

Deenbandhu Chhotu Ram University of Science & Technology, Murthal (Sonapat)
SCHEME OF STUDIES & EXAMINATIONS
B.Tech. 1st YEAR (SEMESTER I) (Common for all branches)
Credit Based Scheme w.e.f. 2012-13

S. No.	Course No.	Course Title	Teaching Schedule			Marks of Class work	Examination Marks		Total	Credit	Duration of Exam
			L	T	P		Theory	Practical			
1	HUM101B	COMMUNICATIVE ENGLISH	3	1		25	75	-	100	4	3
2	MATH101B	MATHEMATICS -I	3	1		25	75	-	100	4	3
3	PHY101B	ENGINEERING PHYSICS -I	3	1		25	75	-	100	4	3
4	ME101B	MANUFACTURING PROCESSES (Gr-A)	3	1		25	75	-	100	4	3
	CH101 B	OR ENGINEERING CHEMISTRY (Gr-B)	3	1		25	75	-			
5	EE101B	PRINCIPLES OF ELECTRICAL ENGINEERING (Gr-A)	3	1		25	75	-	100	4	3
	CSE101B	OR INTRODUCTION TO COMPUTERS & PROGRAMMING (Gr-B)	3	1		25	75	-			
6	ME103B	ENGINEERING GRAPHICS & DRAWING (Gr-A)	1	-	4	40	-	60	100	3	3
	ME105B	OR ELEMENTS OF MECHANICAL ENGINEERING (Gr-B)	3	1	-	25	75	-			
7	PHY103B	PHYSICS LAB -I	-	-	2	20		30	50	1	3
8	ME 107B	WORKSHOP PRACTICE (Gr-A)	-	-	4	40		60	100	2	3
	CH103B	OR CHEMISTRY LAB (Gr-B)	-	-	2	20		30			
9	EE103B	PRINCIPLES OF ELECTRICAL ENGINEERING LAB (Gr-A)	-	-	2	20		30	50	1	3
	CSE103B	OR COMPUTER PROGRAMMING LAB (Gr-B)	-	-	2	20		30			
10	ME109B	ELEMENTS OF MECHANICAL ENGINEERING LAB (Gr-B)	-	-	2	20		30	50	1	3
Total			16	5	12	245	375	180	800	27	
			18	6	8	230	450	120	800	28	

Note:-

- Every student has to participate in the sports activities. Minimum one hour is fixed for sports activities either in the morning or evening. Weightage of sports is given in General Proficiency and Ethics Syllabus.
- The students will be allowed to use non-programmable scientific calculator. However, sharing/exchange of calculator is prohibited in the examination.
- Electronics gadgets including Cellular phones are not allowed in the examination.
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Deenbandhu Chhotu Ram University of Science & Technology, Murthal (Sonapat)

**SCHEME OF STUDIES & EXAMINATIONS
B.Tech. 1st YEAR (SEMESTER óII) (Common for all branches)
Credit Based Scheme w.e.f. 2012-13**

S. No.	Course No.	Course Title	Teach-ing Schedule			Marks of Class work	Examination Marks		Total	Credit	Duratio n of Exam
			L	T	P		Theory	Practic al			
1.	MATH102B	MATHEMATICS -II	3	1		25	75	-	100	4	3
2	PHY102B	ENGINEERING PHYSICS -II	3	1		25	75	-	100	4	3
3	ME101 B	MANUFACTURING PROCESSES (Gr-B)	3	1		25	75	-	100	4	3
	CH101 B	ENGINEERING CHEMISTRY (Gr-A)	3	1		25	75	-			
4	EE101B	PRINCIPLES OF ELECTRICAL ENGINEERING (Gr-B)	3	1		25	75	-	100	4	3
	CSE101B	INTRODUCTION TO COMPUTERS & PROGRAMMING (Gr-A)	3	1		25	75	-			
5	ECE102B	BASICS OF ELECTRONICS ENGINEERING	3	1		25	75	-	100	4	3
	BT102B	BASICS OF BIO TECHNOLOGY									
	HUM102 B	ORAL COMMUNICATION SKILLS OR									
	CE102 B	BASICS OF CIVIL ENGINEERING									
6	ME103B	ENGINEERING GRAPHICS & DRAWING (Gr-B)	1	-	4	40	-	60	100	3	3
	ME105B	ELEMENTS OF MECHANICAL ENGINEERIN G (Gr-A)	3	1	-	25	75	-	100	4	
7	PHY104B	PHYSICS LAB -II	-	-	2	20		30	50	1	3
8	ME 107B	WORKSHOP PRACTICE (Gr-B)	-	-	4	40		60	100	2	3
	CH103B	CHEMISTRY LAB (Gr-A)	-	-	2	20		30	50	1	
9	EE103B	PRINCIPLE S OF ELECTRICAL ENGINEERING LAB (Gr-B)	-	-	2	20		30	50	1	3
	CSE103B	COMPUTER PROGRAMMING LAB (Gr-A)	-	-	2	20		30	50		
10	ME109B	ELEMENTS OF MECHANICAL ENGINEERING LAB (Gr-A)	-	-	2	20		30	50	1	3
11	GP 102B	GENERAL PROFICIENCY AND ETHICS	1					50	50	2	
Total			18	5	12	245	375	230	850	29	
			20	6	8	230	450	170	850	30	

Note:

- Every student has to participate in the sports activities. Minimum one hour is fixed for sports activities either in the morning or evening. Weightage of Sports is given in General Proficiency and Ethics Syllabus.
- Each student has to undergo a workshop at least 4 weeks (80-100 hours) at the end of II semester during summer vacations. Out of four weeks two weeks would be dedicated to general skills and two weeks training for specialized discipline/department. The evaluation of this training shall be carried out in the III semester.
- The students will be allowed to use non-programmable scientific calculator. However, sharing/exchange of calculator are prohibited in the examination.
- Electronics gadgets including Cellular phones are not allowed in the examination.
- C n n " d t c p e j g u " c t g " v q " d g " f D x K f g f i " k g t d v j g d w w k v e G k h k v there is an equitable distribution of teaching load in odd and even semester.**
- Elective course HUM-102B (ORAL COMMUNICATION SKILSS) is deleted w.e.f session 2013-14

Deenbandhu Chhotu Ram University of Science & Technology, Murthal (Sonapat)
 SCHEME OF STUDIES & EXAMINATIONS
 B.Tech. 2nd YEAR (SEMESTER I III) INFORMATION TECHNOLOGY
 Credit Based Scheme w.e.f. 2013-14

S. No.	Course No.	Course Title	Teaching Schedule			Marks of Class work	Examination Marks		Total	Credit	Duration of Exam
			L	T	P		Theory	Practical			
1	MGT 201 B	ENGINEERING ECONOMICS (Common for all branches Except BT & BME) Gr-A	4	-		25	75	-	100	4	3
	GES201B	Or ENVIRONMENT STUDIES (Common for all branches Gr-B)	3				75*		75*		3
2	CSE 201B	DATA STRUCTURES (Common with CSE,ECE and	3	1		25	75	-	100	4	3
3	CSE20B	COMPUTER BASED NUMERICAL AND STATISTICAL TECHNIQUES (Common with CSE)	3	1		25	75	-	100	4	3
4	IT20B	DISCRETE MATHEMATICAL STRUCTURES	3	1		25	75	-	100	4	3
5	ECE201B	DIGITAL ELECTRONICS (Common with ECE,EE,EEE,IC and 4 th Sem BME and AEI	3	1		25	75	-	100	4	3
6	ECE210B	COMMUNICATION SYSTEMS (Common with CSE, ECE,EE,EEE,IC and AEI V th Sem)	3	1		25	75	-	100	4	3
7	CSE221B	DATA STRUCTURES LAB (Common with CSE,ECE and	-	-	2	20		30	50	1	3
8	CSE22B	COMPUTER BASED NUMERICAL AND STATISTICAL TECHNIQUES LAB (Common with CSE)	-	-	2	20		30	50	1	3
9	ECE221B	DIGITAL ELECTRONICS LAB (Common with ECE,EE,EEE,IC and 4 th Sem BME and AEI)	-	-	2	20		30	50	1	3
10	GES 203 B	ENVIRONMENTAL STUDIES FIELD WORK (Common for all branches Gr-B)	-	-	-	-	-	25*	25*	-	-
11	ME 217B	WORKSHOP (Common for all branches Except BT, AE)	--	--	2	50	--	--	50	2	3
Total			19	5	8	260	450	90	800	29	
			18	5	8	310	375	90	700	25	

Note:

- Every student has to participate in the sports activities. Minimum one hour is fixed for sports activities either in the morning or evening. Weightage of Sports is given in General Proficiency and Ethics Syllabus.
- *The Environmental studies (GES-201 B & Environment Studies Field work (GES-203B) are compulsory & qualifying courses only.
- The students will be allowed to use non-programmable scientific calculator. However, sharing/exchange of calculator is prohibited in the examination.
- Electronics gadgets including Cellular phones are not allowed in the examination
5. College, so that there is an equitable distribution of teaching load in odd and even semester.

SCHEME OF STUDIES & EXAMINATIONS
B.Tech. 2nd YEAR (SEMESTER I & IV) INFORMATION TECHNOLOGY
Credit Based Scheme w.e.f. 2013-14

S. No.	Course No.	Course Title	Teaching Schedule			Marks of Class work	Examination Marks		Total	Credit	Duration of Exam
			L	T	P		Theory	Practical			
1	MGT 201 B	ENGINEERING ECONOMICS (Common for all branches Except BT & BME) Gr-B	4	-		25	75	-	100	4	3
	GES-201B	ENVIRONMENT STUDIES (Common for all branches) Gr-A	3				75*		75*		3
2	IT202B	PRINCIPLES OF OPERATING SYSTEMS	3	1		25	75	-	100	4	3
3	IT204B	COMPUTER ORGANIZATION	3	1		25	75	-	100	4	3
4	CSE202B	DATABASE MANAGEMENT SYSTEMS (Common with CSE)	3	1		25	75	-	100	4	3
5	CSE 203B	OBJECT ORIENTED PROGRAMMING (Common with CSE, AEI and 5 th Sem ECE,IC,EEE)	3	1		25	75	-	100	4	3
6	CSE203B	INFORMATION SYSTEM ANALYSIS AND DESIGN (Common with CSE)	3	1		25	75	-	100	4	3
7	IT222B	OPERATING SYSTEMS LAB	-	-	2	20	-	30	50	1	3
8	CSE222B	DBMS LAB (Common with CSE)	-	-	2	20	-	30	50	1	3
9	CSE222B	OOPS LAB (Common with CSE, AEI and 5 th Sem ECE,IC,EEE)	-	-	2	20	-	30	50	1	3
10	GES203 B	ENVIRONMENTAL STUDIES FIELD WORK (Common for all branches Gr. A)	-	-		-	-	25*	25*	-	
11	GPIT 202B	GENERAL PROFICIENCY AND ETHICS	1	-	-	-	-	75	75	2	3
Total			20	5	6	210	450	165	825	29	
			19	5	6	185	375	165	725	25	

Note:

- Every student has to participate in the sports activities. Minimum one hour is fixed for sports activities either in the morning or evening. Weightage of Sports is given in General Proficiency and Ethics Syllabus.
- *The Environmental studies (GES-201B & Environment Studies Field work (GES-203B) are compulsory & qualifying courses only.
- The students will be allowed to use non-programmable scientific calculator. However, sharing/exchange of calculator is prohibited in the examination.
- Electronics gadgets including Cellular phones are not allowed in the examination
- Each students has to undergo Professional Training of at least 4 weeks from the industry, institute, research lab, training center etc during summer vacation and its evaluation shall be carries out in the V semester
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College, so that there is an equitable distribution of teaching load in odd and even semester.

