

13. COURSES OF STUDY AND SCHEME OF ASSESSMENT

B Sc COMPUTER SYSTEMS AND DESIGN

(2015 REGULATIONS)
(Minimum credits to be earned: 134)

Code No.	Course	Hours / week				Credits	Maximum marks			
		Lecture	Tutorial	Practical	CA		FE	Total	CAT	
SEMESTER 1										
15X101	Calculus and its Applications	3	2	0	4	50	50	100	BS	
15X102	Environmental Science and Green Computing	3	0	0	3	50	50	100	BS	
15X103	C Programming	3	0	0	3	50	50	100	PC	
15X104	Analog and Digital Electronics	3	0	0	3	50	50	100	BS	
15X105	English	3	0	0	3	50	50	100	HS	
15X106	C Programming Laboratory	0	0	4	2	100	-	100	PC	
15X107	Web Design Laboratory	0	0	4	2	100	-	100	PC	
15X108	Analog and Digital Electronics Laboratory	0	0	2	1	100	-	100	BS	
15X209	Personality and Character Development	0	0	**	Refer Sem 2 and footnote				MC	
Total 27 hrs		15	2	10	21	550	250	800		
SEMESTER 2										
15X201	Linear Algebra	3	2	0	4	50	50	100	BS	
15X202	Discrete Mathematics	3	2	0	4	50	50	100	BS	
15X203	Computer Architecture	3	0	0	3	50	50	100	PC	
15X204	Data Structures	3	0	0	3	50	50	100	PC	
15X205	Object Oriented Programming with C++	3	0	0	3	50	50	100	PC	
15X206	Mathematical Computing Laboratory	0	0	4	2	100	-	100	BS	
15X207	Data Structures Laboratory	0	0	4	2	100	-	100	PC	
15X208	Object Oriented Programming with C++ Laboratory	0	0	4	2	100	-	100	PC	
15X209	Personality and Character Development	0	0	**	Grade	-	-	-	MC	
Total 31 hrs		15	4	12	23	550	250	800		

CA - Continuous Assessment; FE- Final Examination

** - Total 40 hrs in semesters I & II put together. Grade: Completed / Not Completed.

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SEMESTER 3									
15X301	Probability and Statistics	3	2	0	4	50	50	100	BS
15X302	Software Engineering	3	0	0	3	50	50	100	PC
15X303	Microprocessors and Interfacing	3	0	0	3	50	50	100	PC
15X304	Operating Systems	3	0	0	3	50	50	100	PC
15X305	Advanced Data Structures	3	0	0	3	50	50	100	PC
15X306	Microprocessors and Interfacing Laboratory	0	0	4	2	100	-	100	PC
15X307	Operating Systems Laboratory (Linux)	0	0	4	2	100	-	100	PC
15X308	Advanced Data Structures Laboratory	0	0	4	2	100	-	100	PC
Total 29 hrs		15	2	12	22	550	250	800	
SEMESTER 4									
15X401	Database Management Systems	3	0	0	3	50	50	100	PC
15X402	Computer Networks	3	2	0	4	50	50	100	PC
15X403	Java Programming	3	0	0	3	50	50	100	PC
15X404	System Software	3	2	0	4	50	50	100	PC
15X405	Object Oriented Analysis and Design	3	2	0	4	50	50	100	PC
15X406	Communication Skills	0	0	4	2	100	-	100	HS
15X407	Database Management Laboratory	0	0	4	2	100	-	100	PC
15X408	Java Programming Laboratory	0	0	2	1	100	-	100	PC
Total 31 hrs		15	6	10	23	550	250	800	

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		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
SEMESTER 5									
15X501	Enterprise Computing	3	2	0	4	50	50	100	PC
15X502	Web Technology	3	0	0	3	50	50	100	PC
15X503	Data Mining	3	0	0	3	50	50	100	PC
15X504	Computer Graphics and Multimedia	3	0	0	3	50	50	100	PC
15X___	Elective I	3	2	0	4	50	50	100	PE
15X506	Computer Graphics and Multimedia Laboratory	0	0	4	2	100	-	100	PC
15X507	Web Technology Laboratory	0	0	4	2	100	-	100	PC
15X508	Data Mining Laboratory	0	0	4	2	100	-	100	PC
Total 31 hrs		15	4	12	23	550	250	800	
SEMESTER 6									
15X601	Mobile Computing	3	2	0	4	50	50	100	PC
15X602	Software Testing	3	2	0	4	50	50	100	PC
15X___	Elective II	3	2	0	4	50	50	100	PE
15X___	Elective III	3	2	0	4	50	50	100	PE
15X603	Project Work	0	0	12	6	50	50	100	EEC
Total 32 hrs		12	8	12	22	250	250	500	

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List of Electives

- 15X001 XML and Web Services
- 15X002 Theory of Computing
- 15X003 Service Oriented Architecture
- 15X004 Agent based Intelligent Systems
- 15X005 Machine Learning
- 15X006 Neural Networks
- 15X007 Semantic Web
- 15X008 Cryptography
- 15X009 Cloud Computing
- 15X010 Optimization Techniques
- 15X011 Big data analytics
- 15X012 Graph Theory
- 15X013 Software Patterns
- 15X014 Numerical Analysis
- 15X015 Advanced Database Management Systems
- 15X016 Differential Equations
- 15X017 Embedded System and Design

