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UNIVERSITY BAREILLY

BUILDING VIBRANT PERSONALITIES

COURSE STRUCTURE

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NAAC CRITERIA 1.2.2

Invertis Village, Highway NH-24,
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UNIVERSITY BAREILLY
Established by Govt. of U.P. u/s 2F of UGC Act, 1956 vide U.P. Act 22 of 2010.

Scheme of Instruction & Syllabi

of

M.Tech. (Computer Science & Engineering)

(Effective From 2016-2017)

Invertis Institute of Engineering &Technology

INVERTIS UNIVERSITY

Invertis Village,Bareilly-Lucknow NH-24, Bareilly

YEAR I, SEMESTER-I

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				SUBJECT TOTAL	Credits
						SESSIONAL EXAM.			E-SEM		
			L	T	P	CT	TA	SUB TOTAL			
1	MCS-101	Advanced Computer Architecture	3	1	0	20	10	30	70	100	4
2	MCS-102	Foundation of Computer Science	3	1	0	20	10	30	70	100	4
3	MCS-103	Advanced Computer networks	3	1	0	20	10	30	70	100	4
4	MCS-104	Distributed Systems	3	1	0	20	10	30	70	100	4
5	MCS-105	Cloud Computing	3	1	0	20	10	30	70	100	4
6	MCS-151	Colloquium & Research Review Paper-I	0	2	0		-	50	-	50	2
Total			15	7	0	-	-	-	-	550	22

YEAR I, SEMESTER-II

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				SUBJECT TOTAL	Credits
						SESSIONAL EXAM.			E-SEM		
			L	T	P	CT	TA	SUB TOTAL			
1	MCS-201	Advanced Database Systems	3	1	0	20	10	30	70	100	4
2	MCS-202	Parallel Computing	3	1	0	20	10	30	70	100	4
3	MCS-203	Mobile Computing	3	1	0	20	10	30	70	100	4
4	MCS-204	Object Oriented Modeling	3	1	0	20	10	30	70	100	4
5		Elective 1	3	1	0	20	10	30	70	100	4
6	MCS-251	Colloquium & Research Review Paper-II	0	2	0		-	50	-	50	2
Total			15	7	0	-	-	-	-	550	22

YEAR II, SEMESTER-III

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				SUBJECT TOTAL	Credits
						SESSIONAL EXAM.			E-SEM		
			L	T	P	CT	TA	SUB TOTAL			
1		Elective 2	3	1	0	20	10	30	70	100	4
2		Elective 3	3	1	0	20	10	30	70	100	4
3	MCS351	Colloquium & Research Review Paper-III	0	2	0	-	-	50	-	50	2
4	MCS393	Preliminary Thesis	0	8	0	-	-	200	-	200	8
Total			6	12	0	-	-	-	-	450	18

YEAR II, SEMESTER-IV

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				SUBJECT TOTAL	Credits
						SESSIONAL EXAM.			E-SEM		
			L	T	P	CT	TA	SUB TOTAL			
	MCS-394	THESIS	0	16	0	-	-	100	300	400	16
Total			0	16	0	-	-	-	-	400	16

ELECTIVE-I

MCS-211 ADVANCED SOFTWARE ENGINEERING
MCS-212 WIRLESS SENSOR NETWORKS
MCS-213 NETWORK SECURITY & CRYPTOGRAPHY
MCS-214 MACHINE LEARNING
MCS-215 MULTIMEDIA SYSTEMS

ELECTIVE –II

MCS-321 SOFTWARE PROJECT MANAGEMENT
MCS-322 DESIGN AND ANALYISIS OF ALGORITHMS
MCS-323 INTELLECTUAL PROPERTY RIGHTS
MCS-324 UNIX NETWORK PROGRAMMING
]MCS-325 COMPLIER TECHNIQUES

ELECTIVE-III

MCS-331 REAL TIME SYSTEMS
MCS-332 NETWORKING PROTOCOLS
MCS-333 EMERGING DATABASE TECHNOLOGIES
MCS-334 DATA WAREHOUSING & MINING

INVERTIS UNIVERSITY, BAREILLY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING SCHEME OF INSTRUCTION AND DETAILED SYLLABUS OF B.TECH. PROGRAM IN COMPUTER SCIENCE AND ENGINEERING.

Effective from the batches admitted 2016-2017 and onwards

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VISION-

To be renowned itself as a reputed organization in engineering education. Creating knowledge of fundamental principles and innovation technologies through research within the core areas of computer science and also in inter- disciplinary topics.

MISSION-

- Providing learner centric Teaching learning process in excellent infrastructure for making the graduates industry ready with social ethics.
- To empower the students with the required skills to solve the complex technological problems of modern society and also provide them with a framework for promoting collaboration and multidisciplinary activities.
- To impart high quality professional training at the postgraduate and undergraduate level with an emphasis on basic principles of computer science and engineering.

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PROGRAM EDUCATIONAL OBJECTIVES (PEO):

PEO1	To prepare students to excel in Computer Science and Engineering program through quality education enabling them to succeed in computing industry profession.
PEO2	To provide students with a solid foundation in mathematics, engineering, basic science fundamentals required to solve computing problems.
PEO3	To expose students to tools and techniques of Computer Science and Engineering so that they can comprehend, analyze, design and create innovative computing products and solutions for real life problems.
PEO4	To inculcate in students multidisciplinary approach, professional attitude and ethics, communication and teamwork skills, and ability to relate computer engineering issues with social awareness.
PEO5	To develop professional skills in students that prepares them for immediate employment and for lifelong learning in advanced areas of computer science and related fields.
PEO6	To prepare students which are an asset to the country, who can contribute towards nation building.
PEO7	To imbibe such qualities in students which enable them to be successful entrepreneurs.
PEO8	Apply probability, statistics, mathematics through differential and integral calculus, sciences including applications appropriate to the Computer Science & Engineering topics.

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PROGRAM OUTCOMES(PO): At the end of the program the student will be able to:

PO1	Apply knowledge of mathematics, science, and engineering in the design and development of software systems
PO2	Perform experiments on different software packages either obtain from external parties or developed by themselves and analyse the experimental results.
PO3	Design and develop software projects given their specifications and within performance and cost constraints.
PO4	Understand professional and ethical responsibilities and analyze the impact of computing on individuals, organizations, and the society.
PO5	Communicate effectively in oral, written and graphical form.
PO6	Work cooperatively, responsibly, creatively, and respectfully in teams.
PO7	An ability to apply knowledge of mathematics, science and engineering.
PO8	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
PO9	An ability to identify opportunities for establishing an enterprise.