Deenbandhu Chhotu Ram University of Science & Technology, Murthal (Sonapat)
 SCHEME OF STUDIES & EXAMINATIONS
 B.Tech. 3rd YEAR (SEMESTER I V) INFORMATION TECHNOLOGY
 Credit Based Scheme w.e.f. 2014-15

S. No.	Course No.	Course Title	Teaching Schedule			Marks of Class work	Examination Marks		Total	Credit	Duration of Exam
			L	T	P		Theory	Practical			
1	IT-301B	DATA BASE ADMINISTRATION	3	1		25	75	-	100	4	3
2	IT-303B	PRINCIPLES OF SOFTWARE ENGINEERING	3	1		25	75	-	100	4	3
3	IT-305B	JAVA PROGRAMMING	3	1		25	75	-	100	4	3
4	CSE305B	COMPUTER NETWORKS (Common with CSE)	3	1		25	75	-	100	4	3
5	CSE307B	ANALYSIS AND DESIGN OF ALGORITHMS (Common with CSE)	3	1		25	75	-	100	4	3
6	CSE-309B	THEORY OF AUTOMATA & COMPUTATION (Common with CSE)	3	1		25	75	-	100	4	3
7	IT-321B	DATA BASE ADMINISTRATION LAB	-	-	2	20		30	50	1	3
8	IT-323B	SOFTWARE ENGINEERING LAB	-	-	2	20		30	50	1	3
9	IT-325B	JAVA PROGRAMMING LAB	-	-	2	20		30	50	1	3
10	CSE325B	COMPUTER NETWORKS LAB (Common with CSE)	-	-	2	20		30	50	1	3
11	IT-331-B	PROFESSIONAL TRAINING -I	-	-	2	50	-	-	50	2	3
Total			18	6	10	280	450	120	850	30	

Note:

- 1 Every student has to participate in the sports activities. Minimum one hour is fixed for sports activities either in the morning or evening. Weightage of Sports is given in General Proficiency and Ethics Syllabus.
- 2 The students will be allowed to use non-programmable scientific calculator. However, sharing/exchange of calculator is prohibited in the examination.
- 3 Electronics gadgets including Cellular phones are not allowed in the examination
- 4 Assessment of Professional Training obtained at the end of IVth Semester, will be done on seminar ,viva-voce, report and certificate of Professional Training obtained by the student from the industry/institute/research lab/training centre etc.

SCHEME OF STUDIES & EXAMINATIONS
B.Tech. 3rd YEAR (SEMESTER I VI) INFORMATION TECHNOLOGY
Credit Based Scheme w.e.f. 2014-15

S. No.	Course No.	Course Title	Teaching Schedule			Marks of Class work	Examination Marks		Total	Credit	Duration of Exam
			L	T	P		Theory	Practical			
1	IT302B	WEB TECHNOLOGIES (Common with CSE)	3	1	-	25	75	-	100	4	3
2	IT-304B	SOFTWARE TESTING	3	1	-	25	75	-	100	4	3
3	IT306B	ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS	3	1	-	25	75	-	100	4	3
4	IT308B	PRINCIPLES OF PROGRAMMING LANGUAGES	3	1	-	25	75	-	100	4	3
5	IT310B	PARALLEL COMPUTING	3	1	-	25	75	-	100	4	3
6	CSE306B	COMPUTER GRAPHICS (Common with 5 th Sem)	3	1	-	25	75	-	100	4	3
7	IT322B	WEB TECHNOLOGIES LAB	-	-	2	20		30	50	1	3
8	IT324B	SOFTWARE TESTING LAB	-	-	2	20		30	50	1	3
9	IT326B	ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS LAB	-	-	2	20		30	50	1	
9	CSE322B	COMPUTER GRAPHICS LAB (Common with CSE 5 th Sem)	-	-	2	20		30	50	1	3
10	HUM302B	REPORT WRITING SKILLS (Common to all branches)	1	-	-	25	50	-	75	1	2
11	HUM 304B	ORAL PRESENTATIONS SKILLS	-	-	2	20	-	30	50	1	2
12	GPIT 302B	GENERAL PROFICIENCY AND ETHICS	1	-	-	-	-	75	75	2	-
Total			20	6	10	275	500	225	1000	32	

Note:

- 1 Every student has to participate in the sports activities. Minimum one hour is fixed for sports activities either in the morning or evening. Weightage of Sports is given in General Proficiency and Ethics Syllabus.
- 2 The students will be allowed to use non-programmable scientific calculator. However, sharing/exchange of calculator is prohibited in the examination.
- 3 Electronics gadgets including Cellular phones are not allowed in the examination.
- 4 Each student has to undergo Professional Training of at least 4 weeks from the industry, institute, research lab, training center etc during summer vacation and its evaluation shall be carried out in the VII semester

Deenbandhu Chhotu Ram University of Science & Technology, Murthal (Sonapat)
 SCHEME OF STUDIES & EXAMINATIONS
 B.Tech. Final YEAR (SEMESTER VII) INFORMATION TECHNOLOGY
 Credit Based Scheme w.e.f. 2015-16

S. No.	Course No.	Course Title	Teaching Schedule			Marks of Class work	Examination Marks		Total	Credit	Duration of Exam
			L	T	P		Theory	Practical			
1	IT 401B	ADVANCED JAVA	3	1	-	25	75	-	100	4	3
2	IT 402B	ADVANCED COMPUTER NETWORKS	3	1	-	25	75	-	100	4	3
3	CSE401B	MOBILE ALPPLICATION DEVELOPMENT (Common with CSE)	3	1	-	25	75	-	100	4	3
4	CCSE402B	SOFTWARE PROJECT MANAGEMENT (Common with CSE)	3	1	-	25	75	-	100	4	3
5		OPEN ELECTIVE	4	-	-	25	75	-	100	4	3
6	IT421 B	ADVANCED JAVA LAB		-	2	20		30	50	1	3
7	CSE421B	MOBILE ALPPLICATION DEVELOPMENT LAB (Common with CSE)		-	2	20		30	50	1	3
8	IT 422B	PROJECT	-	-	4	100	-	-	100	4	-
9	IT 423B	PROFESSIONAL TRAINING -II	-	-	2	50	-	-	50	2	-
Total			16	4	10	315	375	60	750	28	

* List of Open Electives

1	MEI 623B	ENTREPRENEURSHIP	6	BT401B	BIO-INFORMATICS
2	BME451B	MEDICAL INSTRUMENTATIONS	7	AE417B	MODERN VEHICLE TECHNOLOGY
3	ECE305B	CONSUMER ELECTRONICS	8	CE451B	POLLUTION & CONTROL
4	EE451B	ENERGY AUDIT	9	CSE-411B	MANAGEMENT INFORMATION SYSTEM
5	EEE457B	ENERGY RESOURCES & TECHNOLOGY	10	IT-413B	CYBER SECURITY

Note:

- Every student has to participate in the sports activities. Minimum one hour is fixed for sports activities either in the morning or evening. Weightage of Sports is given in General Proficiency Syllabus.
- Students will be permitted to opt for any one elective run by the other department. However, the department shall offer those elective for which they have expertise. The minimum number of students should be twenty to run an elective. The choice of the students for any elective shall not be binding for the department to offer, if the department does not have expertise.
- Assessment of Professional Training-II, undergone at the end of VI semester, will be based on seminar, viva-voce, report and certificate of Professional Training obtained by the student from the industry, institute, research lab, training center etc
- The students will be allowed to use non-programmable scientific calculator. However, sharing/exchange of calculator is prohibited in the examination.
- Electronics gadgets including Cellular phones are not allowed in the examination
- Project Coordinator will be assigned the project load of maximum 2 hrs. per week including his own guiding load of one hr. However the guiding teacher will be assigned maximum of one period of teaching load irrespective of number of students/groups under his supervision.

Deenbandhu Chhotu Ram University of Science & Technology, Murthal (Sonapat)
 SCHEME OF STUDIES & EXAMINATIONS
 B.Tech. Final YEAR (SEMESTER I VIII) INFORMATION TECHNOLOGY
 Credit Based Scheme w.e.f. 2015-16

S. No.	Course No.	Course Title	Teaching Schedule			Marks of Class work	Examination Marks		Total	Credit	Duration of Exam
			L	T	P		Theory	Practical			
1	IT402B	DATA ANALYTICS & APPLICATIONS	3	1		25	75	-	100	4	3
2	IT404B	LINUX ADMINISTRATION	3	1		25	75	-	100	4	3
3		ELECTIVE -I	4	-		25	75	-	100	4	3
4		ELECTIVE II	4	-		25	75	-	100	4	3
5	IT 422B	DATA ANALYTICS & APPLICATIONS LAB	-	-	2	20		30	50	1	3
6	IT424B	LINUX ADMINISTRATION LAB			2	20		30	50	2	3
6	IT426B	SEMINAR	-	-	2	50			50	2	3
7	IT-427B	PROJECT	-	-	8	75	-	125	200	8	3
8	GPIT402B	GENERAL FITNESS FOR THE PROFESSION	1	-	-		-	100	100	4	3
9											
Total			15	2	14	265	300	285	850	32	

Elective I		Elective II	
IT452B	NETWORK SECURITY	IT462B	M1 COMMERCE
IT454B	MOBILE COMPUTING	IT464B	SOFTWARE STANDARDS AND QUALITY
IT456B	MULTIMEDIA & VIRTUAL REALITY	CSE455B	ADVANCE COMPUTER ARCHITECTURE
IT460B	DATA MINING	CSE403B	CLOUD COMPUTING
CSE463B	SOFTWARE AGENTS	CSE460B	GREEN COMPUTING
CSE452B	SOFT COMPUTING	CSE466B	EMBEDDED SYSTEMS

Note:

- Every student has to participate in the sports activities. Minimum one hour is fixed for sports activities either in the morning or evening. Weightage of Sports is given in General Proficiency Syllabus.
- Students will be permitted to opt for two electives one from Electives-I and one from Elective-II to be offered by the department. However, the department shall offer those electives for which they have expertise. The minimum number of students should be twenty to run an elective. The choice of the students for any elective shall not be binding for the department to offer, if the department does not have expertise
- The students will be allowed to use non-programmable scientific calculator. However, sharing/exchange of calculator is prohibited in the examination.
- Electronics gadgets including Cellular phones are not allowed in the examination

HUM 101B COMMUNICATIVE ENGLISH
B. Tech. Semester - I (Common for all Branches)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

Objective

The course aims at developing the desired language (English) skills of students in engineering and technology so that they become proficient in communication to excel in their professional lives. The course has been designed to enhance their linguistic and communicative competence.