Labeling & Group of Courses

Professional Core (PC)				
Sl. No.	Course Code	Course Title	L:P:T:C	Preferred Semester
1.	15X104	C PROGRAMMING	3:0:0:3	I
2.	15X106	C PROGRAMMING LABORATORY	0:0:4:2	I
3.	15X107	WEB DESIGN LABORATORY	0:0:4:2	I
4.	15X203	COMPUTER ARCHITECTURE	3:0:0:3	II
5.	15X204	DATA STRUCTURES	3:0:0:3	II
6.	15X205	OBJECT ORIENTED PROGRAMMING WITH C++	3:0:0:3	II
7.	15X206	DATA STRUCTURES LABORATORY	0:0:4:2	II
8.	15X207	OBJECT ORIENTED PROGRAMMING WITH C++ LABORATORY	0:0:4:2	II
9.	15X302	SOFTWARE ENGINEERING	3:0:0:3	III
10.	15X303	MICRO PROCESSORS AND INTERFACING	3:0:0:3	III
11.	15X304	OPERATING SYSTEMS	3:0:0:3	III
12.	15X305	ADVANCED DATA STRUCTURES	3:0:0:3	III
13.	15X306	MICRO PROCESSORS AND INTERFACING LABORATORY	0:0:4:2	III
14.	15X307	OPERATING SYSTEMS LABORATORY (LINUX)	0:0:4:2	III

Sl. No.	Course Code	Course Title	L:P:T:C	Preferred Semester
15.	15X308	ADVANCED DATA STRUCTURES LABORATORY	0:0:4:2	III
16.	15X401	DATABASE MANAGEMENT SYSTEMS	3:0:0:3	IV
17.	15X402	COMPUTER NETWORKS	3:2:0:4	IV
18.	15X403	JAVA PROGRAMMING	3:0:0:3	IV
19.	15X404	SYSTEM SOFTWARE	3:2:0:4	IV
20.	15X405	OBJECT ORIENTED ANALYSIS AND DESIGN	3:2:0:4	IV
21.	15X407	DATABASE MANAGEMENT LABORATOY	0:0:4:2	IV
22.	15X408	JAVA PROGRAMMING LABORATORY	0:0:2:1	IV
23.	15X501	ENTERPRISE COMPUTING	3:2:0:4	V
24.	15X502	WEB TECHNOLOGY	3:0:0:3	V
25.	15X503	DATA MINING	3:0:0:3	V
26.	15X504	COMPUTER GRAPHICS AND MULTIMEDIA	3:0:0:3	V
27.	15X505	COMPUTER GRAPHICS AND MULTIMEDIA LABORATORY	0:0:4:2	V
28.	15X506	WEB TECHNOLOGY LABORATORY	0:0:4:2	V
29.	15X507	DATA MINING LABORATORY	0:0:4:2	V
30.	15X601	MOBILE COMPUTING	3:2:0:4	VI
31.	15X602	SOFTWARE TESTING	3:2:0:4	VI

Professional Elective (PE)				
Sl. No.	Course Code	Course Title	L:P:T:C	Preferred Semester
1.	15X001	XML AND WEB SERVICES	3:2:0:4	V
2.	15X002	THEORY OF COMPUTING	3:2:0:4	V
3.	15X003	SERVICE ORIENTED ARCHITECTURE	3:2:0:4	VI
4.	15X004	AGENT BASED INTELLIGENT SYSTEMS	3:2:0:4	VI
5.	15X005	MACHINE LEARNING	3:2:0:4	VI
6.	15X006	NEURAL NETWORKS	3:2:0:4	VI
7.	15X007	SEMANTIC WEB	3:2:0:4	VI
8.	15X008	CRYPTOGRAPHY	3:2:0:4	V
9.	15X009	CLOUD COMPUTING	3:2:0:4	VI
10.	15X010	OPTIMIZATION TECHNIQUES	3:2:0:4	V
11.	15X011	BIG DATA ANALYTICS	3:2:0:4	VI
12.	15X012	GRAPH THEORY	3:2:0:4	VI
13.	15X013	SOFTWARE PATTERNS	3:2:0:4	VI
14.	15X014	NUMERICAL ANALYSIS	3:2:0:4	VI

15.	15X015	ADVANCED DATABASE MANAGEMENT SYSTEMS	3:2:0:4	V
16	15X16	DIFFERENTIAL EQUATIONS	3:2:0:4	V
17	15X17	EMBEDDED SYSTEM AND DESIGN	3:2:0:4	VI

Basic Sciences (BS)				
Sl. No.	Course Code	Course Title	L:P:T:C	Preferred Semester
1.	15X101	CALCULUS AND ITS APPLICATIONS	3:2:0:4	I
2.	15X103	ENVIRONMENTAL SCIENCE AND GREEN COMPUTING	3:0:0:3	I
3.	15X105	ANALOG AND DIGITAL ELECTRONICS	3:0:0:3	I
4.	15X108	ANALOG AND DIGITAL ELECTRONICS LABORATORY	0:0:2:1	I
5.	15X201	LINEAR ALGEBRA	3:2:0:4	II
6.	15X202	DISCRETE MATHEMATICS	3:2:0:4	II
7.	15X208	MATHEMATICAL COMPUTING LABORATORY	0:0:4:2	II
8.	15X301	PROBABILITY AND STATISTICS	3:2:0:4	III

Humanities and Social Sciences(HS)				
Sl. No.	Course Code	Course Title	L:P:T:C	Preferred Semester
1.	15X102	ENGLISH	3:0:0:3	I
2	15X406	COMMUNICATION SKILLS	0:0:4:2	IV

Employment Enhancement Courses (EEC)				
Sl. No.	Course Code	Course Title	L:P:T:C	Preferred Semester
1.	15X603	PROJECT WORK	0:0:12:6	VI