

Fall onward - BSE will not

SOS of BSE

COMSATS Institute of Information Technology
Registrar Office, Principal Seat, Islamabad

No: CIIT-Reg/Notif-490/17/633

February 14, 2017

NOTIFICATION

The Academic Council in its 27th meeting held on December 20, 2016 approved the revised Scheme of Studies of Bachelor of Science in Software Engineering, effective from Fall 2017;

Nomenclature: Bachelor of Science in Software Engineering

- 1. Minimum Duration
 - i. No. of Years: 04
 - ii. No. of Semesters: 08

2. Course Work

	Min No. of Courses	Min No. of Credit Hours
I. Core Courses (List Attached):		
i. Computing Core Courses	13	45
ii. Computing Supporting Areas Courses	4	13
iii. Computing General Education Courses	6	18
iv. Software Engineering Core Courses	6	18
II. Elective Courses (List Attached)		
i. Supporting Science Elective Courses	3	9
ii. CS and SE Elective Courses	5	15
iii. Institutional Elective Courses	3	9
iv. Domain Elective Courses	2	6
3. Total No. of Courses in the Program:	42	
4. Total Credit Hours of the Program:		133
5. Minimum Credit Hours Required:		133

Note:

1. The Regulations relating to Undergraduate Degree Programs approved by the Competent Authority and amended from time to time shall be applicable.
2. CSE350-Topics in Software Engineering - I and CSE483-Topics in Software Engineering - II may be allowed to offer upon getting prior approval from the Head of Department (HOD).

Gul Muhammad

Mian Gul Muhammed
Additional Registrar (Acad)

Encl (62 pages including this page)

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Computing Core Courses

Course Code	Course Title	Credit Hours	Pre-requisite (s)
CSC101	Introduction to ICT	3(2, 1)	-
CSC103	Programming Fundamentals	4(3, 1)	-
CSC241	Object Oriented Programming	4(3, 1)	CSC103
CSC102	Discrete Structures	3(3, 0)	-
CSC211	Data Structures and Algorithms	4(3, 1)	CSC103
EEE241	Digital Logic Design	4(3, 1)	-
CSE291	Introduction to Software Engineering	4(3,1)	-
CSC322	Operating Systems	3(2, 1)	CSC211
CSC339	Data Communications and Computer Networks	3(2, 1)	-
CSC356	Human Computer Interaction	3(2, 1)	-
CSC371	Database Systems I	4(3, 1)	CSC241
CSE498	Senior Design Project I	2(0, 2)	CSC371, CSE291, HUM102, CSC241
CSE499	Senior Design Project II	4(0, 4)	CSE498

Computing Supporting Courses

Course Code	Course Title	Credit Hours	Pre-requisite (s)
MTH104	Calculus and Analytic Geometry	3(3, 0)	-
MTH231	Linear Algebra	3(3, 0)	-
MTH262	Statistics and Probability Theory	3(3, 0)	-
EEE121	Electric Circuits Analysis I	4(3,1)	-

Computing General Education Courses

Course Code	Course Title	Credit Hours	Pre-requisite (s)
HUM100	English Comprehension and Composition	3(3, 0)	-
HUM102	Report Writing Skills	3(3, 0)	HUM100
HUM107	Communication Skills	3(3, 0)	HUM100
HUM110	Islamic Studies	3(3, 0)	-
HUM111	Pakistan Studies	3(3, 0)	-
CSC110	Professional Practices for IT	3(3, 0)	-

Note: Non-Muslim students can opt for HUM114 Ethics 3(3, 0) course in lieu of HUM110 Islamic Studies, if they intend to.

Software Engineering Core Courses

Course Code	Course Title	Credit Hours	Pre-requisite (s)
CSE304	Object Oriented Software Engineering	3(2, 1)	CSE291
CSE305	Software Requirement Engineering	3(3, 0)	CSE291
CSE302	Software Quality Engineering	3(3, 0)	CSE291
CSE303	Software Design and Architecture	3(3, 0)	CSE291
CSE494	Software Project Management	3(2, 1)	CSE291
CSE455	Software Testing	3(2, 1)	CSE302