Course Content

UNIT I :- Communicative Grammar:

- A) Spotting the errors pertaining to tenses, conditional sentences, Copula and grammatical concord, notions of concord and the principle of proximity b/w subject and verb
- B) Voice, Reported Speech.

UNIT II :- Language through Literature:

Linguistic Reading of the following texts

5. The English Language is a living organism. It is constantly changing and developing. It is a dynamic system. It is a social phenomenon. It is a cultural phenomenon. It is a historical phenomenon. It is a geographical phenomenon. It is a political phenomenon. It is an economic phenomenon. It is a social phenomenon. It is a cultural phenomenon. It is a historical phenomenon. It is a geographical phenomenon. It is a political phenomenon. It is an economic phenomenon.

6. The English Language is a living organism. It is constantly changing and developing. It is a dynamic system. It is a social phenomenon. It is a cultural phenomenon. It is a historical phenomenon. It is a geographical phenomenon. It is a political phenomenon. It is an economic phenomenon. It is a social phenomenon. It is a cultural phenomenon. It is a historical phenomenon. It is a geographical phenomenon. It is a political phenomenon. It is an economic phenomenon.

7. The English Language is a living organism. It is constantly changing and developing. It is a dynamic system. It is a social phenomenon. It is a cultural phenomenon. It is a historical phenomenon. It is a geographical phenomenon. It is a political phenomenon. It is an economic phenomenon. It is a social phenomenon. It is a cultural phenomenon. It is a historical phenomenon. It is a geographical phenomenon. It is a political phenomenon. It is an economic phenomenon.

8. The English Language is a living organism. It is constantly changing and developing. It is a dynamic system. It is a social phenomenon. It is a cultural phenomenon. It is a historical phenomenon. It is a geographical phenomenon. It is a political phenomenon. It is an economic phenomenon. It is a social phenomenon. It is a cultural phenomenon. It is a historical phenomenon. It is a geographical phenomenon. It is a political phenomenon. It is an economic phenomenon.

The prescribed texts will be used as case studies for various aspects of the syllabus. * the Source is given in list of Texts Books given below.

UNIT III :-Group Communication:

- A) Communication: concept, Process and Barriers
- B) Communicating using Standard Pronunciation with the help of IPA
- C) Formal Speaking with peers (e.g. discussion, talks on current issues in a class)
- D) Writing official letters on issues concerning students and social life
- E) Writing small reports on scientific issues, IT issues, University fests/programmes
- F) E-mail writing and writing for web

UNIT IV :-Communicative Creativity:

- A) Comprehension: Extracting, interpreting, summarizing, reviewing and analyzing the prescribed text
- B) Composition: Developing themes and situations through role play activities or dialogue writing.

TEXT BOOKS

1. Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech & Jan Svartvik. *Comprehensive Grammar of the English Language*. London: Longman, 1989
2. Communicative English for Engineers and Professionals by Nitin Bhatnagar & Mamta Bhatnagar. New Delhi: Pearson / Longman
3. Crystal, David. *Rediscover Grammar*. London: Longman/Pearson, 1988.
4. *H U [c f Y ž ' ' F U V] b X Y f " ' ' Ā ? U V i ' '] k U ' ' U \ Ā ' ' ž ' ' : U a c i g ' = b X] Blackswan, 2009. (Web source www.angelfire.com)
5. Ā ' K U ' _ Y f ž ' 5 '] W Y " ' Ā 5 a ' = ' 6 ' i Y Ā ' ž ' 5 b ' 5 b h \ c ' c [m ' c Z ' G ' (Web source www.old.li.scr.u.edu)
6. Ā B U f U m U b U b ' " ? " F " ' Ā 9 b [] b Y ' H f c i V ' Y Ā 3. McRob. New York: U f m ' OUP, 1976. (Web Source www.scribd.com)
7. Ā 7 U f b Y [] Y ž ' ' 8 U ' Y " ' Ā = Z ' m c i ' U f Y ' k f c b [' U X a] h '] h Ā ž ' 5 Ā K. Bhatnagar Delhi : Macmillan India Ltd, 2006.

SUGGESTED READING

1. Pink, M.A. and S.E. Thomas. *English Grammar, Composition and Correspondence*. Delhi: S. Chand and Sons
2. McRae, John and Roy Boardman. *Reading Between the Lines*. Delhi: Foundation Books (Cambridge University Press)
3. Sharma, Sangeeta and Binod Mishra. *Communication Skills for Engineers and Scientists*. Delhi: PHI, 2000.
4. Fitikides, T.J. *Common Mistakes in English*. New York: Pearson Education, 1996.

SCHEME OF END SEMESTER EXAMINATION (MAJOR TEST)

Theory

1. The duration of the exam will be 3 hours.
2. The Question Paper for this theory course shall have seven questions in all covering all the the syllabus..
3. The student is required to attempt all the seven questions.
4. Questions No. 1 based on Unit I is 15 marks. It is a U f _ g " ' = h ' a U m ' V Y '] b e c t e d : Y r a c z t h error, choose the correct alternative, supply the correct alternative/s, change the voice, c speech from direct to indirect or -j i d e f g U Ā "
5. Question no 2 and 3 based on prescribed texts in Unit II. Question 10 marks is to evaluate the comprehension of the text through short answer questions or a long answer question. h \ Y ' g h i X Y b h g Ā ' f Y U X] b [' W c a d f Y \ Y b g] c b ž '] b h Y f d 15 ' marks will judge the linguistic aspect of the text such as using a particular word in its various syntactic forms like noun, adjective, verb etc.; matching the lists of words and their opposites providing opposite/similar meanings and other grammar components prescribed in Unit I syllabus.
6. Question no 4 based on Unit III is 10 marks. It may be in the form of transcription of what is given, describe an event, classmate, discuss an issue etc.
7. Question no 5 based on Unit III is 10 marks. It requires the student to frame either a short paragraph on a topic given or write the given official letter or a message.
8. Question no 6 based on unit IV is 10 marks. It evaluates the Comprehension and Interpretation of the texts prescribed in Unit II. The vocabulary, general understanding and interpretation of the content may be evaluated in the form of question answer exercise, culling out important words suggesting a suitable topic/title, summarising and interpreting.
9. Question No. 7 based on unit IV is 5 marks. It requires the student to develop a hypothetical situation in a dialogue form, or to develop an outline, key expression, for role play. activity

MATH 101B MATHEMATICS - I
B. Tech. Semester - I (Common for all Branches)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75 Marks
				Total	:	100 Mks.
				Duration of Examination	:	3 Hours

UNIT-I

Infinite series : $\sum_{n=0}^{\infty} a_n x^n$, Logarithmic and Cauchy root tests, Alternating series, Absolute and conditional convergence.

Applications of Differentiation : Taylor's and Maclaurin's series, Asymptotes, Curvature Asymptotes

UNIT-II

Partial Differentiation & its Applications : Functions of two or more variables; partial derivatives and differentiability, Derivatives of composite and implicit functions, Jacobian Higher order partial derivatives.

Homogeneous functions, Euler's theorem, Taylor's series for functions of two variables (proof), maxima-minima of function of two variables, Lagrange's method of undetermined multipliers, Differentiation under integral sign.

UNIT-III

Applications of Single & Multiple Integration : Applications of single integration to find volume of solids and surface area of solids of revolution. Double integral, change of order of integration Double integral in polar coordinates, Applications of double integral to find area enclosed by plane curves and volume of solids of revolution.

Triple integral, volume of solids, change of variables, Beta and gamma functions and relationship between them.

UNIT-IV

Vector Calculus : Differentiation of vectors, scalar and vector point functions Gradient of a scalar field and directional derivative, Divergence and curl of a vector field and their physical interpretations.

Integration of vectors, line integral, surface integral, volume integral, Green, Stoke's and Gauss's theorems (without proof) and their simple applications.

TEXT BOOKS :

1. Advanced Engineering Mathematics : F. Kreyszig.
2. Higher Engineering Mathematics : B.S. Grewal.

REFERENCE BOOKS :

1. Engineering Mathematics Part I : S.S. Sastry.
2. Differential and Integral Calculus : Piskunov.
3. Advanced Engineering Mathematics : R.K. Jain and S.R.K. Iyengar
4. Advanced Engg. Mathematics : Michael D. Greenberg

Note:

1. In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), from the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.
2. The use of scientific calculator will be allowed in the examination. However, programmable calculator and mobile phone will not be allowed.

PHY 101B ENGINEERING PHYSICS - I
B. Tech. Semester - I (Common for all Branches)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75 Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

PHYSICAL OPTICS:

Interference: Division of wave front, Young's double slit experiment, interference of light, Michelson interferometer, applications.

Diffraction : Difference between Fraunhofer and Fresnel diffraction, Fraunhofer diffraction through a slit, Plane transmission diffraction grating and its spectra, dispersive and resolving powers.

Polarization : Polarised and unpolarized light, double refraction, Nicol prism, quarter wave plates, Plane, Elliptically & circularly polarised light, Polaroids, Biquartz and Laurent's half shade polarimeters.

UNIT-II

LASER & FIBRE OPTICS: Introduction, Spontaneous and stimulated emissions, Laser characteristics of laser beam, Ruby laser, He-Ne laser and semiconductor lasers, applications of laser.

Introduction, Propagation of light in fibres, Types of fiber (pulse & continuous), numerical aperture, Modes of propagation in optical fibre, application of optical fibre.