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PO8	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
PO9	An ability to identify opportunities for establishing an enterprise.

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B.TECH. I YEAR, II SEMESTER

S. No.	Course Code	SUBJECT	L	T	P	Credits
1	BAS-203	Mathematics-II	3	1	0	4
2	BME-202 or BAS-202	Engg. Mechanics -I Or Engg. Chemistry	3	1	0	4
3	BCS-201 or BEE-201	Computer Fundamentals & Programming in C Or Electrical Engg.	3	1	0	4
4	BHU-201 or BEC-201	Professional Communication Or Electronics Engineering	3	1	0	4
5	BAS-201	Engg. Physics-II	3	1	0	4
6	BAS-204 or BME-201	Environment & Ecology Or Manufacturing Process	2	0	0	2
7	BCE-251 Or BME-251	Engg. Drawing & Computer Graphics Or Workshop Practice	0	1	3	2
8	BME-252 Or BAS-252	Engg. Mechanics Lab Or Engg. Chemistry Lab	0	0	2	1
9	BCS-251 Or BEE-251	Computer Fundamentals & Programming in C Lab Or Electrical Engg. Lab	0	0	2	1
10	BHU-251 Or BAS-251	Professional Communication Lab Or Physics Lab	0	0	2	1
11	GP-201	General Proficiency	-	-	-	1
		Total	17	6	9	28

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B.Tech.YEAR II, SEMESTER III

S. No.	Course Code	SUBJECTS	HOURS			EVALUATION SCHEME					SUBJECT TOTAL	Credit
						SESSIONAL EXAM.				END SEM		
			L	T	P	CT	TA	AT	TOTAL			
THEORY												
1	BHU-302/BHU-301	Industrial Sociology / Industrial Psychology	2	1	0	10	5		15	35	50	2
2	BAS-301	Mathematics-III	3	1	0	20	10		30	70	100	4
3	BCS-301	Data Structures	3	1	0	20	10		30	70	100	4
4	BCS-302	Discrete Structures	3	1	0	20	10		30	70	100	4
5	BCS-303	Digital Logic Design	3	1	0	20	10		30	70	100	4
6	BCS-304	IT Infrastructure and its Management	3	1	0	20	10		30	70	100	4
PRACTICALS AND PROJECTS												
7s	BCS-351	Data structures Lab	0	0	2	-	-		10	15	25	1
8	BCS-353	Digital Logic Design Lab	0	0	2	-	-		10	15	25	1
9	BCS-354	IT Infrastructure Lab	0	0	2	-	-		10	15	25	1
10	GP-301	General Proficiency	-	-	-	-	-		50	-	50	1
		TOTAL	17	6	6				245	430	675	26

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B.Tech.YEAR II, SEMESTER IV

S. No.	Course Code	SUBJECTS	HOURS			EVALUATION SCHEME					SUBJECT TOTAL	Credit
						SESSIONAL EXAM.				END SEM.		
			L	T	P	CT	TA	AT	TOTAL			
THEORY												
1	BHU-402/BHU-401	Industrial Sociology / Industrial Psychology	2	1	0	10	5		15	35	50	2
2	BCS-401	Computer Organization & Introduction to Microprocessor	3	1	0	20	10		30	70	100	4
3	BCS-402	Design and Analysis of Algorithms	3	1	0	20	10		30	70	100	4
4	BCS-403	Operating Systems	3	1	0	20	10		30	70	100	4
5	BCS-404	Unix & Shell Programming	3	1	0	20	10		30	70	100	4
6	BCS-407	Object Oriented Techniques	3	1	0	20	10		30	70	100	4
PRACTICALS AND PROJECTS												
7	BCS-451	Computer Organization & Introduction to Microprocessor Lab	0	0	2	-	-		10	15	25	1
8	BCS-452	Design and Analysis of Algorithms Lab	0	0	2	-	-		10	15	25	1
9	BCS-454	Unix & Shell Programming Lab	0	0	2	-	-		10	15	25	1
10	GP-401	General Proficiency	-	-	-	-	-		50	-	50	1
		TOTAL	17	6	6				245	430	675	26

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B.Tech. YEAR III, SEMESTER V

S. No.	Course Code	SUBJECTS	HOURS			EVALUATION SCHEME					SUBJECT TOTAL	Credit
						SESSIONAL EXAM.				END SEM.		
			L	T	P	CT	TA	AT	TOTAL			
THEORY												
1	BCS-501	Theory of Computation	3	1	0	20	10		30	70	100	4
2	BCS-502	Data Base Management System	3	1	0	20	10		30	70	100	4
3	BCS-503	Java Programming	3	1	0	20	10		30	70	100	4
4	BCS-504	Software Engineering	3	1	0	20	10		30	70	100	4
5	BCS-051-054	CS Elective-I	3	1	0	20	10		30	70	100	4
6	BOE-501-504	Open Elective-1	2	1	0	10	5		15	35	50	2
PRACTICALS AND PROJECTS												
7	BCS- 552	DBMS Lab	0	0	2	-	-		10	15	25	1
8	BCS-553	Java Programming Lab	0	0	2	-	-		10	15	25	1
9	BCS-554	Software Engineering Lab	0	0	2	-	-		10	15	25	1
10	GP-501	General Proficiency	-	-	-	-	-		50	-	50	1
		TOTAL	17	6	6				245	430	675	26

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B.Tech. YEAR III, SEMESTER VI

S. No.	Course Code	SUBJECTS	HOURS			EVALUATION SCHEME					SUBJECT TOTAL	Credit
						SESSIONAL EXAM.				END SEM.		
			L	T	P	CT	TA	AT	TOTAL			
THEORY												
1	BCS-601	Computer Networks	3	1	0	20	10		30	70	100	4
2	BCS-602	Computer Graphics	3	1	0	20	10		30	70	100	4
3	BCS-603	Compiler Design	2	1	0	10	5		15	35	50	2
4	BCS-604	Internet Technology	3	1	0	20	10		30	70	100	4
5		CS Elective-II	3	1	0	20	10		30	70	100	4
6		CS Elective-III	3	1	0	20	10		30	70	100	4
PRACTICALS AND PROJECTS												
7	BCS-651	Computer Networks Lab	0	0	2	-	-		10	15	25	1
8	BCS-652	Computer Graphics Lab	0	0	2	-	-		10	15	25	1
9	BCS-654	Internet Technology Lab	0	0	2	-	-		10	15	25	1
10	GP-601	General Proficiency	-	-	-	-	-		50	-	50	1
		TOTAL	17	6	6				245	430	675	26

