

SCHEME OF STUDIES
(B.S INFORMATION TECHNOLOGY (4 YEARS PROGRAMME))

	Code	Course Title	Course Type	Prerequisite	Credit hours
Semester 1					
1.	GE-161	Introduction to ICT	General Education		2
2.	GE-161L	Introduction to ICT-Lab	General Education		1
3.	GE-162	English Composition and Comprehension	General Education		3
4.	GE-163	Islamic Studies	General Education		3
5.	GE-165	Pakistan Studies	General Education		3
6.	MS-151	Applied Physics	Math & Science Foundation		2
7.	MS-152	Calculus and Analytical Geometry	Math & Science Foundation		2
8.	MD-001	Math Deficiency - 1	Deficiency Course		3*
Total Credit Hours: 16					
Semester 2					
1.	CC-111	Discrete Structures	Computing Core		3
2.	CC-112	Programming Fundamentals	Computing Core		3
3.	CC-122L	Programming Fundamentals Lab	Computing Core		1
4.	GE-164	Communication & Presentation Skills	General Education		3
5.	UE-171	Introduction to Economics	University Elective		3
6.	UE-172	Arabic Language	University Elective		2
7.	MD-002	Math Deficiency - II	Deficiency Course		3*
Total Credit Hours: 15					
Semester 3					
1.	CC-211	Object Oriented Programming	Computing core	Programming Fundamentals	3
2.	CC-211L	Object Oriented Programming Lab	Computing core	Programming Fundamentals	1
3.	CC-214	Computer Networks	Computing core		3
4.	CC-214L	Computer Networks	Computing core		1

		Lab			
5.	EI-231	Computer Organization and Design	IT Elective		3
6.	UE-271	Introduction to Psychology	University Elective		3
7.	MS-251	Probability and Statistics	Math & Science Foundation		3
Total Credit Hours: 17					
Semester 4					
1.	CC-213	Data Structures & Algorithms	Computing Core	Object Oriented Programming	3
2.	CC-213L	Data Structures & Algorithms Lab	Computing Core	Object Oriented Programming	1
3.	CC-215	Database Systems	Computing Core		3
4.	CC-215L	Database Systems Lab	Computing Core		1
5.	CC-212	Software Engineering	Computing Core		3
6.	SI-241	Modeling and Simulation	IT Supporting		3
7.	MS-252	Linear Algebra	Math & Science Foundation		3
Total Credit Hours: 17					
Semester 5					
1.	CC-311	Operating System	Computing core	Data Structures & Algorithms	3
2.	CC-311L	Operating System Lab	Computing core	Data Structures & Algorithms	1
3.	CC-312	Information Security	Computing core		3
4.	DI-322	Web Technologies	Domain Core	Programming Fundamentals	3
5.	DI-322L	Web Technologies Lab	Domain Core	Programming Fundamentals	1
6.	SI-371	Software Requirements Engineering	IT Supporting	Software Engineering	3
7.	EI-331	Design and Analysis of Algorithms	IT Elective	Data Structures & Algorithms	3
Total Credit Hours: 17					

Semester 6					
1.	DI-323	System and Network Administration	Domain Core	Operating Systems	3
2.	DI-323L	System and Network Administration Lab	Domain Core	Operating Systems	1
3.	DI-326	Artificial Intelligence	Domain Core	Data Structures & Algorithms	3
4.	SI-342	Enterprise Systems	IT Supporting	Database Systems	3
5.	EI-333	Mobile Application Development	IT Elective		3
6.	UE-272	Principles of Management	University Elective		3
Total Credit: 16					
Semester 7					
1.	CC-411	Final Year Project - I	Computing Core		3
2.	DI-324	Database Administration and Management	Domain Core		3
3.	DI-324L	Database Administration and Management Lab	Domain Core		1
4.	DI-325	Cyber Security	Domain Core		3
5.	DI-321	IT Project Management	Domain Core		3
6.	EI-334	Data Science	IT Elective		3
Total Credit Hours: 16					
Semester 8					
1.	CC-412	Final Year Project – II	Computing Core		3
2.	DI-421	Virtual Systems and Services	Domain Core	Programing Fundamentals	3
3.	DI-421L	Virtual Systems and Services Lab	Domain Core	Programming Fundamentals	1
4.	EI-337	Software Quality Assurance	IT Elective		3
5.	GE-261	Technical and Business Writing	General Education		3
6.	GE-166	Professional Practices	General Education		3
7.	UE-371	Social Service	University		1

			Elective		
Total Credit Hours: 17					

Research Thesis / Project / Internship

Final Year project (6 credit hours, VII & VIII semesters)