Supporting Science Elective Courses

Course Code	Course Title	Credit Hours	Pre-requisite (s)
MTH105	Multivariable Calculus	3(3, 0)	MTH104
MTH242	Differential Equations	3(3, 0)	MTH104
CSC475	Numerical Computing	3(3, 0)	MTH104
PHY120	Electricity, Magnetism and Optics	4(3, 1)	-
PHY229	Modern Physics	4(3, 1)	PHY120
PHY100	Mechanics and Thermodynamics	4(3, 1)	-
BIO231	Fundamentals of Genetics	4(3, 1)	-
BIO233	Development Biology	4(3, 1)	-
BIO135	General Chemistry	4(3, 1)	-
BSC206	Introduction to Microbiology	4(3, 1)	-
BIO310	Introduction to Bioinformatics	4(3, 1)	-
BSC101	Zoology I	4(3, 1)	-
BSC102	Plant Sciences I	4(3, 1)	-
BIO100	Fundamentals of Biology	3(2, 1)	-
ENV230	Environmental Monitoring	3(2, 1)	-
SLS130	Introductory Soil Science I	4(3, 1)	-
MTH232	Abstract Algebra	3(3, 0)	-
MTH251	Set Topology	3(3, 0)	-
MTH112	Set Theory and Logic	3(3, 0)	-

Embarked

Computer Science & Software Engineering Electives

Course Code	Course Title	Credit Hours	Pre-requisite (s)
CSC412	Visual Programming	3(2,1)	CSC241
CSC495	Game Development	3(2, 1)	CSC241
CSC334	Parallel and Distributed Computing	3(2, 1)	CSC103
CSC432	Information Security	3(3, 0)	CSC339
CSC482	Systems and Networks Administration	3(2, 1)	CSC339
CSC430	Wireless Networks	3(2, 1)	CSC339
CSC402	Database Systems II	3(3, 0)	CSC371
CSC471	Distributed Database Systems	3(3, 0)	CSC371
CSC461	Introduction to Data Science	3(3, 0)	MTH262
CSC347	Computational Intelligence	3(3, 0)	CSC241
CSC451	Introduction to Modeling and Simulation	3(2, 1)	CSC211
CSC331	Digital Image Processing	3(3, 0)	MTH231
CSC454	Pattern Recognition	3(3, 0)	CSC354
CSC462	Artificial Intelligence	3(2, 1)	CSC102
CSC455	Computer Vision	3(3, 0)	MTH231
CSE354	Design Patterns	3(2, 1)	-
CSC443	Scripting Languages	3(2, 1)	CSC241
CSE300	Software Metrics	3(3, 0)	CSE291
CSE356	Formal Methods	3(3, 0)	CSE291
CSE330	E-Commerce	3(2, 1)	-
CSE331	Software Engineering Economics	3(3, 0)	-
CSE332	Information System Audit	3(3, 0)	-
CSE333	Software Process Improvement	3(3, 0)	-
CSE334	Reverse Engineering of Source Code	3(2, 1)	-
CSC321	Microprocessor and Assembly Language	3(2, 1)	EEE241
CSE350	Topics in Software Engineering I	3(3, 0)	-
CSE483	Topics in Software Engineering II	3(3, 0)	-

Note: CSE350 and CSE483 can be offered with the approval of the Head of Department. However, the contents of these courses must reflect the recent industrial practices.

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Institutional Elective Courses

Course Code	Course Title	Credit Hours	Pre-requisite (s)
MGT100	Introduction to Business	3(3, 0)	-
MGT101	Introduction to Management	3(3, 0)	-
MGT131	Financial Accounting	3(3, 0)	-
MGT210	Fundamentals of Marketing	3(3, 0)	-
MGT403	Entrepreneurship	3(3, 0)	-
MGT350	Human Resource Management	3(3, 0)	-
MGT522	Marketing of IT and Telecom Products	3(3, 0)	-
HUM220	Introduction to Psychology	3(3, 0)	-
HUM221	International Relations	3(3, 0)	-
HUM320	Introduction to Sociology	3(3, 0)	-
HUM430	French	3(3, 0)	-
HUM431	German	3(3, 0)	-
HUM432	Arabic	3(3, 0)	-
HUM433	Persian	3(3, 0)	-
HUM434	Chinese	3(3, 0)	-
HUM435	Japanese	3(3, 0)	-

Domain Specific Elective Courses

Course Code	Domain	Course Title	Credit Hours	Pre-requisite (s)
CSE360	Safety Critical Systems	Software Safety Critical Systems	3(3, 0)	-
CSE361		Software Fault Tolerance	3(3, 0)	-
CSC354	Information Systems and Data Processing	Machine Learning &	3(3, 0)	-
CSC496		Data Warehousing and Data Mining	3(2, 1)	CSC371
CSC353	Scientific Systems	Computer Graphics	3(2, 1)	MTH231
CSC448		Data Visualization	3(3, 0)	-
CSE344	Web Technologies	Semantic Web	3(2, 1)	-
CSC336		Web Technologies	3(2, 1)	CSC241
CSC303		Mobile Application Development	3(2, 1)	CSC241
CSC432	Enterprise Security Architecture	Information Security	3(3, 0)	CSC339
CSC433		Cryptography and Network Security	3(3, 0)	CSC339

Embarked

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