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List of Electives

YEAR III, SEMESTER V

OPEN ELECTIVE-I

BOE-501 Total Quality Management
BOE-502 Human Computer Interaction
BOE-503 Entrepreneurship Development
BOE-504 Non-Conventional Energy Resource
BOE-505 Operational Research

CS ELECTIVE-I

BCS-051 Principles of Programming Language
BCS-052 Fuzzy logic
BCS-053 Multimedia Systems
BCS-054 Soft Computing
BCS-055 Cloud Architecture

YEAR III, SEMESTER VI

CS ELECTIVE-II

BCS-061 Software Testing
BCS-062 Graph Theory
BCS-063 System Programming
BCS-064 PHP
BCS-065 Linux Administration

CS ELECTIVE-III

BCS-066 Software Project Management
BCS-067 Pattern Recognition
BCS-068 Parallel Algorithm
BCS-069 Natural Language Processing
BCS-070 ERP Systems

YEAR IV, SEMESTER VII

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CS ELECTIVE-IV

BCS-071 Embedded and Real Time Systems
BCS-072 Data Compression
BCS-073 Neural Networks
BCS-074 OS for Smart Devices (Android)
BCS-075 Client Server Computing

YEAR IV, SEMESTER VIII

CS ELECTIVE-V

BCS-081 Distributed Database
BCS-082 Software Quality Management
BCS-083 Simulation and Modeling
BCS-084 Bioinformatics
BCS-085 Digital Image Processing

CS ELECTIVE-VI

BCS-086 Computational Geometry
BCS-087 Computational Complexity
BCS-088 IT in Forensic Science
BCS-089 Advanced Computer Network
BCS-090 Big Data Analysis

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B.Tech. YEAR IV, SEMESTER VII

S. No.	Course Code	SUBJECTs	HOURS			EVALUATION SCHEME					SUBJECT TOTAL	Credit
						SESSIONAL EXAM.				END SEM.		
			L	T	P	CT	TA	AT	TOTAL			
THEORY												
1	BCS-701	Advanced Computer Architecture	3	1	0	20	10		30	70	100	4
2	BCS-702	Artificial Intelligence and Expert Systems	3	1	0	20	10		30	70	100	4
3	BCS-703	Data Warehouse and Data Mining	3	1	0	20	10		30	70	100	4
4	BCS-704	Distributed Systems	3	1	0	20	10		30	70	100	4
5		CS Elective-IV	3	1	0	20	10		30	70	100	4
PRACTICALS AND PROJECTS												
7	BCS-751	Industrial Training Viva-Voce	0	0	2	-	-		25		25	1
8	BCS-752	Artificial Intelligence Lab	0	0	2	-	-		10	15	25	1
9	BCS-753	Project	0	0	4	-	-		25	25	50	2
10	BCS-754	Seminar	0	0	2	-	-		25	-	25	1
11	GP-701	General Proficiency	-	-	-	-	-		25	-	25	1
		TOTAL	17	6	6				260	390	650	26

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B.Tech. YEAR IV, SEMESTER VIII

S. No.	Course Code	SUBJECTs	HOURS			EVALUATION SCHEME					SUBJECT TOTAL	Credit
						SESSIONAL EXAM.				END SEM.		
			L	T	P	CT	TA	AT	TOTAL			
THEORY												
1	BCS-801	Cryptography and Network Security	3	1	0	20	10		30	70	100	4
2	BCS-802	.NET Framework	2	1	0	10	5		15	35	50	2
3	BCS-803	Mobile Computing	3	1	0	20	10		30	70	100	4
4		CS Elective-V	3	1	0	20	10		30	70	100	4
5		CS Elective-VI	3	1	0	20	10		30	70	100	4
PRACTICALS AND PROJECTS												
7	BCS-851	Cryptography and Network Security Lab	0	0	2	-	-		10	15	25	1
8	BCS-852	.NET Lab	0	0	2	-	-		10	15	25	1
9	BCS-853	Mobile Computing Lab	0	0	2	-	-		10	15	25	1
10	BCS-854	Project	0	0	6	-	-		50	50	100	4
11	GP-801	General Proficiency	-	-	-	-	-		25	-	25	1
		TOTAL	14	5	6				240	410	650	26

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Scheme of Instruction & Syllabi

of

(Integrated Course)

B.Tech(CSE) + MBA

(Effective From 2016-2017)

Invertis Institute of Engineering &Technology

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STUDY & EVALUATION SCHEME

Integrated B. Tech. & M.Tech.(Computer Science & Engineering)

YEAR II, SEMESTER-III

S.NO.	COURSE CODE	SUBJECTS	PERIODS			Evaluation Scheme				SUBJECT TOTAL	CREDITS
						SESSIONAL EXAM.					
			L	T	P	CT	TA	TOTAL	E-SEM		
THEORY											
1	BHU-302/BHU-301	Industrial Sociology / Industrial Psychology	2	1	0	10	5	15	35	50	2
2	BAS-301/BOE-031-038	Mathematics-III /Science elective	3	1	0	20	10	30	70	100	4
3	BEC-305	Digital Logic Design	3	1	0	20	10	30	70	100	4
4	BCS-301	Data Structures	3	1	0	20	10	30	70	100	4
5	BCS-302	Discrete Structures	3	1	0	20	10	30	70	100	4
6	BIT-301	IT Infrastructure and its Management	3	1	0	20	10	30	70	100	4
PRACTICALS & PROJECTS											
7	BEC-355	Digital Logic Design Lab	0	0	2	-	-	10	15	25	1
8	BCS-351	Data structures Lab	0	0	2	-	-	10	15	25	1
9	BIT-351	IT Infrastructure and its Management Lab	0	0	2	-	-	10	15	25	1
10	GP-301	General Proficiency	-	-	-	-	-	25	-	25	1
		Total	17	6	6	110	55	220	430	650	26