COURSE OUTLINES

	Code	Course Title	Course Type	Prerequisite	Credit Hours
Computing Core (39)					
1.	CC-211	Object Oriented Programming	Computing core	Programming Fundamentals	3
2.	CC-211L	Object Oriented Programming Lab	Computing core	Programming Fundamentals	1
Semester VIII					
1.	CC-412	Final Year Project – II	Computing Core		3
2.	DI-421	Virtual Systems and Services	Domain Core	Programming Fundamentals	3
3.	DI-421L	Virtual Systems and Services Lab	Domain Core	Programming Fundamentals	1
4.	EI-337	Software Quality Assurance	IT Elective		3
5.	GE-261	Technical and Business Writing	General Education		3
6.	GE-166	Professional Practices	General Education		3
7.	UE-371	Social Service	University Elective		1
Total Credit Hours: 17					

Research Thesis / Project /Internship

Final Year Project (6 credit hours, VII & VIII semesters)

COURSE OUTLINES

	Code	Course Title	Course	Prerequisite	Credit
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			Type		Hours
Computing Core (39)					
1.	CC-211	Object Oriented Programming	Computing core	Programming Fundamentals	3
2.	CC-211L	Object Oriented Programming Lab	Computing core	Programming Fundamentals	1
3.	CC-112	Programming Fundamentals	Computing Core		3
4.	CC-122L	Programming Fundamentals Lab	Computing Core		1
5.	CC-213	Data Structures & Algorithms	Computing Core	Object Oriented Programming	3
6.	CC-213L	Data Structures & Algorithms Lab	Computing Core	Object Oriented Programming	1
7.	CC-111	Discrete Structures	Computing Core		3
8.	CC-212	Software Engineering	Computing Core		3
9.	CC-215	Database Systems	Computing Core		3
10.	CC-215L	Database Systems Lab	Computing Core		1
11.	CC-214	Computer Networks	Computing core		3
12.	CC-214L	Computer Networks Lab	Computing core		1
13.	CC-311	Operating System	Computing core	Data Structures & Algorithms	3
14.	CC-311L	Operating System Lab	Computing core	Data Structures & Algorithms	1
15.	CC-312	Information Security	Computing core		3
16.	CC-411	Final Year Project - I	Computing Core		3
17.	CC-412	Final Year Project – II	Computing Core		3
Math & Science Foundation (12,6*)					
1.	MD-001	Math Deficiency - 1	Deficiency Course		3*
2.	MD-002	Math	Deficiency		3*

		Deficiency - II	Course		
3.	MS-151	Applied Physics	Math & Science Foundation		2
4.	MS-152	Calculus and Analytical Geometry	Math & Science Foundation		2
5.	MS-251	Probability and Statistics	Math & Science Foundation		3
6.	MS-252	Linear Algebra	Math & Science Foundation		3
General Education (19)					
1.	GE-161	Introduction to ICT	General Education		2
2.	GE-161L	Introduction to ICT-Lab	General Education		1
3.	GE-163	Islamic Studies	General Education		3
4.	GE-165	Pakistan Studies	General Education		3
5.	GE-162	English Composition and Comprehension	General Education		3
6.	GE-164	Communication & Presentation Skills	General Education		3
7.	GE-261	Technical and Business Writing	General Education		3
8.	GE-166	Professional Practices	General Education		3
Information Technology Core (25)					
1.	DI-321	IT Project Management	Domain Core		3
2.	DI-322	Web Technologies	Domain Core	Programming Fundamentals	3
3.	DI-322L	Web Technologies Lab	Domain Core	Programming Fundamentals	1
4.	DI-323	System and Network Administration	Domain Core	Operating Systems	3
5.	DI-323L	System and	Domain	Operating	1

		Network Administration Lab	Core	Systems	
6.	DI-324	Database Administration and Management	Domain Core		3
7.	DI-324L	Database Administration and Management Lab	Domain Core		1
8.	DI-325	Cyber Security	Domain Core		3
9.	DI-326	Artificial Intelligence	Domain Core	Data Structures & Algorithms	3
10.	DI-421	Virtual Systems and Services	Domain Core	Programming Fundamentals	3
11.	DI-421L	Virtual Systems and Services Lab	Domain Core	Programming Fundamentals	1
IT Supporting (9) Any Three of the Following					
1.	SI-241	Modeling and Simulation	IT Supporting		3
2.	SI-371	Software Requirements Engineering	IT Supporting	Software Engineering	3
3.	SI-342	Enterprise Systems	IT Supporting	Database Systems	3
IT Technical Elective (15) Any Five from the Following Non-Exhaustive List of Courses					
1.	EI-231	Computer Organization and Design	IT Elective		3
2.	EI-331	Design and Analysis of Algorithms	IT Elective	Data Structures & Algorithms	3
3.	EI-333	Mobile Application Development	IT Elective		3
4.	EI-334	Data Science	IT Elective		3
5.	EI-337	Software Quality Assurance	IT Elective		3
University Elective (12) One Course Against Each Major Category					

1.	UE-171	Introduction to Economics	University Elective		3
2.	UE-172	Arabic Language	University Elective		2
3.	UE-271	Introduction to Psychology	University Elective		3
4.	UE-272	Principles of Management	University Elective		3
5.	UE-371	Social Service	University Elective		1