ACOUSTIC OF BUILDINGS. Sound intensity, Sound power, Sound pressure level, Reverberation time, Absorption coefficient and its measurements, factors affecting the architectural acoustics and their remedy, Sound absorbing materials.

UNIT-III

TRANSMISSION OF HEAT AND THERMAL RADIATION

Modes of transmission of heat, Thermal conductivity, Rectilinear flow of heat through a rod, Radial flow of heat through a spherical shell, determination of Thermal conductivity of good and poor conductors.

Stefan-Boltzmann law, Wien's displacement law, Kirchhoff's law of radiation, Wien's displacement law, Wien's displacement law.

UNIT-IV

NUCLEAR & ELEMENTARY IDEA OF PARTICLE PHYSICS

Outline of interaction of charged particles and of gamma rays with matter. Counters: Gas filled counter (Ionization Chamber, Proportional Counter and Geiger Counter). Detector: Scintillation detector, Semiconductor detectors (p junction detector), Biological effects of nuclear radiation.

Introduction to elementary particles, Interaction in particle physics: strong, electromagnetic, weak and gravitational.

TEXT BOOKS :

1. A text book of Optics by Brij Lal and Subramanyam
2. Perspectives of Modern Physics by Arthur Beiser (TMH)
3. Engineering Physics by R.K. Gaur and S.L. Gupta
4. Engineering Physics by H.K Malik and A.K. Singh (Tata McGraw Hill).
5. Engineering Physics by S.P. Taneja (Chand Pub.)

REFERENCE BOOKS:

- 1.. Physics Vol I & II by Resnick & Halliday (Wiley Eastern)
2. Heat and Thermodynamics by M.N. Saha & B.N. Srivastava
3. Nuclear Physics Principles and Applications by John Lilley (Wiley).

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit. The use of scientific non programmable calculator will be allowed in the examination.

ME 101B MANUFACTURING PROCESSES
 BTech. Semester I /II (Common for all Branches)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT-I

Introduction: Introduction to Manufacturing Processes and their Classification, automation manufacturing, Industrial Safety; Introduction, Types of Accidents, Causes and Common Sources of Accidents, Methods of Safety, Electric Safety Measures, First Aid.

Plant Layout, Principles of Plant Layout, Objectives of Layout, Types of Plant and layouts and their Advantages.

UNIT-II

Engineering Materials: General Properties and Applications of Engineering Materials, Mild Steel, Medium Carbon Steel, High Carbon Steel, High Speed Steel and Cast Iron Ferrous Materials

Foundry: Introduction to Casting Processes, Basic Steps in Castings, Pattern, Types of Patterns, Pattern allowances, Risers, Runners, Gates, Molding Sand and its composition Preparation, Molding Methods, Core Sands and Core Making, Core Assembly, Mold Assembly Melting (Cupola) and Pouring, Fettling, Casting Defects and Remedies. Testing of Castings

UNIT-III

Cold Working (Sheet Metal Work): Sheet Metal Operations, Measuring, Layout Marking, Shearing, Punching, Blanking, Piercing, Forming, Bending and Joining Advantages and Limitations. Hot Working Processes Introduction to Hot Working, Principles of Hot Working Processes, Forging, Rolling, Extrusion, Wire Drawing.

Introduction to Machine Tools: Specifications and Uses of commonly used Machine Tools Workshop such as Lathe, Shaper, Planer, Milling, Drilling, Slotter, Introduction to Metal Cutting Nomenclature of a Single Points Cutting Tool and Tool Wear, Mechanics of Chips Formation of Chips, Use of Coolants in machining.

UNIT-IV

Welding: Introduction to Welding, Classification of Welding Processes, Gas Welding: Oxy Acetylene Welding, Resistance Welding; Spot and Seam Welding, Arc Welding: Metal Arc, TIG MIG Welding, Welding Defects and Remedies, Soldering & Brazing, Comparisons among Welding and Soldering Surface Finishing Processes Introduction to Heat Treatment Processes Estimating of Manufacturing Cost

TEXT BOOKS

Workshop Technology Vol. I & II - Hazra & Chaudhary, Asian Book Comp., New Delhi.

Process and Materials of Manufacturing Lindberg, R.A. Prentice Hall of India, New Delhi.

Principles of Manufacturing Materials and Processes Campbell, J.S: McGraw-Hill.

REFERENCE BOOKS:

Manufacturing Science Amitabha Ghosh & Ashok Kumar Malik, EastWest Press.

Manufacturing Process and Systems Ostwald, Munoz, John Wiley.

Workshop Technology, Vol. 1, 2 & 3 Chapman, WAJ, Edward Arnold.

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions covering the entire syllabus). The students will be required to attempt 05 questions selecting at least one question from each unit. The use of scientific calculator will be allowed in the examination. However programmable calculator and cellular phone will not be allowed.

CH 101B ENGINEERING CHEMISTRY

B. Tech. Semester I /II (Common for all Branches)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT-I

Thermodynamics | Second law, concept of entropy, entropy change for ideal gas, free energy and work done by a system. Related numerical problems with above topics.

Phase rule - One component system (water system), Two components systems, system with Eutectic point (Ag-Pb system with congruent melting point - Zn), system with incongruent melting point - NaCl. Applications of above systems. Elementary idea of Z refining and Zone levelling

UNIT-II

Water and its treatment- Hardness of water and its determination, units of hardness, alkalinity of water and its determination, related numerical problems, water softening process, mixed bed demineralisation, desalination of water by using different methods.

Corrosion and its prevention: Galvanic & concentration cell, dry and wet corrosion, Electrochemical corrosion, Galvanic corrosion, Pitting corrosion, differential aeration corrosion, water corrosion, stress corrosion, factor effecting corrosion, Preventing measures, electroless Plating of Ni and Cu.

UNIT-III

Polymers and Polymerization: Organic polymers, polymerisation, various types of polymerisation, effect of structure on properties of polymers, preparation and technical applications of thermoplastic (PVC, PVA, Teflon), thermosets (PF, UF & MF) and elastomers (Synthetic Rubber including SBRS, B Buna-N, Thiokol & Polyurethanes), Inorganic polymers (general properties), Silicones, Glass transition temperature

Composite Materials & their application: optical fibres, Fullerenes, organic electronic material, composites materials & their classification, constituents of composites, role of interface in composite materials, durability, fiber Reinforced composite, advantage and applications of composites.

UNIT-IV

Lubricants and fuels: Friction, mechanism of lubrication, classification and properties of lubricant, selection of Lubricants, Definition and classification of fuel, Calorific value and methods of its determination. Analytical methods: Thermal methods; Principle, method and application of TGA, DTA & DSC, interaction of E.M radiation with a molecule and origin of spectrum, Vibrational & electronic spectroscopy (Detailed details are excluded), spectrophotometry, conductometric titrations, elementary discussion of potentiometry.

BOOKS:

1. Physical Chemistry, P.W. Atkins (ELBS, Oxford Press).
2. Physical Chemistry, W.J. Moore (Oxford Longman).
3. Instrumental methods of Chemical Analysis, MERITT & WILLARD (East West Press).
4. Chemistry in Engineering & Tech., Vol.I & II, Rajaram, Kuriacose (TMH)
5. Engineering Chemistry, Shashi Chawla (Dhanpat Rai and co.)
6. Engineering Chemistry, P.C. Jain, Monica Jain (Dhanpat Rai & Co.).
7. Engineering chemistry, S.S Dara (S.chand & co.)

Note:

In the semester examination, the Examiners will set 08 questions in all selecting two from each unit. All candidates will be required to attempt five questions in all selecting one from each unit. All questions will carry equal marks.

EE 101B PRINCIPLES OF ELECTRICAL ENGINEERING
B. Tech. Semester I /II (Common for all Branches)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75 Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-1

D.C. Circuit Analysis: Ohm's Law, Kirchhoff's Laws, Star-Delta or delta-star transformation, Applications of network theorems for DC circuit analysis.

UNIT-II

A.C. Circuits: Sinusoidal signal, Phasors, polar & rectangular, exponential & trigonometric representations, Resistance, Inductance & Capacitance components, behavior of these components in A.C. circuits, Phasor relationship for circuit elements, Impedance & Admittance, instantaneous & peak values, average and RMS values, active power, reactive power, apparent power, power factor, complex power, behavior of AC series, parallel circuits, RL, RC & RLC A.C. circuits (series and parallel), Resonance in series and parallel R-C Circuits, Q-factor, cutoff frequencies & bandwidth.

UNIT-III

Three Phase Circuits: Phase and line voltages and currents, balanced star and delta circuits, power equation, measurement of power by two wattmeter method.

Measuring Instruments: Principle, Construction & working of moving coil type voltmeter, ammeter, moving iron type voltmeter & ammeter, Electrodynamic type wattmeter, induction type energy meter.

UNIT-IV

Transformers: Single phase Transformer, Emf equation, Equivalent circuit, testing, efficiency, regulation of single phase transformer, Auto transformer.

Rotating Machines: Construction and working principle of dc motor and generator and characteristics. Construction and working principle of phase Induction machines & phase synchronous machines, torque-speed characteristics.

TEXT BOOKS:

1. Basic Electrical Engg (2nd Edition): Kothari & Nagarath, TMH
2. Electrical Technology (Vol. 1): B.L Theraja & A K Theraja, S.Chand
3. Fundamental of electrical Engineering, Rajendra Prasad, PHI, Edition 2005.
4. Basic Electrical Engineering, V.N Mittle & Arvind Mittal, TMH, Second Edition
5. Basic Electrical Engineering, S.N. Singh, PHI

REFERENCE BOOKS:

1. Electrical Engineering Fundamentals: Deltoro, PHI
2. Basic Electrical Engineering (TMH WBUT Series), Abhijit Chakrabarti & Sudipta Nath, TMH
3. Basic Electrical Engineering, T.K. Nagsark & M.S. Sukhija, Oxford
4. Introduction to Electrical Engineering, M.S. Naidu & S, Kamakshaiah, TMH

5. Basic Electrical Engineering, J.J. Cathey & S.A Nasar, TMH, Second Edition.

Note: In the semester examination, the examiner will set 08 questions in all selecting two from each unit. The candidates will be required to attempt five questions in all selecting at least one from each unit. All questions will carry equal marks.

B. Tech. Semester I I/II (Common for all Branches)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75 Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

An introduction of Computer System: Anatomy of a digital Computer, Different Units of Computer System
 Classification of Computer Systems, Radix Number systems. Binary codes: BCD, Gray, EBCDIC, ASCII
 Operating System: Operating System Concepts, Operating System services, Types of Operating Systems.
 Introduction to PC Operating Systems: Unix/Linux, DOS, Windows.