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STUDY & EVALUATION SCHEME

Integrated B. Tech. & M.Tech.(Computer Science & Engineering)

YEAR II, SEMESTER-IV

S.NO.	COURSE CODE	SUBJECTS	PERIODS			Evaluation Scheme				SUBJECT TOTAL	CREDITS
						SESSIONAL EXAM.					
			L	T	P	CT	TA	Total	End SEM		
THEORY											
1	BHU-402 /BHU-401	Industrial Sociology / Industrial Psychology	2	1	0	10	5	15	35	50	2
2	BAS-401 /BOE-041-048	Mathematics-III /Science elective	3	1	0	20	10	30	70	100	4
3	BCS-401	Computer Organization & Introduction to Microprocessor	3	1	0	20	10	30	70	100	4
4	BCS-402	Design and Analysis of Algorithms	3	1	0	20	10	30	70	100	4
5	BCS-403	Operating System	3	1	0	20	10	30	70	100	4
6	BCS-404	Unix & Shell Programming	3	1	0	20	10	30	70	100	4
PRACTICALS & PROJECTS											
7	BCS-451	Computer Organization & Introduction to Microprocessor	0	0	2	-	-	10	15	25	1
8	BCS-452	Design and Analysis of algorithms lab	0	0	2	-	-	10	15	25	1
9	BCS-454	Unix & Shell Programming Lab	0	0	2	-	-	10	15	25	1
10	GP-401	General Proficiency	-	-	-	-	-	25	-	25	1
		Total	**17**	**6**	**6**			**220**	**430**	**650**	**26**

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STUDY & EVALUATION SCHEME
B. Tech. Computer Science & Engineering

YEAR III, SEMESTER-V

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				SUBJECT TOTAL	Credits
						SESSIONAL EXAM.			E-SEM		
			L	T	P	CT	TA	TOTAL			
THEORY											
1	BCS-501	Theory of Computation	3	1	0	20	10	30	70	100	4
2	BCS-502	DBMS	3	1	0	20	10	30	70	100	4
3	BCS-503	OOPS with java	3	1	0	20	10	30	70	100	4
4	BCS-504	Software Engineering	3	1	0	20	10	30	70	100	4
5	BCS-505	Principles of Programming Language	2	1	0	10	5	15	35	50	2
		OE-I	2	1	0	10	5	15	35	50	2
PRACTICAL/DESIGN/DRAWING											
7	BCS-552	DBMS Lab	0	0	2	-	-	10	15	25	1
8	BCS-553	OOPS with java Lab	0	0	2	-	-	10	15	25	1
9	BCS-554	Software Engineering Lab	0	0	2	-	-	10	15	25	1
10	BCS-555	Seminar	0	0	2	-	-	25	-	25	1
11	GP-501	General Proficiency	-	-	-	-	-	25	-	25	1
Total			16	6	8	100	50	230	395	625	25

OPEN ELECTIVE-I

BOE-501 Total Quality Management
BOE-502 Human Computer Interaction
BOE-503 Entrepreneurship Development
BOE-504 Non-Conventional Energy Resources

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STUDY & EVALUATION SCHEME
B. Tech. Computer Science & Engineering

YEAR III, SEMESTER-VI

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme					Credits
						SESSIONAL EXAM.			E-SEM/ TOTAL		
			L	T	P	CT	TA	TOTAL			
THEORY											
1	BCS-601	Computer Networks	3	1	0	20	10	30	70	100	4
2	BCS-602	Computer Graphics	3	1	0	20	10	30	70	100	4
3	BCS-603	Compiler	3	1	0	20	10	30	70	100	4
4	BIT-601	Internet Technology	2	1	0	10	5	15	35	50	2
5		CS Elective-I	3	1	0	20	10	30	70	100	4
6		CS Elective-II	2	1	0	10	5	15	35	50	2
PRACTICAL/DESIGN/DRAWING											
6	BCS-651	Computer Networks Lab	0	0	2	-	-	10	15	25	1
7	BCS-652	Computer Graphics Lab	0	0	2	-	-	10	15	25	1
8	BCS-653	Compiler Lab	0	0	2	-	-	10	15	25	1
9	BIT-651	Internet Technologies Lab	0	0	2	-	-	10	15	25	1
10	GP-601	General Proficiency	-	-	-	-	-	25	-	25	1
Total			16	6	8	100	50	215	410	625	25

CS ELECTIVE-I
BIT-061 Software Testing
BCS-061 Graph Theory
BCS-062 System Programming
BCS-063 Operational Research

CS ELECTIVE-II
BIT-062 Software project Management
BCS-064 Pattern Recognition
BCS-065 Parallel Algorithm
BCS-066 Object Oriented Techniques

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STUDY & EVALUATION SCHEME

Integrated B. Tech.(CS) & MBA

Year IV, Semester VII

S. No.	Course Code	Subject	Period			Evaluation Scheme				Subject Total	Credits
						Sessional Exam.			E-SEM		
			L	T	P	CT	TA	TOTAL			
1	BCS-701	Computer Architecture	3	1	0	20	10	30	70	100	4
2	BCS-702	Artificial Intelligence	3	1	0	20	10	30	70	100	4
3	MBA-102	Market Science	4	1	0	20	10	30	70	100	4
4	MBA-104	Recording & Analysis of Business Operations	4	1	0	20	10	30	70	100	4
5	MBA-105	Micro Economics & Economic Planning	4	1	0	20	10	30	70	100	4
6	MBA-101	Management-Micro and Macro	4	1	0	20	10	30	70	100	4
7	BCS-751	Industrial Training viva-voce	0	0	2			0	0	25	1
8	**GP-701**	**General Proficiency**	-	-	-	-	-	-	-	25	1
Total			22	6	2	-	-	-	-	650	26

STUDY & EVALUATION SCHEME

Integrated B. Tech.(CS) & MBA

Year IV, Semester VIII

Course: MBA Full Time

Sl. No.	Paper Code	Paper Name	L+T+P	Maximum marks			Credit
1	MBA201	Management Science	4+1+0	70	30	100	4
2	MBA202	Market Intelligence	4+1+0	70	30	100	4
3	MBA203	Identification, addition and delivery of Value	4+1+0	70	30	100	4
4	MBA204	Human Resource – Development	4+1+0	70	30	100	4
5	MBA205	Cases in Finance and Business Laws	4+1+0	70	30	100	4
6	MBA206	Event Management	4+1+0	70	30	100	4
		Total		420	180	600	24

After 8th Semester, students will go for 8 weeks summer training compulsorily in Public Sector undertakings or Private Sector, known as Hands on Experience.

