

Scheme of Studies BS Software Engineering

Semester 1		
CSI-301	Programming Fundamentals	4(3-1)
CSI-303	Introduction to Computing	4(3-1)
ENG-321	Functional English	3(3-0)
ISL-321	Islamic Studies / Ethics	2(2-0)
MTH-323	Calculus and Analytical Geometry	3(3-0)
		16
Semester 2		
CSI-302	Object Oriented Programming	4(3-1)
CSI-304	Discrete Structures	3(3-0)
ENG-322	English Comprehension & Composition	3(3-0)
MTH-324	Advanced Calculus	3(3-0)
ELT-321	Basic Electronics	3(3-0)
PST-321	Pakistan Studies	2(2-0)
		18
Semester 3		
CSI-401	Data Structure and Algorithms	3(2-1)
CSI-403	Digital Logic and Design	3(2-1)
SWE-401	Introduction to Software Engineering	3(3-0)
ENG-421	Communication Skills	3(3-0)
STA-321	Introduction to Statistical Theory	3(3-0)
MTH-424	Linear Algebra	3(3-0)
		18
Semester 4		
CSI-402	Operating Systems	3(2-1)
SWE-450	Object Oriented Software Design	3(2-1)
CSI-405	Introduction to Database Systems	4(3-1)
CSI-506	Analysis of Algorithms	3(3-0)
CSI-406	Computer Communications and Networks	3(3-0)
		16
Semester 5		
CSI-501	Web Engineering	3(2-1)
SWE-501	Software Requirements Engineering	3(2-1)
SWE-550	Software Quality Assurance	3(3-0)
SWE-503	Software Engineering Economics	3(3-0)
BBA-506	Human Resource Management	3(3-0)
CSI-601	Human Computer Interaction	3(3-0)
		18
Semester 6		
SOC-307	Introduction to Sociology	3(3-0)
SWE-505	Professional Practices	3(3-0)
CSI-607	Artificial Intelligence	3(2-1)
SWE-551	Software Design and Architecture	3(2-1)
SWE-553	Visual Programming	3(2-1)
	Elective-I	3
		18
Semester 7		
SWE-603	Software Project Management	3(3-0)
SWE-605	Software Metrics	3(2-1)
SWE-607	Mathematical tools for Software Engineering	3(2-1)

BBA-601	Organizational Behavior	3(3-0)
	Elective-II	3
	Elective-III	3
		18
Semester 8		
	Elective-IV	3
	Elective-V	3
SWE-631	Final Project	6(0-6)
		12
Grand Total for Degree		134

List of Elective Courses:

SWE-502	Software Process Improvement	3(3-0)
SWE-602	Information Systems and Data Processing	3(2-1)
SWE-604	Information System Audit	3(3-0)
SWE-617	Android Development	3(2-1)
SWE-618	Mobile Communication	3(3-0)
SWE-619	Digital Image Processing	3(2-1)
SWE-620	Data and Text Mining	3(2-1)
SWE-621	Software Testing	3(2-1)
SWE-622	Advanced Object Oriented Programming	3(2-1)
SWE-623	Software Configuration Management	3(2-1)
SWE-624	Computer Aided Software Design and Architecture	3(2-1)
	*Any other Elective Course from HEC booklet conditional to expertise.	

Agenda Item No. 4

MS Software Engineering

Core Courses		
SWE-701	Requirements Engineering	3(3-0)
SWE-702	Software System Architecture	3(3-0)
SWE-703	Software System Quality	3(3-0)
Elective Courses		
SWE-711	Software Reuse	3(3-0)
SWE-712	Machine Learning Applications in Software Engineering	3(3-0)
SWE-713	Software System Quality	3(3-0)
SWE-714	Semantic Web Enabled Software Engineering	3(3-0)
SWE-715	Business Process Re-Engineering	3(3-0)
SWE-716	Research Techniques and Methods for Software Engineering	3(3-0)
SWE-717	Formal Methods in Software Engineering	3(3-0)
SWE-718	Software Engineering Ontologies	3(3-0)
SWE-719	Semantic Based Software Development	3(3-0)
SWE-720	Model Driven Software Development	3(3-0)
SWE-721	Software Process Engineering	3(3-0)
SWE-722	Software Case Tools and Applications	3(3-0)
SWE-723	Advanced Web Engineering	3(3-0)
SWE-724	Software Engineering Management	3(3-0)
SWE-725	Software Risk Management	3(3-0)
SWE-726	Software Measurements and Metrics	3(3-0)
SWE-731	Global Software Engineering	3(3-0)
SWE-732	Software Configuration Management	3(3-0)
SWE-733	Knowledge Based Software Engineering	3(3-0)
SWE-734	Software Dependability	3(3-0)
SWE-735	Software Costing and Estimation	3(3-0)
SWE-750	Data and Text Mining-1	3(3-0)
SWE-751	Data and Text Mining-2	3(3-0)
SWE-752	Artificial Intelligence and Software Agents	3(3-0)
SWE-753	Image and Video Processing	3(3-0)
SWE-754	Advance Machine Learning	3(3-0)
SWE-755	Digital Image Processing	3(3-0)
Other Mandatory Requirements for MS		
SWE-730	Thesis	6(0-6)