UNIT-II

Programming Languages and algorithms: Machine, Assembly and High Level Language; Assembler, Linker, Loader, Compiler, Interpreter, debuggers, Programming fundamentals: problem definition, algorithms, flowcharts and their symbols
 Computer Networks: Basic concepts of Computer Networks, Working of Internet and its Major features. Topologies: Bus, Star, Ring, Hybrid, Tree, Complete, Irregular; Types of Networks: LAN, MAN and WAN.
 Electronic Mail: advantages and disadvantages, email addresses, message components, message composition, mailer features, Email inner workings, Email management, Newsgroups, mailing lists, chat rooms.

UNIT-III

C Fundamentals, Basic data types, local and external variables and scope, formatted input/ output, expression selection statements, loops and their applications; arrays, functions, recursive functions, pointers and Strings literals, arrays of strings; applications, Structures, Unions and Enumerations.

UNIT-IV

C programming (Bitwise operators, Bit fields in structures, other low level techniques), error handling, file operations (low level/high level).

REFERENCE BOOKS:

- The C Programming Language by Dennis M Ritchie, Brian W. Kernigham, 1988, PHI.
- Fundamentals of Computing and C Programming, R. B. Patel, Khanna Publications, 2010, New De
- Computer Fundamentals and Programming in C, Reema Theraja, Oxford
- Information technology, Dennis P. Curtin, Kim Foley, Kunal Sen, Cathleen Morin, 1998, TMH
- Theory and problem of programming with C, Byron C Gottfried, TMH
- Using Computers and Information by Jack B. Rochester, 1996, Que Education & Training.
- C Programming: A modern approach by K.N. King, 1996, WW Norton & Co.

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions covering the entire syllabus). The students will be required to attempt only 5 questions selecting at least one question from each unit. The use of scientific calculator will be allowed in the examination. However, programmable calculator and cellular phone will not be allowed.

ME 103 B ENGINEERING GRAPHICS & DRAWING

B. Tech. Semester I I/II (Common for all Branches)

L	L	P	Credits	Class Work	: 40 Marks
1	1	4	3	Examination	: 60Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT I

Basics of Engineering Graphics and Drawing | Drawing Papers, Minidrafter, Pencils. Drawing Paper Layout, Title Block, Types of Lines, Lettering, Dimensioning, types of Projections; First and Third Angle systems of Orthographic Projections, Projection of Points in different Quadrants.

Projections of Straight Lines | Lines contained by both Reference Planes, Contained by one and inclined to other Reference Plane, Contained by one and Parallel to other Reference Plane, Parallel to both Reference Planes, Perpendicular to one of the Reference Planes, Inclined to one Plane but Parallel to other Reference Planes, Inclined to both the Reference Planes, True Length of a Line and its Inclination to Reference Planes | Traces of a Line.

UNIT II

Projections of Planes | Parallel to one Reference Plane, Inclined to one Plane but Perpendicular to the other, Inclined to both Reference Planes.

Projections of Polyhedral Solids and Solids of Revolution in simple positions with axis perpendicular to a Reference Plane, with axis parallel to both Reference Planes, with axis parallel to one Reference Plane and inclined to the other Reference Plane, Projections of sections of Prisms, Pyramids, Cylinder and Cones. True Shape of Sections of Solids.

UNIT III

Development - Development of Surfaces of various Solids objects.

Free Hand Sketching Orthographic Views from Isometric, Views of Simple Machine Components such as Brackets, Bearing Blocks, Guiding Blocks and Simple Couplings and Pipe Joints.

UNIT IV

Isometric Projections - Introduction, Isometric Scale, Isometric Views and Drawing of various Plane and Solid objects. Perspective drawing and oblique view.

Orthographic Drawings Screw Threads, Bolts, Nuts and Washers, Bolted, Riveted and Welded Joints

TEXT BOOKS

1. Engineering Drawing: MB Shah and BC Rana, Pearsons
2. Engineering Graphics and Drafting: P.S. Gill, S.K. Kataria and Sons.

REFERENCE BOOKS

1. A Text Book of Engineering Drawing: RK Dhawan, S Chand & Company
2. Engineering Drawing Plane and Solid Geometry : N.D. Bhatt, Charotar Publishing House

Note:

1. For class work, the students shall be assigned to prepare at least ten drawing sheets covering all units and each topic of the syllabus.
2. For practical examination, the examiner will set a question paper containing total eight questions from each unit covering each topic of the syllabus; students are required to attempt five questions at least one from each unit.

ME 105 B ELEMENTS OF MECHANICAL ENGINEERING
B. Tech. Semester I /II (Common for all Branches)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

Thermodynamics- Elementary definitions in thermodynamics, fundamentals of first and 2nd law of thermodynamic concept of internal energy, enthalpy and entropy, heat pump and refrigerator elementary numerical problems.

Properties of Steam & Boilers: properties of steam, use of steam tables and mollier diagram measurement of dryness fraction of steam, Carnot and Rankin cycle, elementary numerical problems. Classification of boilers, Comparison of water and fire tube boilers mounting accessories with their functions, Constructional and operational details of Cochran and Babcock Wilcox boilers, elementary numerical problems.

Steam Turbines and Condensers: Classification of turbines and their working principles, Types of condensers and their uses.

UNIT-II

I.C. Engines and Gas Turbines: Introduction, Classification, Constructional details and working principle of two-stroke and four-stroke diesel and petrol engines, Efficiency of Otto & Diesel cycle, Working principle of gas turbine, elementary numerical problems.

Refrigeration and air conditioning: Working of refrigeration machine, coefficient of performance, simple vapor compression cycle, fundamentals of air conditioning, use of Psychrometric chart.

UNIT-III

Water Turbines and Pumps : Introduction, Classification, Construction details and working principle of Pelton, Francis and Kaplan turbines, Classification of water pumps and construction detail & working principle of centrifugal pump.

Simple Lifting Machines: Definition of machine, Velocity ratio, Mechanical advantage, Efficiency, Laws of machines, Reversibility of machine, Wheel and axle, Differential pulley block, Single and double start worm and worm wheel, Single and double purchase winch crabs, Simple and compound screw jacks, elementary numerical problems.

UNIT-IV

Introduction to Power transmission and Devices: Belt drive, Rope drive, Chain drive, Types of gear and Gear train, Types and function of clutches, Types and function of brakes.

Stress and strains in simple and compound bars under axial loading, Stress diagrams, Hooke's law, Elastic constants & their relationships, Concept of shear force and bending moments in beams elementary numerical problems.

TEXT BOOKS:

Hydraulic and Fluid Mechanics, Modi and Seth, Pub. Standard Book House, New Delhi

Engineering Thermodynamics, C.P. Arora, Pub.- TMH, New Delhi

Thermal Engineering, A.S. Sarad, Pub.- Satya Prakashan, New Delhi.

Engineering Mechanics, K.L. Kumar, Pub. - TMH, New Delhi.

Theory of Machines, S.S. Rattan, Pub. TMH, New Delhi.

REFERENCE BOOKS:

Strength of Materials, Popov, Pub.- PHI, New Delhi.

Hydraulic Machines, Jagdish Lal, Pub. Metropolitan, Allahbad.

Thermal Science and Engineering, D.S. Kumar, Pub. Kateria & Sons, New Delhi.

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit. The use of scientific calculator will be allowed in examination. However, programmable calculator and cellular phone will not be allowed.

B. Tech. Semester - I (Common for all Branches)

L	T	P	Credits	Class Work	:	20Marks
--	--	2	1	Examination	:	30Marks
				Total	:	50 Marks
				Duration of Exam.	:	3 Hours

Note: Students will be required to perform 10 experiments in a semester.

LIST OF EXPERIMENTS

- To find the wavelength of sodium light by using Newton's rings experimental setup.
- To find the wavelength of sodium light by Fresnel's biprism experimental setup
- To find the wavelength of various colours of white light with the help of a plane transmission diffraction grating.
- To find the refractive index and Cauchy's constants of a prism by using spectrometer
- To find the wavelength of sodium light by using Michelson interferometer.
- To find the resolving power of a telescope.
- To find the pitch of a screw using a laser.
- To find the specific rotation of sugar solution by using a polarimeter.
- To compare the capacitances of two capacitors by De'sauty bridge.
- To find the flashing and quenching potentials of Argon and also to find the capacitance of unknown capacitor.
- To study the photo conducting cell and hence to verify the square law.
- To find the temperature coefficient of resistance by using platinum resistance thermometer and Callender and Griffith bridge.
- To find the frequency of A.C. mains by using sonometer.
- To find the velocity of ultrasonic waves in nonconducting medium by piezoelectric method.
- To determine the coefficient of thermal conductivity of a bad conductor by Lee and Charlton method.

RECOMMENDED BOOKS :

- Advanced Practical Physics B.L. Worshnop and H.T. Flint (KPH)
- Practical Physics S.L.Gupta & V.Kumar (Pragati Prakashan).
- Advanced Practical Physics Vol.I & II Chauhan & Singh (Pragati Prakashan).

ME 107B WORKSHOP PRACTICE

B. Tech. Semester I /II (Common for all Branches)

L	T	P	Credits	Class Work	:	40 Marks
--	--	4	2	Examination	:	60Marks
				Total	:	100 Marks
				Duration	of	3 Hours
				Examination		

LIST OF EXPERIMENTS / JOBS

1. To study different types of measuring tools/instruments used in metrology and determine least count: vernier calipers, micrometers and vernier height gauges.
2. To study different types of machine tools (the shape, planer, slotter, milling, drilling machines)
3. To prepare a job on a lathe involving facing, outside turning, taper turning, step turning, radius and parting off.
4. To study different types of fitting tools and marking tools used in practice.
5. To prepare lay out on a metal sheet by making and prepare rectangular tray, pipe shaped compor funnel.
6. To prepare joints for welding suitable for butt welding and lap welding.
7. To study various types of carpentry tools and prepare simple types of at least two wooden joints.
8. To prepare simple engineering components/ shapes by forging.
9. To prepare mold and core assembly, to put metal in the mold and fettle the casting.
10. To prepare horizontal surface/ vertical surface/ curved surface/ slots/grooves on a shaper/ planner.
11. To prepare a job involving side and face milling on a milling machine.
12. To study of CNC lathe, CNC Milling and EDM Machines.