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STUDY & EVALUATION SCHEME

Integrated B. Tech.(CS) & MBA

Year V, Semester IX

Sl. No.	Paper Code	Paper Name	L+T+P	Maximum marks			Credit
1	MBA301	Strategies - Business, Marketing and HRM	4+1+0	70	30	100	4
2	MBA302	India at a Glance	4+1+0	70	30	100	4
3		Spec. Group 1 Paper 1	4+1+0	70	30	100	4
4		Spec. Group 1 Paper 2	4+1+0	70	30	100	4
5		Spec. Group 2 Paper 1	4+1+0	70	30	100	4
6		Spec. Group 2 Paper 2	4+1+0	70	30	100	4
7	MBA396	Hands on Experience Viva				100	2
		Total		350	150	700	26

Institutional Course (Qualifying in Nature) Aptitude (MBA498) 2 Hrs 2 Credit

STUDY & EVALUATION SCHEME

Integrated B. Tech.(CS) & MBA

Year V, Semester X

Course: MBA Full Time

Sl. No.	Paper Code	Paper Name	L+T+P	Maximum marks			Credit
1		Spec. Group 1 Paper 3	4+1+0	70	30	100	4
2		Spec. Group 1 Paper 4	4+1+0	70	30	100	4
3		Spec. Group 1 Paper 5	4+1+0	70	30	100	4
4		Spec. Group 2 Paper 3	4+1+0	70	30	100	4
5		Spec. Group 2 Paper 4	4+1+0	70	30	100	4
6		Spec. Group 2 Paper 5	4+1+0	70	30	100	4
7	MBA496	Winter Project Viva		-	-	100	2
		Total		420	180	700	26

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List of Specializations

Specialization - 1: FINANCE
MBA311: Banking operations Management
MBA312: Central Banking
MBA411: Capital Markets
MBA412: Stock Exchange operations
MBA413: Wealth Maximization

Specialization -2: MARKETING
MBA316: Sales and Distribution
MBA317: Service Management
MBA416: CB and IMC
MBA417: Rural Marketing
MBA418: International Marketing

Specialization -3: HUMAN RESOURCE
MBA421: Employee welfare and Labour Legislation
MBA422: Training & Development and competency mapping
MBA423: Performance Appraisal and compensation Management
MBA321: Organizational Change and Development
MBA322: Employee Engagements

Specialization -5: INFORMATION TECHNOLOGY
MBA336: Managing IT-Enabled Services
MBA337: Ecommerce
MBA436: Business Intelligence and Data Mining
MBA437: Information Technology Project Management
MBA438: Data communication and Networking security

Specialization -7: OPERATIONS MANAGEMENT
MBA346: Project Management
MBA347: Decision Making in Innovation and New Product Development
MBA446: Operation Strategy
MBA447: Computer Integrated Manufacturing
MBA448: Business Process Reengineering

Specialization -4: INTERNATIONAL BUSINESS
MBA326: International Trade
MBA327: EXIM Procedure & Documentation
MBA426: Export-Import Financing
MBA427: Global Business Environment
MBA428: International Logistics

Specialization -6: HOSPITALITY & TOURISM
MBA331: Service Sanitation and Risk
MBA332: Hospitality and Tourism Planning
MBA431: Travel agency and tour operators
MBA432: Hospitality Information System
MBA433: Recent trends in Hospitality and tourism

Specialization -8: RETAIL MANAGEMENT
MBA341: Retail Management
MBA342: Retail Pricing and Branding
MBA441: International Retailing

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MBA442: Merchandising and Mall Management
MBA443: Trends in Retailing

Specialization -9: HEALTHCARE MANAGEMENT
MBA351: Outdoor Health Management
MBA352: Management of Indore health
MBA451: Associated Services and Hygiene
MBA452: Hospital Layouts
MBA453: Recent trends in health care management

Specialization -10: LEGAL ISSUES IN MODERN ERA
MBA356: Patent and trade marks
MBA357: IPRs
MBA456: Cyber Law
MBA457: UN Charter and International court of Justice
MBA458: Business Adjudication

Note: Students required to choose any two Specializations out of ten offering by the University. First Specialization chosen by student will be treated as Spec. Group 1 and second Specialization will be treated as Spec. Group 2.

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Established by Govt. of U.P. u/s 2F of UGC Act, 1956 vide U.P. Act 22 of 2010.

Scheme of Instruction & Syllabi

of

Integrated B. Tech. & M.Tech.

(Computer Science & Engineering)

(Effective From 2016-2017)

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Invertis Institute of Engineering &Technology

INVERTIS UNIVERSITY

Invertis Village,Bareilly-Lucknow NH-24, Bareilly

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STUDY & EVALUATION SCHEME

Integrated B. Tech. & M.Tech.(Computer Science & Engineering)

YEAR II, SEMESTER-III

S.NO.	COURSE CODE	SUBJECTS	PERIODS			Evaluation Scheme				SUBJECT TOTAL	CREDITS
						SESSIONAL EXAM.					
			L	T	P	CT	TA	TOTAL	E-SEM		
THEORY											
1	BHU-302/BHU-301	Industrial Sociology / Industrial Psychology	2	1	0	10	5	15	35	50	2
2	BAS-301/BOE-031-038	Mathematics-III /Science elective	3	1	0	20	10	30	70	100	4
3	BEC-305	Digital Logic Design	3	1	0	20	10	30	70	100	4
4	BCS-301	Data Structure	3	1	0	20	10	30	70	100	4
5	BCS-302	Discrete Structure	3	1	0	20	10	30	70	100	4
6	BIT-301	IT Infrastructure and its Management	3	1	0	20	10	30	70	100	4
PRACTICALS & PROJECTS											
7	BEC-355	Digital Logic Design Lab	0	0	2	-	-	10	15	25	1
8	BCS-351	Data structures Lab	0	0	2	-	-	10	15	25	1
9	BIT-351	IT Infrastructure and its Management Lab	0	0	2	-	-	10	15	25	1
10	GP-301	General Proficiency	-	-	-	-	-	25	-	25	1
		Total	**17**	**6**	**6**	**110**	**55**	**220**	**430**	**650**	**26**

