13. COURSES OF STUDY AND SCHEME OF ASSESSMENT – 2012 REGULATIONS

M.Sc. THEORETICAL COMPUTER SCIENCE

(Total Credits to be earned: 230)

Course Code	Course Title	Hours/Week			Credit	Maximum marks		
		Lecture	Tutorial	Practical		CA	FE	Total
SEMESTER 1								
THEORY								
12XT11	ENGLISH FOR PROFESSIONAL SKILLS	3	0	0	3	50	50	100
12XT12	MATHEMATICAL METHODS	3	2	0	4	50	50	100
12XT13	MATERIALS SCIENCE	4	0	0	4	50	50	100
12XT14	ANALOG AND DIGITAL ELECTRONICS	4	0	0	4	50	50	100
12XT15	C PROGRAMMING	3	0	0	3	50	50	100
PRACTICAL								
12XT16	MATERIALS SCIENCE AND DIGITAL ELECTRONICS LAB	0	0	4	2	100	-	100
12XT17	C PROGRAMMING LAB	0	0	3	2	100	-	100
12XT18	ENGINEERING GRAPHICS AND GEOMETRIC MODELLING	2	0	3	4	100	-	100
	Total 31 Hrs	**19**	**2**	**10**	**26**			
SEMESTER 2								
THEORY								
12XT21	DISCRETE STRUCTURES	4	0	0	4	50	50	100
12XT22	COMPLEX VARIABLES AND TRANSFORMS	3	2	0	4	50	50	100
12XT23	PROBABILITY AND STATISTICS	3	2	0	4	50	50	100
12XT24	DATA STRUCTURES AND ALGORITHMS	4	0	0	4	50	50	100
12XT25	OBJECT ORIENTED PROGRAMMING	4	0	0	4	50	50	100
PRACTICAL								
12XT26	MATHEMATICAL COMPUTING AND STATISTICAL PACKAGES L AB	0	0	3	2	100	-	100
12XT27	DATA STRUCTURES LAB	0	0	3	2	100	-	100
12XT28	OBJECT ORIENTED PROGRAMMINGLAB (C++ AND PYTHON)	0	0	3	2	100	-	100
	Total 31 Hrs	**18**	**4**	**9**	**26**			

Course Code	Course Title	Hours/Week			Credit	Maximum marks		
		Lecture	Tutorial	Practical		CA	FE	Total
SEMESTER 3								
THEORY								
12XT31	STOCHASTIC PROCESSES	3	2	0	4	50	50	100
12XT32	GRAPH THEORY	4	0	0	4	50	50	100
12XT33	ABSTRACT ALGEBRA	4	0	0	4	50	50	100
12XT34	ADVANCED DATA STRUCTURES	4	0	0	4	50	50	100
12XT35	COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE PROGRAMMING	4	0	0	4	50	50	100
PRACTICAL								
12XT36	JAVA PROGRAMMING LAB	2	0	3	4	100	-	100
12XT37	ADVANCED DATA STRUCTURES LAB	0	0	3	2	100	-	100
12XT38	ASSEMBLY LANGUAGE PROGRAMMING LAB	0	0	3	2	100	-	100
	Total 32 Hrs	**21**	**2**	**9**	**28**			
SEMESTER 4								
THEORY								
12XT41	LINEAR ALGEBRA AND NUMERICAL ANALYSIS	3	2	0	4	50	50	100
12XT42	COMPUTATIONAL NUMBER THEORY AND CRYPTOGRAPHY	4	0	0	4	50	50	100
12XT43	OPTIMIZATION TECHNIQUES	3	2	0	4	50	50	100
12XT44	OPERATING SYSTEMS	3	0	0	3	50	50	100
12XT45	COMPUTER NETWORKS AND TCP/IP	4	0	0	4	50	50	100
PRACTICAL								
12XT46	OPTIMIZATION TECHNIQUES LAB	0	0	3	2	100	-	100
12XT47	OPERATING SYSTEMS LAB (LINUX)	2	0	3	4	100	-	100
12XT48	COMPUTER NETWORKS AND TCP/IP LAB	0	0	3	2	100	-	100
	Total 32 Hrs	**19**	**4**	**9**	**27**			

