

B.Sc. Software Engineering Technology

Scheme of Studies

SEMESTER-I				
Course Code	Course Title	Knowledge Area/Domain	Credit Hrs. (Th+Lab)	Contact Hrs. (Th+Lab)
GE-101	Islamic Studies / Ethics	General Education-I	2+0	2+0
ID-101	Occupational, Health and Safety	Interdisciplinary Distribution (IDE)	2+0	2+0
GE-102	Quantitative Reasoning (I)	Quantitative Reasoning-I	3+0	3+0
GE-103	Applied Physics	Natural Sciences-I	2+1	2+3
GE-104	Applications of Information and Communication Technologies	Application of Information and Communication Technologies	2+1	2+3
ST-101	Computer Programming	Computing-I	1+2	1+6
Subtotal			12 + 4	12 + 12
SEMESTER-II				
GE-105	Ideology and Constitution of Pakistan	General Education-II	2+0	2+0
GE-106	Economics	Social Science-I	2+0	3+0
ST-102	Discrete Structures	Software Engineering Technology Foundation-I	2+0	2+0

ST-103	Software Configuration Management Technologies	Software Engineering Technology Foundation-II	1+1	1+3
ST-104	Object Oriented Programming	Software Engineering Technology Foundation-III	1+2	1+6
ST-105	Software Development Life Cycle	Software Engineering Technology Foundation-IV	3+0	3+0
GE-107	Teaching of Holy Quran Translation-I	Art and Humanities-I	1+0	1+0
Subtotal			12 + 3	12 + 9
SEMESTER-III				
Course Code	Course Title	Knowledge Area	Credit Hrs. (Th+Lab)	Contact Hrs. (Th+Lab)
GE-201	Quantitative Reasoning (II)	Quantitative Reasoning-II	3+0	3+0
ST-201	Data Structures and Algorithms	Software Engineering Technology Foundation-V	2+1	2+3
ST-202	Software Requirements and Design	Software Engineering Technology Foundation-VI	2+1	2+3
GE-202	Functional English	Functional English-I	3+0	3+0
ST-203	Database Systems	Software Engineering Technology Foundation-VII	2+1	2+3
GE-203	Civics and Community Engagement	Civics and Community Engagement-I	2+0	2+0
GE-204	Basic Chinese Language	Art & Humanities-II	1+1	1+3
Subtotal			15 +4	15 + 12
SEMESTER-IV				
ST-204	Breadth Elective-1	Software Engineering Technology Breadth -I	2+1	2+3

GE-205	Entrepreneurship	Entrepreneurship-I	2+0	2+0
ST-205	Web Development Technologies	Software Engineering Technology Breadth - II	1+2	1+6
ST-206	Software Operations and Maintenance	Software Engineering Technology Breadth- III	2+1	2+3
ST-207	Software Testing Technologies	Software Engineering Technology Foundation-VIII	2+1	1+3
ST-208	Operating Systems	Software Engineering Technology Depth -I	2+1	2+3
GE-206	Teaching of Holy Quran Translation-II	Art and Humanities-III	1+0	1+0
Subtotal			12+6	12 + 18
SEMESTER-V				
Course Code	Course Title	Knowledge Area	Credit Hrs. (Th+Lab)	Contact Hrs. (Th+Lab)
GE-301	Expository Writing	Expository Writing – I	3+0	3+0
ST-301	Breadth Elective-II	Software Engineering Technology Breadth –IV	2+1	2+3
ID-301	IDTE-I	Interdisciplinary Technology Elective-I	1+1	1+3
ST-302	Software Project Management	Software Engineering Technology Breadth –V	1+1	1+3
ST-303	Information Security	Software Engineering Technology Breadth - VI	2+0	2+0
ST-304	Computer Networking Technologies	Software Engineering Technology Depth -II	2+1	2+3
CP-301	Capstone Project -I	Software Engineering Technology Domain Project	0+3	0+9
Subtotal			11+7	11 + 21