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STUDY & EVALUATION SCHEME
B. Tech. Computer Science & Engineering

YEAR III, SEMESTER-V

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				SUBJECT TOTAL	Credits
						SESSIONAL EXAM.			E-SEM		
			L	T	P	CT	TA	TOTAL			
THEORY											
1	BCS-501	Theory of Computation	3	1	0	20	10	30	70	100	4
2	BCS-502	DBMS	3	1	0	20	10	30	70	100	4
3	BCS-503	OOPS with java	3	1	0	20	10	30	70	100	4
4	BCS-504	Software Engineering	3	1	0	20	10	30	70	100	4
5	BCS-505	Principles of Programming Language	2	1	0	10	5	15	35	50	2
		OE-I	2	1	0	10	5	15	35	50	2
PRACTICAL/DESIGN/DRAWING											
7	BCS-552	DBMS Lab	0	0	2	-	-	10	15	25	1
8	BCS-553	OOPS with java Lab	0	0	2	-	-	10	15	25	1
9	BCS-554	Software Engineering Lab	0	0	2	-	-	10	15	25	1
10	BCS-555	Seminar	0	0	2	-	-	25	-	25	1
11	GP-501	General Proficiency	-	-	-	-	-	25	-	25	1
Total			16	6	8	100	50	230	395	625	25

OPEN ELECTIVE-I

BOE-501 Total Quality Management
BOE-502 Human Computer Interaction
BOE-503 Entrepreneurship Development
BOE-504 Non-Conventional Energy Resources

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STUDY & EVALUATION SCHEME

Integrated B. Tech. & M.Tech.(Computer Science & Engineering)

YEAR II, SEMESTER-IV

S.NO.	COURSE CODE	SUBJECTS	PERIODS			Evaluation Scheme				SUBJECT TOTAL	CREDITS
						SESSIONAL EXAM.					
			L	T	P	CT	TA	TOTAL	E-SEM		
THEORY											
1	BHU-402 /BHU-401	Industrial Sociology / Industrial Psychology	2	1	0	10	5	15	35	50	2
2	BAS-401 /BOE-041-048	Mathematics-III /Science elective	3	1	0	20	10	30	70	100	4
3	BCS-401	Computer Organization & Introduction to Microprocessor	3	1	0	20	10	30	70	100	4
4	BCS-402	Design Analysis & Algorithms	3	1	0	20	10	30	70	100	4
5	BCS-403	Operating System	3	1	0	20	10	30	70	100	4
6	BCS-404	Unix & Shell Programming	3	1	0	20	10	30	70	100	4
PRACTICALS & PROJECTS											
7	BCS-451	Computer Organization & Introduction to Microprocessor	0	0	2	-	-	10	15	25	1
8	BCS-452	Design Analysis & algorithm lab	0	0	2	-	-	10	15	25	1
9	BCS-454	Unix & Shell Programming Lab	0	0	2	-	-	10	15	25	1
10	GP-401	General Proficiency	-	-	-	-	-	25	-	25	1
		Total	**17**	**6**	**6**			**220**	**430**	**650**	**26**

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SCHEME OF INSTRUCTION

B.Tech.(Computer Science and Engineering)

Course Structure

B. TECH. I- YEAR, I SEMESTER

S. No.	Course Code	SUBJECT	L	T	P	Credits
1	BAS-103	Mathematics-I	3	1	0	4
2	BAS-102 or BME-102	Engg. Chemistry Or Engg. Mechanics	3	1	0	4
3	BEE-101 or BCS-101	Electrical Engg. Or Computer fundamentals & programming in C	3	1	0	4
4	BEC-101 or BHU-101	Electronics Engineering Or Professional Communication	3	1	0	4
5	BAS-101	Engg. Physics-I	3	1	0	4
6	BME-101 or BAS-104	Manufacturing Process Or Environment & Ecology	2	0	0	2
7	BME-151 Or BCE-151	Workshop Practice Or Engg. Drawing & Computer Graphics	0	1	3	2
8	BAS-152 Or BCE-151	Engg. Chemistry Lab Or Engg. Mechanics Lab	0	0	2	1
9	BEE-151 Or BCS-151	Electrical Engg. Lab Or Computer fundamentals & Programming in C lab	0	0	2	1
10	BAS-151 Or BHU-151	Physics Lab Or Professional Communication Lab	0	0	2	1
11	GP-101	General Proficiency	-	-	-	1
		Total	17	6	9	28

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STUDY & EVALUATION SCHEME
B. Tech. Computer Science & Engineering

YEAR III, SEMESTER-VI

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme					Credits
						SESSIONAL EXAM.			E-SEM/ TOTAL		
			L	T	P	CT	TA	TOTAL			
THEORY											
1	BCS-601	Computer Networks	3	1	0	20	10	30	70	100	4
2	BCS-602	Computer Graphics	3	1	0	20	10	30	70	100	4
3	BCS-603	Compiler	3	1	0	20	10	30	70	100	4
4	BIT-601	Internet Technology	2	1	0	10	5	15	35	50	2
5		CS Elective-I	3	1	0	20	10	30	70	100	4
6		CS Elective-II	2	1	0	10	5	15	35	50	2
PRACTICAL/DESIGN/DRAWING											
6	BCS-651	Computer Networks Lab	0	0	2	-	-	10	15	25	1
7	BCS-652	Computer Graphics Lab	0	0	2	-	-	10	15	25	1
8	BCS-653	Compiler Lab	0	0	2	-	-	10	15	25	1
9	BIT-651	Internet Technologies Lab	0	0	2	-	-	10	15	25	1
10	GP-601	General Proficiency	-	-	-	-	-	25	-	25	1
Total			16	6	8	100	50	215	410	625	25

CS ELECTIVE-I
BIT-061 Software Testing
BCS-061 Graph Theory
BCS-062 System Programming
BCS-063 Operational Research

CS ELECTIVE-II
BIT-062 Software project Management
BCS-064 Pattern Recognition
BCS-065 Parallel Algorithm
BCS-066 Object Oriented Techniques

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STUDY & EVALUATION SCHEME

Integrated B. Tech. & M.Tech.(Computer Science & Engineering)