CA – Continuous Assessment **FE - Final Examination**

Course Code	Course Title	Hours/Week	Credit	Maximum marks

		Lecture	Tutorial	Practical		CA	FE	Total
SEMESTER 5								
THEORY								
12XT51	THEORY OF COMPUTING	4	0	0	4	50	50	100
12XT52	SOFTWARE ENGINEERING	4	0	0	4	50	50	100
12XT53	COMPUTER GRAPHICS AND VISUALIZATION	4	0	0	4	50	50	100
12XT54	DATABASE DESIGN	4	0	0	4	50	50	100
12XT55	DESIGN AND ANALYSIS OF ALGORITHMS	4	0	0	4	50	50	100
PRACTICAL								
12XT56	COMPUTER GRAPHICS AND VISUALIZATION LAB	0	0	3	2	100	-	100
12XT57	RDBMS LAB	0	0	3	2	100	-	100
12XT58	DESIGN AND ANALYSIS OF ALGORITHMS LAB	0	0	3	2	100	-	100
	Total 29 Hrs	**20**	**0**	**9**	**26**			
SEMESTER 6								
THEORY								
12XT61	MACHINE LEARNING	3	0	2	4	50	50	100
12XT62	SECURITY IN COMPUTING	4	0	0	4	50	50	100
12XT63	PRINCIPLES OF COMPILER DESIGN	4	0	0	4	50	50	100
12XT64	ARTIFICIAL INTELLIGENCE	3	0	0	3	50	50	100
12XT65	ELECTIVE – I	3	0	2	4	50	50	100
PRACTICAL								
12XT66	SECURITY IN COMPUTING LAB	0	0	3	2	100	-	100
12XT67	COMPILER DESIGN LAB	0	0	3	2	100	-	100
12XT68	ARTIFICIAL INTELLIGENCE LAB	0	0	3	2	100	-	100
	Total 30 Hrs	**17**	**0**	**13**	**25**			
Course Code	Course Title	Hours/Week			Credit	Maximum marks		
		Lecture	Tutorial	Practical		CA	FE	Total
SEMESTER 7								
12XT01	PROJECT WORK I – INDUSTRY / RESEARCH PROJECT	**0**	**0**	**-**	**12**	50	50	100

SEMESTER 8								
THEORY								
12XT81	GAME THEORY	4	0	0	4	50	50	100
12XT82	PARALLEL AND DISTRIBUTED COMPUTING	3	0	0	3	50	50	100
12XT83	MATHEMATICAL MODELLING	4	0	0	4	50	50	100
12XT84	ELECTIVE – II	3	0	2	4	50	50	100
12XT85	ELECTIVE – III (SELF STUDY)	3	0	2	4	50	50	100
PRACTICAL								
12XT86	PARALLEL AND DISTRIBUTED COMPUTING LAB	0	0	3	2	100	-	100
12XT87	MATHEMATICAL MODELLING LAB	0	0	3	2	100	-	100
12XT88	RESEARCH SPECIALIZATION LAB	0	1	3	2	100	-	100
	Total 31 Hrs	**17**	**1**	**13**	**25**			
SEMESTER 9								
THEORY								
12XT91	INTELLIGENT INFORMATION RETRIEVAL	3	0	0	3	50	50	100
12XT92	COMPUTATIONAL GEOMETRY	3	0	0	3	50	50	100
12XT93	DATA MINING	3	0	0	3	50	50	100
12XT94	ELECTIVE – IV	3	0	2	4	50	50	100
12XT95	ELECTIVE – V (SELF STUDY)	3	0	2	4	50	50	100
PRACTICAL								
12XT96	INTELLIGENT INFORMATION RETRIEVAL LAB	0	0	3	2	100	-	100
12XT97	COMPUTATIONAL GEOMETRY LAB	0	0	3	2	100	-	100
12XT98	DATA MINING LAB	0	0	3	2	100	-	100
	Total 28 Hrs	**15**	**0**	**13**	**23**			
SEMESTER 10								
12XT02	PROJECT WORK II – INDUSTRY / RESEARCH PROJECT	**0**	**0**	**-**	**12**	50	50	100

CA – Continuous Assessment **FE - Final Examination**

ELECTIVES

12XTE1 PRINCIPLES OF PROGRAMMING LANGUAGES

12XTE2 APPROXIMATION ALGORITHMS

12XTE3 NATURAL LANGUAGE PROCESSING

12XTE4 RANDOMIZED ALGORITHMS

12XTE5 ADVANCED COMPUTER GRAPHICS

12XTE6 MULTI PARADIGM PROGRAMMING LANGUAGES

12XTE7 WIRELESS NETWORKS
12XTE8 PROGRAM SEMANTIC ANALYSIS
12XTE9 SEMANTIC WEB
12XTEA PERVASIVE COMPUTING
12XTEB NETWORK ALGORITHMICS
12XTEC SOFTWARE PATTERNS
12XTED CLOUD COMPUTING
12XTEE SOFTWARE PROCESS MANAGEMENT
12XTEF SOCIAL NETWORK ANALYSIS
12XTEG DATA COMPRESSION