- Note:
1. At least ten experiments/ jobs are to be performed/ prepared by students in the sem
 2. At least 8 experiments/ jobs should be performed / prepared from the above list, remain may either be performed/ prepared from the above list or designed and set as per the the syllabus of Manufacturing Processes

B. Tech. Semester I I/II (Common for all Branches)

L	T	P	Credits	Class Work	: 20 Marks
--	--	2	1	Examination	: 30Marks
				Total	: 50 Marks
				Duration	of : 3 Hours
				Examination	

LIST OF EXPERIMENTS

1. Determination of Ca⁺⁺ and Mg⁺⁺ hardness of water sample using EDTA solution.
2. Determination of alkalinity of water sample.
3. Determination of dissolved oxygen (DO) in the given water sample.
4. To find the melting and eutectic point for a two component system by using method of cooling curve.
5. Determination of viscosity of lubricant by red wood viscometer (No. 1 & No. 2).
6. To determine Flash point & Fire point of an oil by Pensky Martens apparatus.
7. To prepare Phenol formaldehyde and urea formaldehyde resin.
8. To find out saponification No. of an oil.
9. Determination of concentration of KMnO₄ solution spectrophotometrically.
10. Determination of strength of HCl solution by titrating it against NaOH solution conductometrically.
11. To determine amount of sodium and potassium in a given water sample by flame photometer.
12. Estimation of total iron in an iron alloy.

Suggested Books:

1. A Text book on Experiments and Calculations in Engineering Chemistry by S.S.Dara, S.Chand & Company Ltd.
2. Essential of Experimental Engineering chemistry, Shashi Chawla, Dhanpat Rai Publishing Co.
3. Theory & Practice Applied Chemistry O.P.Virman, A.K. Narula (New Age).

Note:

1. The student will be required to perform experiments/exercises from the above list and any other experiments designed by the department based on the theory course (course code 101B Cou Chemistry)
2. The students will be allowed to use non-programmable scientific calculator. However, sharing/exchange of calculator are prohibited in the examination.
3. Electronic gadgets including Cellular phones are not allowed in the examination.

B. Tech. Semester I /II (Common for all Branches)

L	T	P	Credits	Class Work	: 20 Marks
--	--	2	1	Examination	: 30Marks
				Total	: 50 Marks
				Duration of Examination	: 3 Hours

LIST OF EXPERIMENTS

1. To verify KCL and KVL.
2. H c ' j Y f] Z m' H \ Y j Y b] b Ñ g ' / ' B c f h c b fi g ' H \ Y c f Y a g "
3. To verify maximum power transfer theorem in D.C. Circuit.
4. To verify reciprocity theorem.
5. To verify Superposition theorem
6. To study frequency response of a series R-C circuit and determine resonant frequency & Q-factor for various Values of R, C.
7. To study frequency response of a parallel R-L-C circuit and determine resonant frequency & Q-factor for various values of R, C.
8. To perform direct load test of a transformer and plot efficiency Vs load characteristic.
9. To perform direct load test of a D.C. shunt generator and plot load vs load current curve.
10. To study various type of meters.
11. Measurement of power by three voltmeter / three ammeter method.
12. Measurement of power in three phase system by two watt meter method.

Note:

1. At least 10 experiments are to be performed by student in the semester.
2. At least 8 experiments should be performed from the above list; remain in experiments may either be performed from the above list or designed and set Dept. as per the scope of the syllabus of EE101B.

B. Tech. Semester I I/II (Common for all Branches)

L	T	P	Credits	Class Work	: 20 Marks
--	--	2	1	Examination	: 30Marks
				Total	: 50 Marks
				Duration of Examination	: 3 Hours

LIST OF PRACTICAL PROBLEMS

1. Write a program to find the largest of three numbers (if-else)
2. Write a program to find the largest number out of ten numbers (for)
3. Write a program to find the average male height & average female heights in the class (input is in form of code, height)
4. Write a program to find roots of quadratic equation using functions and switch statements.
5. Write a program using arrays to find the largest and second largest no. out of given 50 nos.
6. Write a program to multiply two matrices.
7. Write a program to sort numbers using the Quicksort Algorithm.
8. Represent a deck of playing cards using arrays.
9. Write a program to check that the input string is a palindrome or not.
10. Write a program to read a string and write it in reverse order.
11. Write a program to concatenate two strings.
12. Write a program which manipulates structures (write, read, and update records).
13. Write a program which creates a file and writes into it supplied input.
14. Write a program which manipulates structures into files (write, read, and update records).

Note: At least 5 to 10 more exercises to be given by the teacher concerned

ME 109 B ELEMENTS OF MECHANICAL ENGINEERING LAB.

B. Tech. Semester I I/II (Common for all Branches)

L	T	P	Credits	Class Work	: 20 Marks
--	--	2	1	Examination	: 30Marks
				Total	: 50 Marks
				Duration of Examination	: 3 Hours

LIST OF EXPERIMENTS

1. To study Cochran & Babcock & Wilcox boilers.
2. To study the working & function of mountings & accessories in boilers.
3. To study 2Stroke & 4Stroke diesel engines.
4. To study 2Stroke & 4Stroke petrol engines.
5. To calculate the V.R., M.A. & efficiency of single, double & triple start worm & worm wheel.
6. To calculate the V.R., M.A. & efficiency of single & double purchase winch crabs.
7. To draw the SF & BM diagrams of a simply supported beam with concentrated loads.
8. To study the simple & compound screw jacks and find their MA, VR & efficiency.
9. To study the construction, features & working of Pelton Turbine.
10. To prepare stress-strain diagram for mild steel & cast iron specimens under tension and compression respectively on a Universal testing machine.

Note: 1. Total ten experiments are to be performed in the Semester.

2. At least eight experiments should be performed from the above list. Remaining three experiments should be performed as designed & set as per the scope of the syllabus of Elements of Mechanical Engineering.

MATH102B MATHEMATICS - II

B. Tech. Semester - II (Common for all Branches)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration	of :	3 Hours
				Examination		

UNIT-I

ORDINARY DIFFERENTIAL EQUATIONS & ITS APPLICATIONS : Exact differential equation Equations reducible to exact differential equations. Applications of differential equations of first order first degree to simple electric circuits, Newton's law of cooling, heat flow and orthogonal trajectory. LINEAR DIFFERENTIAL EQUATIONS OF SECOND AND HIGHER ORDER. Complete solution, complementary function and particular integral, method of variation of parameters to find particular integral, Cauchy's and Legendre's linear equations, simultaneous linear equations with constant coefficients.

UNIT-II

LAPLACE TRANSFORMS AND ITS APPLICATIONS : Laplace transforms of elementary functions, properties of Laplace transforms, existence conditions, transforms of derivatives, transforms of multiplication by t^n , division by t . Evaluation of integrals by Laplace transforms. Laplace transform of unit step function, unit impulse function and periodic function. Inverse transforms, convolution theorem, application to linear differential equations and simultaneous linear differential equations with constant coefficients.

UNIT-III

FUNCTIONS OF COMPLEX VARIABLE : Definition, Exponential function, Trigonometric and Hyperbolic functions, Logarithmic functions. Limit and Continuity of a function, Differentiability, Analyticity. Cauchy-Riemann equations, necessary and sufficient conditions for a function to be analytic. Polar form of the Cauchy-Riemann equations. Harmonic functions, application to flow problems. Integration of complex functions. Cauchy's integral theorem and formula. Power series, radius and circle of convergence, Taylor's Maclaurin's and Laurent's series. Zero singularities of complex functions, Residues

UNIT-IV

FOURIER SERIES AND FOURIER TRANSFORMS : Fourier expansion, change of interval, Fourier expansion of odd and even functions, Fourier expansion of a wave, rectangular wave, sawtoothed wave, half and full rectified wave, half range sine and cosine series.

Fourier integrals, Fourier transforms, Shifting theorem (both on time and frequency axes), transforms of derivatives, Fourier transforms of integrals, Convolution theorem, Fourier transform of Dirac-delta function.

TEXT BOOKS :

1. Advanced Engg. Mathematics F Kreyszig
2. Higher Engg. Mathematics B.S. Grewal

REFERENCE BOOKS:

1. Differential Equations H.T.H. Piaggio.
2. Elements of Partial Differential Equations N. Sneddon.
3. Advanced Engineering Mathematics R.K. Jain, S.R.K. Iyengar.
4. Advanced Engg. Mathematics Michael D. Greenberg.

Note:

1. In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.
2. The use of scientific calculator will be allowed in the examination. However, programmable calculator and cellular phone will not be allowed.

PHY 102B ENGINEERING PHYSICS II
B. Tech. Semester - II (Common for all Branches)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75 Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

ELECTRODYNAMICS & QUANTUM PHYSICS:-

Maxwell's equations (both differential and integral form), plane e.m. wave equations in free space, dielectric and conducting medium; Poynting vector.

Difficulties with Classical physics, Introduction to quantum mechanics concepts, Black Body radiations, Photoelectric effect, Schrodinger wave equations, Application of Schrodinger Equations (Particle in a box).

UNIT-II

CRYSTAL STRUCTURE

Space Lattice, unit cell and translation vectors, Miller indices, Bravais lattice structure in 3D, simple crystal structure (NaCl, ZnS and CsCl₂), Elementary idea of reciprocal lattice, Ewald Constructive Interference, Experimental x-ray diffraction method, Laue method, powder Method.

FREE ELECTRON THEORY

Free electron theory of metals, Fermi level, Density of states, Fermi distribution function, Thermionic emission, Richardson's equation.

UNIT-III

BAND THEORY OF SOLIDS

Origin of energy bands, Kronig-Penney Model (qualitative), Energy band diagrams, Brillouin Zones, Concept of effective mass and holes, Classification of solids into metals, Semiconductors and insulators, Fermi energy and its variation with temperature, Conduction in Intrinsic and Extrinsic Semiconductors. Hall Effect and its Applications.

UNIT-IV

SUPERCONDUCTIVITY & NANOSCIENCE

Introduction to superconductivity, Critical temperature, Meissner Effect, Types of Superconductors, London Equations, penetration depth and coherence length, BCS Theory (qualitative ideas), High temperature superconductors.

Concept of Nanomaterials, Size dependence of band gap, Top-down and bottom-up approach for preparing nanomaterials, MEMS & NEMS, Properties and applications of Fullerene, Graphene, CNT, Nanowires, Nanocomposites, Quantum dots..

TEXT BOOKS :

1. Solid State Physics by S.O.Pillai (6th Edition, New Age).
2. Quantum Mechanics by Ghatak & Loknathan.
3. Fundamentals of Solid State Physics by B.S.Saxena, R.C.Gupta & P.N.Saxena (Pragati Prakashan).
4. Solid State Physics by H. Ibach & H. Luth, Springer, Berlin.
5. Engineering Physics by H.K Malik and A.K. Singh (Tata McGraw Hill).
6. Engineering Physics by S.P. Taneja (Chand Pub.)