SEMESTER-VI				
ID-302	Technopreneurship	Interdisciplinary Distribution (IDE)	3+0	3+0
ST-305	Depth Elective-I	Software Engineering Technology Depth -III	2+1	2+3
ST-306	Depth Elective-II	Software Engineering Technology Depth -IV	2+1	2+3
ST-307	Depth Elective-III	Software Engineering Technology Depth -V	2+1	2+3
ID-303	IDTE-II	Interdisciplinary Technology Elective-II	1+1	1+3
CP-302	Capstone Project-II	Software Engineering Technology Domain Project	0+3	0+9
GE-302	Teaching of Holy Quran Translation-III	Art and Humanities-III	1+0	1+0
Subtotal			11 + 7	11+21
SEMESTER-VII				
Course Code	Course Title	Knowledge Area	Credit Hrs. (Th+Lab)	Contact Hrs. (Th+Lab)
ST-401	Depth Elective-IV	Software Engineering Technology Depth – VI	2+1	2+3
ST-402	Depth Elective-V	Software Engineering Technology Depth – VII	2+1	2+3
ST-403	Depth Elective-VI	Software Engineering Technology Depth – VIII	2+1	2+3
ST-404	Depth Elective-VII	Software Engineering Technology Depth – IX	2+1	2+3
ST-405	Depth Elective-VIII	Software Engineering Technology Depth -X	2+1	2+3

ST-406	Depth Elective-IX	Software Engineering Technology Depth - XI	2+1	2+3
Subtotal			12+06	12+18
SEMESTER-VIII				
ST-401	Supervised Industrial Training	Software Engineering Technology Domain Industrial Training	16	40 (per Week)
	Subtotal		0+16= 16	0+40= 40

Total Credit Hours & Contact Hours in Four Years	85+53 = 138	85+159=244
Theory vs Practical with respect to Contact Hours	Theory Practical	85 (34.83%) 159 (65.17%)

Bachelor of Software Engineering Technology Program		
Parameter	HEC Framework	Proposed Scheme of Study
Program Type	Semester System	Semester System
Program Duration	8 Semesters Min: 4 Years Max: 7 Years	8 Semesters Min: 4 Years Max: 7 Years
Semester Duration	16 weeks of Teaching 2 weeks for Exams	16 weeks of Teaching 2 weeks for Exams
Total Number of Courses	41	48
Engineering Technology Domain Courses	28	33
Non-Engineering Technology Domain Courses	13	15
Total Credit Hours	124 – 136	138
Engineering Technology Domain Credit Hours	85	105
Percentage of Engineering Technology Domain Courses	74.42%	76.08%

Non-Engineering Technology Domain Credit Hours	39	33
Percentage of Non-Engineering Technology Domain Courses	31.45%	23.92 %
No. of Credit Hours per Semester	15 – 18	15 – 19

List of Elective Courses	
Breadth Electives	Depth Electives
<ul style="list-style-type: none"> ☐ Software Quality Assurance and Quality Control ☐ Software Modeling Technologies ☐ Agile Software Development ☐ Mobile Application Development ☐ Artificial Intelligence Technology 	<ul style="list-style-type: none"> ☐ Cloud Application Development ☐ Cyber Security ☐ Computer Organization and Architecture ☐ Machine Learning ☐ Digital Forensics ☐ Social Network Analysis ☐ Design and Analysis of Algorithms ☐ E-Business ☐ Artificial Neural Networks
Interdisciplinary Technology Electives	

<ul style="list-style-type: none"> - Electronic Devices and Circuits - Digital Logic & Design - BioInformatics - Agricultural Technologies - Financial Technologies - Financial Accounting 	<ul style="list-style-type: none"> ? Data Warehousing & Data Mining ? Internet of Things ? Signals & Systems ? Distributed Database Systems ? Mobile and Wireless Networks ? Big Data Analytics ? Deep Learning ? Game Application Development ? Visual Programming ? Digital Image Processing ? Simulation and Modelling ? Human-Computer Interaction ? Cloud Computing ? Formal Methods in Software Engineering ? Navigational Aids ? Software Testing & Implementation ? Software Metrics ? Business Process Automation ? Embedded Systems ? Real Time Systems ? Data Security & Encryption ? Computer Graphics ? Agent-based Software Engineering ? Management Information Systems ? Natural Language Processing ? Multimedia and Animation
--	---