Year IV, Semester VII

S. No.	Course Code	Subject	Period			Evaluation Scheme				Subject Total	Credits
						Sessional Exam.			E-SEM		
			L	T	P	CT	TA	TOTAL			
1	BCS-701	Computer Architecture	3	1	0	20	10	30	70	100	4
2	BCS-702	Artificial Intelligence	3	1	0	20	10	30	70	100	4
3	BCS-703	Real TimeSystems	3	1	0	20	10	30	70	100	4
4	MCS-103	Advance Computer Network	4	1	0	20	10	30	70	100	4
5	MCS-104	Distributed System	4	1	0	20	10	30	70	100	4
6	BCS-751	Industrial Training	0	0	2	-	-	25	-	25	1
7	BCS-752	Artificial Intelligence Lab	0	0	2			7	18	25	1
8	BCS-353	Project	-	-	4	-	-	15	35	50	2
9	GP 701	GP	-	-	2	-	-	25	-	25	1
Total			15	5	10	-	-	-	-	625	25

STUDY & EVALUATION SCHEME

Integrated B. Tech. & M.Tech.(Computer Science & Engineering)

YEAR IV, SEMESTER-VIII

S. No.	Course Code	Subject	Period			Evaluation Scheme				Subject Total	Credits
						Sessional Exam			E-SEM		
			L	T	P	CT	TA	TOTAL			
1	MCS-201	Advance Database System	4	1	0	20	10	30	70	100	4
2	MCS-202	Parallel Computing	4	1	0	20	10	30	70	100	4
3	MCS-203	Mobile Computing	4	1	0	20	10	30	70	100	4
4		MCS-Elective I	4	1	0	20	10	30	70	100	4
5	MCS-251	Seminar	0	4	0			50		50	2
Total			12	8						450	18

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STUDY & EVALUATION SCHEME

Integrated B. Tech. & M.Tech.(Computer Science & Engineering)

YEAR V, SEMESTER-IX

S. No.	Course Code	Subject	Period			Evaluation Scheme				Subject Total	Credits
						Sessional Exam.			E-SEM		
			L	T	P	CT	TA	Total			
THEORY											
1		MCS Elective II	4	1	0	20	10	30	70	100	4
2		MCS Elective III	4	1	0	20	10	30	70	100	4
3	MCS-351	Seminar	0	4	0	0	0	50		50	2
4	MCS-393	Preliminary THESIS	-	-	-	-	-	200	-	200	8
Total			6	6						450	18

STUDY & EVALUATION SCHEME

Integrated B. Tech. & M.Tech.(Computer Science & Engineering)

YEAR V, SEMESTER-X

S. No.	Course Code	Subject	Period			Evaluation Scheme				Subject Total	Credits
						Sessional Exam.			E-SEM		
1	MCS-394	THESIS	0	16	0	0	0	100	300	400	16
Total			0	16	0	-	-	-	-	400	16

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ELECTIVE-I

MCS-211 ADVANCED SOFTWARE ENGINEERING
MCS-212 WIRLESS SENSOR NETWORKS
MCS-213 NETWORK SECURITY & CRYPTOGRAPHY
MCS-214 MACHINE LEARNING
MCS-215 MULTIMEDIA SYSTEMS

ELECTIVE –II

MCS-321 SOFTWARE PROJECT MANAGEMENT
MCS-322 DESIGN AND ANALYISIS OF ALGORITHMS
MCS-323 INTELLECTUAL PROPERTY RIGHTS
MCS-324 UNIX NETWORK PROGRAMMING
]MCS-325 COMPLIER TECHNIQUES

ELECTIVE-III

MCS-331 REAL TIME SYSTEMS
MCS-332 NETWORKING PROTOCOLS
MCS-333 EMERGING DATABASE TECHNOLOGIES
MCS-334 DATA WAREHOUSING & MINING

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DRM-101 RESEARCH METHODOLOGY for Engineering Stream

UNIT I

Research Topic: selection of problems, stages in the execution of research, preparation of manuscript and report writing. Search engines: google, pubmed, google scholar, EMBL, etc. Publication of Report in Journals: Standard of research journals, impact factor, citation index, H index, and more. Proof reading, reading journals and review.

UNIT II

Introduction of computer science- Database management systems, presentation graphics, management of data by office applications: MS-office, MS-Word, MS-Excel, and MS-PowerPoint. Generation and analysis of data, basics of softwares: Matlab and Labview.

LaTeX overview – document classes, Packages, document environment, Block structure, and special pages.

UNIT III

Measures of dispersion: sampling methods: random sampling - types of variables: qualitative and quantitative variables - continuous and discontinuous variables - scaling method – mean - standard deviation-standard error - coefficient of variation. Comparison of means: chi square test, student's t test and ANOVA.

UNIT IV

Spectrophotometer: principle and applications, Ultra violet, Infra Red, 1H, Nuclear magnetic resonance (NMR), fundamental and procedure of chromatography. Principle and application of electron microscopy, scanning electron microscopy, transmission electron microscopy, X-ray diffraction.

REFERENCE BOOKS

- Statistical methods, Snedecor, G, W. and W.G. Cohran, 1978. Oxford and IBH publishing CO Pvt. Ltd.
- Biometry, Sokal, R.R. and F.J.Rohlf, 1981. W.H. Freeman, NewYork.
- Authoring a PhD, thesis: how to plan, draft, write and finish a doctoral dissertation, Duncary, P. 2003. Macmillan, pp 256.
- Biostatistical analysis, Zar, J.H., 1996. Prentice Hall, Uppar Saddle River, newjersy, USA.
- Scientific courses and presentations, Martha Davis, 2005. Academic press, Tokyo.pp.356

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Syllabus for Ph. D. in Computer Science

(PhD-032) Advance Research Studies in Computer Engineering

Module-I (Data Warehouse and Mining)

Introduction to Data Warehousing. Client/Server Computing mode, Parallel processors & Cluster Systems. Data Warehousing Components, Building a Data Warehouse, Mapping the Data Warehousing to a Multiprocessor Architecture, DBMS Schemas for Decision Support. Introduction to Data Mining. Decision Trees, Neural Networks, Nearest Neighbor & Clustering, Genetic Algorithms, Rule Induction, Selecting & Using the Right Technique.

Module-II (Advance Computer Network and Ad-hoc Networks)

Next Generation IP protocol, TCP extensions for high speed network, Introduction to SCTP. P2P file sharing and structure overlay network. Introduction to wireless and ad-hoc networks, Mobility in networks, Mobile IP, Mobile TCP, advantages and limitations of ad-hoc networks, Routing in MANETs.