REFERENCE BOOKS :

1. Introduction to Solid State Physics (VII Ed) Charles Kittel (John Wiley).
2. Quantum Mechanics by Powell and Crasemann (Oxford & IBH)
3. Classical Electrodynamics by S.P. Puri (Narosa)
4. Nanotechnology Molecularly Designed Materials: G. M. Chowdhury & K. E. Gonsalves (American Chemical society).

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions) covering the entire syllabus. The students will be required to attempt only 5 questions at least one question from each unit.

ECE 102B BASICS OF ELECTRONICS ENGINEERING
B. Tech. Semester I II (OPTIONAL- Common for all Branches)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Exam	: 3 Hours

UNIT I

Semiconductor Physics, Diodes and Applications: Basic concepts, intrinsic and extrinsic semiconductors, diffusion and drift currents, Hall effect and its applications, p-n junction under open circuit, reverse bias and forward bias conditions, p-n junction in the breakdown region, ideal diode, types of diodes: Zener diode, varactor diode, LED and photodiode. Rectifier (half wave and full wave).

Amplifiers: Introduction of different types of BJT amplifiers & their characteristics.

UNIT II

Operational Amplifiers: Op-amps, its characteristics, inverting, non-inverting, summing, averaging, scaling, difference, integrator and differentiator amplifiers.

Power Supplies: Introduction and working of switched mode power supply (SMPS) type regulator.

UNIT III

Digital Electronics: Binary, Octal and Hexadecimal number system and conversion, Boolean algebra, truth tables of logic gates AND, OR, NOT, EX-OR, EX-NOR, NAND, NOR AND their implementation using diodes, transistors, switches and chips, Universal gates.

Electronic Instruments: Transducers, Role, importance and applications of general purpose test instruments viz. multi meter (digital and analog), cathode ray oscilloscope (CRO), function/ signal generator.

UNIT IV

Communication System: Modulation, need of modulation, Block diagram of basic communication system, overview of AM, FM and PM.

Microprocessor: Basics of 8085 & its architecture. Instruction set, Interrupts, Addressing modes.

REFERENCE BOOKS:

1. G. Y. X. f. U. 5. G. U. b. X. G. Ya.] h. Wh. f. c. b.] W. 7. A.] f. W. i. c.] h. g. I. B. Y. k. M. c. f. _ " C. I. Z. c. f. H. c. W. W.] F. > U. b. X. k.] X. b. Y. f. I. B. f. G. b. W. B. d.] Y. g. U. U. b. X. m. G. d. d. a. g. W. U. h.] c. b. g. I. Delhi.

2. 7. c. c. d. Y. f. U. b. X. < Y. Z. f.] W. z. I. A. c. X. Y. f. b. 9. Y. Wh. f. c. b.] W. g. I. = " b. g. D. f. Y. b. Y. j. W. Y. New Delhi.

3. 6. c. m. Y. g. h. U. X. U. b. X. B. U. g. \ Y. Y. g. _ m. z. I. 9. Y. Wh. f. c. b.] W. 8. Y. j.] W. Y. g. U. b. X. A.] a. U. b. U. b. X. ; f. U. V. Y. z. I. A.] W. f. c. Y. Y. Wh. f. c. b.] W. g. I. z. H. U. h. U. A. W. ; f. l. A.] a. U. b. U. b. X. < U. _] U. g. z. I. 9. Y. Wh. f. c. b.] W. g. I. A. W. j. f.] U. W. Y. g.] U. b. X. 7.] f. V. ? Y. b. b. Y. X. m. U. b. X. 8. U. j.] g. z. I. 9. Y. Wh. f. c. b.] W. 7. c. a. a. i. b.] W. U. h.] c. b. G. m. g. h. Y. F. U. a. Y. g. \ G. ; U. c. b. _ U. f. z. I. A.] W. f. c. d. f. c. W. Y. g. g. c. f. 5. f. W. \] h. Y. Wh. i. f. Y. Z. D. International Publishing.

Note:

In the semester examination the examiner will set two questions from each unit (total 08 questions), covering the entire syllabus. The students will be required to attempt only 5 questions with at least one question from each unit.

The use of scientific calculator will be allowed in the examination. However, programmable calculator and cellular phone will not be allowed.

BT 102B BASICS OF BIOTECHNOLOGY
B. Tech. Semester I II (OPTIONAL- Common for all Branches)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75Marks
				Total	:	100 Marks
				Duration of Exam.	:	3 Hours

UNIT I

Introduction: Nature and scope of Biotechnology.

Cell Structure and Function: Prokaryotes and Eukaryotes cell wall, cell membrane, nucleus, mitochondria, chloroplast, ribosome, vacuoles, bacteria and viruses: brief descriptions.

Biomolecules: A brief account of structure and functions of carbohydrates, lipids, proteins.

UNIT II

Cell Division: Mitosis and meiosis

Genes and chromosomes: Classical A Y b X Y linkage, chromosomes, nature of genetic material, DNA and RNA as genetic material, concept of organization of genetic material into chromosomes.

DNA replication: DNA polymerases, replication mechanism.

UNIT-III

Gene Expression: Central dogma, genetic code, gene expression, a brief account of transcription and translation, housekeeping genes, mutations and their molecular basis.

Genetic Engineering: An introduction to genetic engineering: cloning (vectors, enzymes), DNA and gene libraries, transgenics, DNA fingerprinting, genomics.

UNIT IV

Applications of Biotechnology : Bioprocess and fermentation technology, cell culture, enzyme technology, biological fuel generation, single cell protein, sewage treatment, environmental biotechnology, biotech and medicine, biotechnology in agriculture & forestry industry, food and beverage technology, product biological inventions, safety in biotechnology.

TEXT/ REFERENCE BOOKS:

Biotechnology, Smith, Cambridge Press.

Modern Concepts of Biotechnology, H. D. Kar, Vikas Publishing House (P) Ltd.

Elements of Biotechnology, P. K. Gupta, Rastogi Publications.

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions covering the entire syllabus) students will be required to attempt only 5 questions selecting at least one question from each unit.

The use of scientific calculator will be allowed in the examination. However, programmable calculator cellular phone will not be allowed

HUM 102B ORAL COMMUNICATION SKILLS
B. Tech. Semester I II (OPTIONAL- Common for all Branches)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

OBJECTIVE

To train students to have proficiency in oral communication through interpersonal communicative situation

COURSE CONTENT

UNIT I

Essentials of Speaking Skills:

Familiarity with phonetic sound symbols; Transcription of simple words using International Phonetic Alphabet
Use of dictionary to cultivate standard pronunciation and develop phonetic discrimination

UNIT II

Speaking Skills:

Need and Significance of Effective Oral Communication; Practice of Conversational, Interpersonal and Telephonic
Conversation; Formal Group Discussion

UNIT III

Non-Verbal Elements in Oral Communication Skills:

Reading Face, eyes, gesture and body posture, time, space and culture in communicative situations; ;
verbal and nonverbal communication (Body Language) to acquire effective communication;

UNIT IV

Listening Skills:

Essentials of Good Listening, Types of Listening, Barriers in Effective listening, Exercises in

Listening to Talk Shows, Speech Reviews; Practice in English Sounds and

Speech using RP/MRP

RECOMMENDED READING

1. Buck, Gary. *Assessing Listening*. Delhi: Foundation Books (Cambridge University Press), 200.
2. Balasubramanian, T. *A Textbook of English Phonetics for Indian Students*. Chennai: MacMillan, 1981
(rpt 2007).
3. Gangal, J.K. *A Practical Course in Spoken English*. New Delhi: PHI, 2011
4. Raman, Meenakshi and Sangeeta Sharma. *Communication Skills*. Delhi: OUP, 2011
5. Ribbens, Geoff and Richard Thompson. *Body Language*. New York: Hodder & Stoughton, 2007.

CE 102B BASICS OF CIVIL ENGINEERING

B. Tech. Semester I II (OPTIONAL- Common for all Branches)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Exam.	: 3 Hours

UNIT - I

Materials for Construction: Stones, Sands, Lime, Bricks, Timber, Steel their Classification and Properties. Different Types of Cement and their Properties, manufacturing of Cement, Concrete, and properties of Concrete, I of Concrete and Their Functions
Component parts of a Building, Foundation, Masonry Works, Doors and Windows, Roofs, DPC, Building Services

UNIT - II

Surveying , Introduction to Surveying: Definition, importance, classification of surveys, Principle, Le definitions of terms used in leveling, different types of levels, Contours, Definition, representation of horizontal equivalent, contour interval, characteristics of contours, methods of contouring, contour grade of contour maps, Introduction to GIS, GPS and Remote sensing

UNIT - III

Transportation: Various modes and means of transport, Different types of transport systems, Importance of road transport, History of Road Development, Indian Road Congress Main features of 20 years road development plans in India, PMGSY
Sources of power, estimation of water power, water budget equation, necessity and importance of harnessing solar hydro power plants, Dams, Types of Dams, Location and Impact assessment of a Dam project

UNIT - IV

Geotechnical Engineering History and its applications, Soil Properties, Classification of Soil, Geotechnical and Geophysical investigation of Soil
Irrigation Engineering: Necessity, advantages, disadvantages, impact of irrigation on human environment and development of irrigation in India

TEXT BOOKS:

1. Basic Civil Engineering, Satheesh Gopi, Pearson
2. Basic Civil Engineering, Dr. B.C. Punmia Ashok Kumar Jain, Arun Kr. Jain, Firewall Media

REFERENCE BOOKS:

1. Surveying by Prof. N. Singh, Tata McGraw Hill, New Delhi
2. Basic Civil Engineering, Rakesh Beohar, Firewall Media
3. Highway Engg. by S.K. Khanna & C.e.G. Justo, Nem Chand & Bros, Roorkee
4. Water Resources Engineering by Linseley and Franzini
5. Basic Civil Engineering L.G. Kulkarni A. D. Pawar S. P. Nitsur, Technical Publications.

Note:

1. In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each
2. The use of scientific calculator will be allowed in the examination. However, programmable calculator and cell will not be allowed.

B. Tech. Semester - II (Common for all Branches)

L	T	P	Credits	Class Work	: 20 Marks
--	--	2	1	Examination	: 30Marks
				Total	: 50 Marks
				Duration of Examination	: 3 Hours

Note: Students will be required to perform 10 experiments in a semester.

