

Curriculum / Scheme of Studies of Bachelor of Science in Information Technology (BS Information Technology)

(Revised in June, 2020)

APPLICABLE W.E.F. FALL 2021



University of Education, Lahore

Slam-d

Table of Contents

Serial #	Chapter	Page #
1	Introduction	3
2	Program Objectives	3
3	Vision	3
4	Mission Statement	3
5	Admission Requirements	4
6	Medium of Instruction and Examination	4
7	Program Design	5
8	Program Layout	6
9	Semester Breakup	11
10	Course Outlines	15



Program Design:

Sr. No.	Categories of Courses	No. of Courses	Credit Hours
1	General Education	7	19
2	Mathematics & Science Foundation	4	12
3	Computing Core	9	33/HEC-39
4	Domain IT Core	7	24
5	*Domain IT Elective	5	15
6	*Domain IT Supporting	3	9
7.	*University Electives	4	12
8	Thesis / Project	1	6
Total			130

* Any **five IT Elective** courses will be chosen from the list of elective courses depending upon the availability of the experts

* Any **three IT supporting** courses will be chosen from the list of elective courses depending upon the availability of the experts.

* Any **four** from the list of **University Elective** courses depending upon the availability of the experts. Coverage of relevant prerequisites must be ensured while offering any of the following courses form the category.



Program Layout

General Education

SN	Course Code	Course Title	Credit Hours
1	ENGL1114	Functional English	3(3+0)
2	ENGL1119	Communication Skills	3(3+0)
3	ENGL2115	Technical Writing and Presentation Skills	3(3+0)
4	ITEC4112	Professional Practices	3(3+0)
5	COMP1111	Introduction to Information Technology	3(3+0)
6	PAKS1111	Pakistan Studies	2(2+0)
7	ISLA1111	Islamic Studies/ Ethics*	2(2+0)

* For non-Muslim Students

Mathematics & Science Foundation

SN	Course Code	Course Title	Credit Hours
1	MATH1111	Calculus-1	3(3+0)
2	STAT2111	Introduction to Statistics and Probability	3(3+0)
3	MATH2114	Elementary Linear Algebra	3(3+0)
4	PHYS4129	Digital Logic and Design	3(2+1)

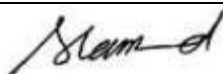
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Computing Core

SN	Course Code	Course Title	Credit Hours
1	COMP1112	Programming Fundamentals	4(3+1)
2	COMP2111	Object Oriented Programming	4(3+1)
3	COMP2113	Data Structures and Algorithms	4(3+1)
4	MATH2113	Discrete Mathematics	3(3+0)
5	COMP2115	Operating Systems	4(3+1)
6	COMP2114	Database Systems	4(3+1)
7	COMP2112	Software Engineering	3(3+0)
8	COMP3112	Computer Communications and Networks / HEC-Computer Networks	4(3+1)
9	ITEC4111	Network Security	3(3+0)

Domain IT Core

SN	Course Code	Course Title	Credit Hours
1	ITEC3125	Cyber Security	3(3+0)
2	ITEC3112	Database Administration & Management	4(3+1)
3	ITEC3118	IT Project Management	3(3+0)
4	ITEC5114	Information Technology Infrastructure	3(3+0)
5	ITEC3123	System and Network Administration	4(3+1)
6	ITEC3124	Virtual Systems and Services	4(3+1)
7	ITEC3111	Web Engineering	3(3+0)



Domain IT Electives

Any *five* IT Elective courses will be chosen from the list of elective courses depending upon the availability of the experts.

S N	Course Code	Course Title	Credit Hours
1	ITEC3117	Internet Architecture and Protocol	3(3+0)
2	ITEC4124	Data Mining	3(3+0)
3	ITEC4119	Artificial Intelligence	3(3+0)
4	ITEC4122	Software Quality Assurance	3(3+0)
5	COMP3113	Human Computer Interaction	3(3+0)
6	ITEC3115	Object Oriented Analysis and Design	3(3+0)
7	ITEC2111	Technology Management	3(3+0)
8	ITEC4117	Network Design and Management	3(2+1)
9	ITEC4118	Distributed Database Systems	3(3+0)
10	ITEC4120	Electronic Commerce	3(3+0)
11	ITEC4121	Data Warehousing	3(3+0)
12	ITEC4123	Geographical Information System	3(3+0)
13	ITEC4125	Design Patterns	3(3+0)
14	ITEC4126	Business Process Management	3(3+0)
15	ITEC4127	Software CASE Tools and Applications	3(3+0)
16	ITEC4128	Computer Graphics	3(2+1)



17	ITEC4129	Software Design and Architecture	3(3+0)
18	ITEC4131	Distributed Computing	3(3+0)
19	ITEC4132	Computer Architecture	3(3+0)
20	ITEC4133	iOS Applications Development	3(2+1)
21	ITEC3113	Multimedia Systems and Design	3(3+0)
22	ITEC4116	Advance Web Application Development	4(3+1)
23	ITEC4113	Cloud Computing	3(3+0)
24	ITEC4130	Mobile Application Development	3(2+1)
25	ITEC4135	Mobile and Pervasive Computing	3(3+0)
26	ITEC4136	Knowledge Based Systems	3(3+0)
27	ITEC4137	Advanced Programming Techniques	3(3+0)

Domain IT Supporting

Any *three* from the list of elective courses depending upon the availability of the experts. Coverage of relevant prerequisites must be ensured while offering any of the following courses form the category.