Module-III

Introduction to MatLab and NS-2.

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1. SOFTWARE PROJECT MANAGEMENT (PhDCS 103)

MODULE I

Overview of Project Management, PMI Processes, Software project phases, Organizational structures, Project charter, Statement of Work (SOW) **Planning Phase,** Development lifecycle models, Matching lifecycles to projects, Project plans, Work Breakdown Structures (WBS) **Estimation and Budgeting**, Estimation, Budgeting, Project, selection, NPV, ROI, Payback models

MODULE II

Scheduling, Project network diagram fundamentals, PERT techniques, Gantt charts, Critical chain scheduling **Risk and Change Management**, Mid-term review , Risk management, Change control, More MS-Project.

Development Management, Team models, Requirements process, Configuration, management, Software metrics, Programming languages & tools, Managing conflict and motivating, MS-Project: Assigning Resources.

MODULE III

Project Control, Status reporting, Project metrics, Earned value analysis, Communications Techniques, Process Improvement, MS Project: (a) Resource leveling (b) Other views

System Test Process, Test specifications, Black box and white box testing, Test scripts, Unit and integration testing, Acceptance test specifications, Test tools, MS Project:(a) Reporting.

Final Phases & Other Issues, Project Recovery, Documentation, Cutover/Migration Post Project Reviews, Closing, MS Project: (a) Advanced features.

Reference Books:

1. *S. McConnell, "Software Project Survival Guide" (1997)*
2. *S. Berkun, "The Art of Project Management", (2005)*
3. *C. Larman, "Agile and Iterative Development: A Manager's Guide", (2003)*
4. *W. Royce, "Software Project Management: A Unified Framework", (1998)*
5. *J. Highsmith, "Agile Project Management: Creating Innovative Products", (2004)*
6. *T. DeMarco, "The Deadline: A Novel About Project Management", (1997)*
7. *T. DeMarco, "Peopleware: Productive Projects and Teams", (1999)*
8. E. Bennatan, "On Time Within Budget: Software Project Management Practices and Techniques", (2000)

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2. NETWORKING PROTOCOLS (PhDCS 104)

MODULE I

Networks and Services, Approaches to Network Design, The OSI Reference Model; Overview of TCP/IP Architecture, Application Protocols and TCP/IP Utilities, Internet Architecture Interconnection through IP Routers, Internet Protocol (IP), User datagram protocol (UDP).

MODULE II

Routing Cores - peers Algorithms Autonomous Systems Exterior Gateway Protocol Multicast Address. Internet Group Management Protocol (IGMP) and Implementation. TCP/IP over ATM networks: ATM cell Transport, Adaptation Layer, IP Address Building in an ATM network Logical IP subnet Concept ATMARP packet format. Domain name system, Remote Login (Telnet, Rlogin) File Transfer and Access (FTP, TFTP, NFS), Electronic mail (SMTP, MIME) Internet Management (SNMP, SNMPV2) Internet Security and Firewall Design Post Office Protocol (POP) Network News Transfer Protocol (NNTP).

MODULE III

TCP/IP over view- The Transport Layer: TCP and UDP. Elementary TCP Sockets. TCP Client-Server Example. I/O Multiplexing: The select and poll Functions. Socket Options. Elementary UDP Sockets. Elementary Name and Address Conversions. The Client Server Model and Software Design, Concurrent Processing in Client-Server Software, Iterative, Connectionless Servers (UDP), Iterative, Connection-Oriented Servers (TCP), Concurrent, Connection-Oriented Servers (TCP). Single-Process, Concurrent Servers (TCP). Multiprotocol Servers (TCP, UDP), Multiservice Servers (TCP, UDP). Uniform, Efficient Management of server. Concurrency in clients. TCP/IP Architecture, The Internet Protocol, Limitations of IPv4 and Introduction to IPv6, User Datagram Protocol, Transmission Control Protocol, DHCP, Introduction to Internet Routing Protocols

Reference Books:

1. A. Leon-Garcia, Indra Widjaja, "Communication Networks", Tata McGraw Hill, 2000

2. William Stallings, "Data and Computer Communications", Pearson Education, 7th Edition.

3. Andrew S. Tanenbaum, "Computer Networks", Prentice Hall India, 4th Edition, 2003

4. W.Richard Stevens: TCP/IP Illustrated vol 1: The Protocols, Pearson Edun. Asia, 2000.

5. Douglas Comer: Internetworking with TCP/IP vol.1: Principles, Protocols and Architecture, Prentice Hall, 4th edition, 2000

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3. REAL TIME SYSTES (PhDCS 105)

Module 1

Time System, Issues in real time computing, Performance measures of Real Time System, Issues in Real Time Computing, Performance measures of Real time Systems, Real Time Application.Task Assignment and Scheduling: Different task model, Scheduling hierarchy, offline vs Online Scheduling, Clock Drives. Model of Real Time System: Processor, resources, temporal parameter, Periodic Task Model, Sporadic Task Model, Precedence Constraints and Data Dependencies, Scheduling hierarchy Scheduling of Periodic Task: Assumptions, fixed versus dynamic priority algorithms, schedulability test for fixed priority task with arbitrary deadlines.

MODULE II

Scheduling of Aperiodic and Sporadic Tasks: Assumptions and approaches, deferrable, sporadic servers, slack stealing in deadline driven and fixed priority systems. Two level scheme for integrated scheduling, Scheduling for applications having flexible constrains.

MODULE III

Resources and Resource Access Control: Assumptions on resources and their usage, resource contention, resource access control(Priority Ceiling Protocol, Priority Inheritance protocol, Slack Based Priority Ceiling Protocol, Peremption Ceiling Protocol). Multi Processor Scheduling: Model of multi processor and distributed systems, Scheduling algorithms for end to end periodic tasks in homogeneous/heterogeneous systems, Predictability and validation of dynamic multiprocessor system. Real time Communication: Model of real time Communication, Priority base service For switched network, Weighted Round Robin Service, Medium access Control Protocol, Real Time Protocol.

Reference Books:

1. Jane .W. S. Liu Real Time Systems Pearson Education.
2. Krishna .C.M Real Time Systems Mc-Graw Hill Publication

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