code	Course Title	Pre-Req	Cr Hr	Code	Course Title	Pre-Req	Cr Hr
	Pakistan Studies		2		Final Year Project - II	FYP-I	0-3
	Final Year Project-I		0-3		Information Security	Computer Networks	3
	Parallel and Distributed Computing	OS	3		Islamic Studies/ Ethics		2
	CS Elective-III		3		CS Elective-V		3
	CS Elective-IV		3		University Elective-IV		3

	University Elective- III	3	Total	11-3
Total		14-3	*For FSc Pre-Medical Students Only	

Eligibility Criteria:

For admission to BSCS, 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 BSCS is four years. However, the HEC allows a maximum of seven years to complete the BSCS 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 BSCS Degree.

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

Revised List of Elective Courses for BSCS:

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
Web Technologies	3	Human-Computer Interaction	3
Software Construction and Development	3	Software Desing and Architecture	3
Software Project Management	3	Software Quality Engineering	3
Software Re-Engineering	3	Software Requirements Engineering	3
Web Engineering	3	Big Data Analytics	3

Cloud Computing	3	Data Encryption and Security	3
Mobile Application Development	3	Software Metrics	3
Topics in Software Engineering	3	Visual Programming	3
Machine Learning	3	Distributed Database Systems	3
Introduction to Blockchain	3	Data Mining	3
Computer Architecture	3	Advanced Database Management Systems	3
Research Methods	3	Operation Research	3