SN	Course Code	Course Title	Credit Hours
1	ITEC4114	Enterprise Resource Planning Systems	3(3+0)
2	ITEC4138	Simulation and Modeling	3(3+0)
3	ITEC4115	Formal Methods in Software Engineering	3(3+0)
4	ITEC4139	Operational Research	3(3+0)
5	ITEC4140	Software Requirements Engineering	3(3+0)



University Electives

Any *four* from the list of elective courses depending upon the availability of the experts.

SN	Course Code	Course Title	Credit Hours
1	BUSA2115	Human Resource Management	3(3+0)
2	BUSA3112	Financial Accounting	3(3+0)
3	BUSA4113	Entrepreneurship	3(3+0)
4	BUSA3119	Organizational Behavior	3(3+0)
5	PSYC2112	Principles of Psychology	3(3+0)
6	PSYC2113	Creative Thinking	3(3+0)
7	BUSA5164	Total Quality Management	3(3+0)
8	EDUC1112	General Methods of Teaching	3(3+0)
9	EDUC2118	Curriculum Design and Instruction	3(3+0)
10	EDUC3143	Educational Assessment	3(3+0)
11	PHYS1113	Electronics	3(3+0)

Thesis/Project

Sr. No.	Course Code	Course Title	Credit Hours
1	COMP4111	IT Capstone Project*	6(6+0)

* The IT Capstone Project will start in 7th Semester but the evaluation of thesis will be carried out at the end of 8th Semester after viva-voce of students.



Semester Breakup

SEMESTER I

SN	Course Code	Course Title	Credit Hours
1	ENGL1114	Functional English (GE-1)	3(3+0)
2	COMP1111	Introduction to Information Technology (GE-2)	3(3+0)
3	ISLA1111/ HUMN1111 *	Islamic Studies/Ethics (GE-3)	2(2+0)
4	MATH1111	Calculus-1 (Math-1)	3(3+0)
5	PHYS4129	Digital Logic and Design	3(2+1)
6	XXXXXXX	(University Elective 1)	3(3+0)
Total			16+1=17

*Student will have option to select ISLA1111 or HUMN1111

SEMESTER II

SN	Course Code	Course Title	Credit Hours
1	ENGL1119	Communication Skills (GE-4)	3(3+0)
2	PAKS1111	Pakistan Studies (GE-5)	2(2+0)
3	COMP1112	Programming Fundamentals (Comp. Core-(1))	4(3+1)
4	MATH2113	Discrete Mathematics (Comp. Core-(2))	3(3+0)
5	ITEC5114	Information Technology Infrastructure (IT. Core (1))	3(3+0)
6	XXXXXXX	(University Elective 2)	3(3+0)
Total			17+1=18



SEMESTER III

SN	Course Code	Course Title	Credit Hours
1	ENGL2115	Technical Writing and Presentation Skills (GE-6)	3(3+0)
2	COMP2111	Object Oriented Programming (Comp. Core(3))	4(3+1)
3	MATH2114	Elementary Linear Algebra (Math-3)	3(3+0)
4	COMP2114	Database Systems (Comp. Core(4))	4(3+1)
5	XXXXXXX	(University Elective 3)	3(3+0)
Total			15+2=17

SEMESTER IV

SN	Course Code	Course Title	Credit Hours
1	STAT2111	Introduction to Statistics and Probability (Math-4)	3(3+0)
2	COMP2112	Software Engineering (Comp. Core(5))	3(3+0)
3	COMP2115	Operating Systems (Comp. Core (6))	4(3+1)
4	COMP2113	Data Structures and Algorithms (Comp. Core (7))	4(3+1)
5	XXXXXXX	(University Elective 4)	3(3+0)
Total			15+2=17



SEMESTER V

SN	Course Code	Course Title	Credit Hours
1	ITEC3112	Database Administration and Management (IT. Core (2))	4(3+1)
2	ITEC3123	System and Network Administration (IT. Core (3))	4(3+1)
3	ITEC3111	Web Engineering (IT. Core (4))	3(3+0)
4	ITECXXXX	IT Elective 1	3(3+0)
5	ITECXXXX	IT Elective 2	3(3+0)
Total			15+2=17

SEMESTER VI

SN	Course Code	Course Title	Credit Hours
1	ITEC3118	IT Project Management (IT. Core (5))	3(3+0)
2	COMP3112	Computer Communications and Networks (Comp. Core (8))	4(3+1)
3	ITECXXXX	IT Elective 3	3(3+0)
4	ITECXXXX	IT Elective 4	3(3+0)
5	ITECXXXX	IT Supportive 1	3(3+0)
Total			15+1=16



SEMESTER VII

SN	Course Code	Course Title	Credit Hours
1	ITEC3125	Cyber Security (IT. Core (6))	3(3+0)
2	ITEC4112	Professional Practices (GE-7)	3(3+0)
3	ITECXXXX	IT Elective 5	3(3+0)
4	ITECXXXX	IT Supportive 2	3(3+0)
5	COMP4111	IT Capstone Project*	3(3+0)
Total			15+0=15

* The IT Capstone Project will start in 7th Semester but the evaluation of thesis will be carried out at the end of 8th Semester after viva-voce of students.

SEMESTER VIII

SN.	Course Code	Course Title	Credit Hours
1	ITEC3124	Virtual Systems and Services (IT. Core (7))	4(3+1)
2	ITECXXXX	IT Supportive 3	3(3+0)
3	ITEC4111	Network Security (Comp. Core (9))	3(3+0)
4	COMP4111	IT Capstone Project	3(3+0)
Total			12+1=13