LIST OF EXPERIMENTS

1. To find the low resistance by Carey's bridge.
2. To find the value of high resistances by Substitution method.
3. To find the value of high resistances by Leakage method.
4. To study the characteristics of a solar cell and to find the fill factor.
5. To find the value of e/m for electrons by Helical method.
6. To find the ionisation potential of Argon/Mercury using a thyratron tube.
7. To study the variation of magnetic field with distance and to find the radius of coil by Stewart and Gee's apparatus.
8. To study the characteristics of Fe-Cu-Constantan thermocouple.
9. To find the value of Planck's constant by using a photoelectric cell.
10. To find the value of coefficient of self-inductance by using a Rayleigh bridge.
11. To find the value of Hall coefficient of semiconductor.
12. To study the VI characteristics of diode.
13. To find the band gap of intrinsic semiconductor using four probe method.
14. To calculate the hysteresis loss by tracing a B-H curve.
15. To verify the Truth Table of various Logic Gates.

RECOMMENDED BOOKS :

1. Advanced Practical Physics B.L. Worshnop and H.T. Flint (KPH)
2. Practical Physics S.L.Gupta & V.Kumar (Pragati Prakashan).
3. Advanced Practical Physics Vol.I & II Chauhan & Singh (Pragati Prakashan).

GP 102B GENERAL PROFICIENCY & ETHICS
B. Tech. Semester I II (Common for all Branches)

L	T	P	Credits	Class Work	:	50Marks
--	--	--	2	Total	:	50 Marks

The purpose of this course is to inculcate a sense of professionalism in a student along with personality development in terms of quality such as receiving, responding, temperament, attitude and outlook. The student efforts will be evaluated on the basis of his/ her performance / achievements in different walks of life.

The evaluation will be made by the panel of experts/ teachers, preferably interdisciplinary to be appointed by the Dean of the concerned faculty/ Director of the concerned affiliated College. A Faculty Counselor will be attached to a group of students which will remain associated with him /her during the entire period of the degree program in the University. Each faculty member will serve as a faculty counselor. They will act like a local guardian for the students associated with him / her and will help them in terms of career guidance, personal and academic difficulties.

A. The student will present a written report before the committee with following in view:

The student will present before the committee his/her achievements during the current session in the form of a written report highlighting followings:

- | | | |
|-----|--|------------|
| I. | Academic Performance | ----- |
| II. | Extra Curricular Activities /Community/Hostel work | (8Marks) |
| III | Technical Activities/Industrial ,Educational Tours | (8 Marks) |
| IV | Sports Games | (4 Marks) |
| V | Moral Values& Ethics | (10 Marks) |

NOTE: Report submitted by the students should be typed on both sides of the paper.

B. A student will support his/her achievement and verbal & communicative skill through presentation before the committee. (20 Marks)

C. Moral values & Ethics

Syllabus - Introduction to Value Education. Understanding ethics, value system, happiness, prosperity
A minor test/ Quiz will be conducted and it will be the duty of the concerned teacher assigned to teach Moral values & Ethics to submit the awards to respective chairman of the department/Director/Principal.
The evaluation of this course will be made by the following Committee.

University Departments:

- | | | |
|---|-------------------------------|----------|
| 1 | Chairperson of the Department | Chairman |
| 2 | Senior Most Faculty Counselor | Member |
| 3 | Vice-Chancellor | Member |

Affiliated Colleges:

- | | | |
|---|---|----------|
| 1 | Director/Principal | Chairman |
| 2 | Head of the Department/Sr. Faculty | Member |
| 3 | External Examiner to be appointed by the University | Member |

Note: Remuneration will be paid to the external examiner only (at par with the other practical examinations).

MGT 201B ENGINEERING ECONOMICS

B. Tech. Semester I III (Common for all Branches Except BT& BME)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT-I

Definition of economics, various definitions, nature of Economic problem, Micro and macro economics, their feature and scope, production possibility curve, Economic laws and their nature. Relation between Science, Engineering Technology and Economics. Concept and measurement of utility, Law of Diminishing Marginal Utility, Law-of equi-marginal utility, its practical application and importance

UNIT-II

Meaning of Demand, Individual and Market demand schedule, Law of demand, shape of demand curve. Elasticity of demand, measurement of elasticity of demand, factors effecting elasticity of demand, practical importance and application of the concept of elasticity of demand. Various concepts of Fixed cost, variable cost, average cost, marginal cost, money cost, real cost, opportunity cost. Shape of average cost, marginal cost, total cost etc. in short and long run.

UNIT III

Meaning of production and factors of production; Law of variable proportions, Law of Return to Scale, Internal and External economics and diseconomies of scale. Meaning of Market, Type of Market Competition, Monopoly, Oligopoly, Monopolistic competition (Main features of these markers).

UNIT-IV

Supply and Law of Supply, Role of Demand & Supply in Price Determination and effect of changes in demand and supply on prices. Nature and characteristics of Indian economy, privatization, merits and demerits. Globalisation of India economy, merits and demerits. Elementary Concept of WTO & TRIPS agreement, Monetary Policy & Fiscal Policy

TEXT BOOKS:

1. 5 \ i ^ U ' < " @ I A] Wf c ' 9 Wc a c a] W ' H \ Y c f m I ' G " : 7 \ U b X ' D i V `] W U h] c b z ' 8 Y k Y h h ' ? " ? ' I A c X Y f b ' 9 Wc a c a] W ' H \ Y c f m I ' G " : 7 \ U b X ' D i V `] W U h] c b z ' 8 Y k Y h h ' ? " ? ' I A c X Y f b ' A] i P u b l i c a t i o n M u m b a i] W g I ' D f U [U h
2. 8 Y k Y h h ' ? " ? ' I A c X Y f b ' 9 Wc a c a] W ' H \ Y c f m I ' G " : 7 \ U b X ' D i V `] W U h] c b z ' 8 Y k Y h h ' ? " ? ' I A c X Y f b ' A] i P u b l i c a t i o n M u m b a i] W g I ' D f U [U h
3. Jain T.R, Grover M.L, Ohri V.K? \ U b b U ' C " D z I ' 9 Wc b c a] Wg ' Z c f ' Y b [] b Y Y f g I ' J " ? ' I A] Wf c ' 9 Wc a c a] W ' H \ Y c f m I ' G " : 7 \ U b X ' D i V `] W U h] c b z ' 8 Y k Y h h ' ? " ? ' I A c X Y f b ' A] i P u b l i c a t i o n M u m b a i] W g I ' D f U [U h

REFERENCE BOOKS:

1. > \] b [U b ' : A " @ I A] Wf c ' 9 Wc a c a] W ' H \ Y c f m I ' G " : 7 \ U b X ' D i V `] W U h] c b z ' 8 Y k Y h h ' ? " ? ' I A c X Y f b ' A] i P u b l i c a t i o n M u m b a i] W g I ' D f U [U h
2. 7 \ c d f U ' D " B ' I D f] b W] d ` Y ' c Z ' 9 Wc b c a] Wg I ' ? U ` m U b] ' D i V `] g \ Y f g z ' 8 Y k Y h h ' ? " ? ' I A c X Y f b ' A] i P u b l i c a t i o n M u m b a i] W g I ' D f U [U h
3. A] g \ f U ' G " ? ' I A c X Y f b ' A] i P u b l i c a t i o n M u m b a i] W g I ' D f U [U h
4. 8 k] j Y X] ' 8 " B ' I A] Wf c ' 9 Wc b c a] Wg ' I ' D Y U f g c b ' 9 X i W U h] c b z ' B Y k Y h h ' ? " ? ' I A c X Y f b ' A] i P u b l i c a t i o n M u m b a i] W g I ' D f U [U h

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions in all) covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

CSE201B DATA STRUCTURES

B. Tech. Semester I III (Information Technology) (Common with CSE,ECE AEI)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT I

Basic Terminology: Elementary Data Organization, Data Structure Operations

Arrays: Array Definition and Analysis, Representation of Linear Arrays in Memory, Traversing of Linear Arrays, Insertion and Deletion, Single Dimensional Arrays, Two Dimensional Arrays, Multidimensional Arrays, Sparse Matrix.

Stacks and Queues: Operations on Stack: Push, Pop, Peep, Representation of stacks. Application of stacks in postfix expression and their compilation conversion of infix expression to prefix and postfix expression, Tower of Hanoi problem, Representation of Queues, Operations on queues: Create, Add, Delete, Priority Queues, Dequeues, Circular Queue.

UNIT II

Linked Lists: Singly linked lists: Representation of linked lists in memory, Traversing, Searching, Insertion into, Deletion from linked list, Polynomial Addition, Header Linked List, Doubly linked list, generalized list.

UNIT III

Trees: Basic Terminology, Binary Trees and their representation, postfix expression evaluation, Complete Binary trees, Extended binary trees, Traversing binary trees, Searching, Insertion and Deletion in binary search trees (with and without recursion), AVL trees, Threaded trees, B trees.

Graphs: Terminology and Representations, Graphs & Multigraphs, Directed Graphs, Sequential representation of graphs, Adjacency matrices, Transversal Connected Component and Spanning trees, Shortest path

UNIT IV

Searching, Sorting methodologies: Array- Bubble sort, Selection Sort, Insertion Sort, Linear Search, Binary Search. Stack-Quick Sort, Merge Sort. aTwo way Merge Sort. Quick Sort, Tree Heap Sort.

REFERENCE BOOKS:

1. R.L. Kruse, B.P. Leary, C.L. Tondo, Data structure and program design in C , PHI
2. R. B. Patel, Expert Data Structures With C, Khanna Publications, Delhi, India, Edition 2008.
3. C++ Plus Data Structures, Nell Dale, Jones & Bartlett.
4. Data Structures using C by A. M. Tenenbaum, Langsam, Moshe J. Augentem, PHI Pub.
5. Data Structures and Algorithms by A. V. Aho, E. Hopcroft and T. D. Ullman, Original edition, Addison Wesley, 1999, Low Price Edition.
6. Horowitz, Ellis and Sahni, Sartaj; Fundamentals of Data Structures, Universities Press.
7. H \ Y c f m \ U b X \ D f c V \ Y a g \ c Z \ 8 U h U \ G h f i W h i t n e b y T M H . \ > f " \ G m a c i f @] d
8. Introduction to Computer Science algorithms approach, Jean Paul Tremblay, Richard B. Bunt, 2002, TMH.
9. Data Structure and Standard Template Library, William J. Collins, 2003, T.M.H
10. Data Structures and Algorithms, James A. Storer, Springer

Note:

1. In the semester examination, the examiner will set two questions from each unit (total 08 questions in covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

CSE205B COMPUTER BASED NUMERICAL & STATISTICAL TECHNIQUES
B. Tech. Semester I III (Information Technology)(Common with CSE)

L	T	P	Credits
3	1	--	4

Class Work	:	25 Marks
Examination	:	75Marks
Total	:	100 Marks
Duration of Examination	:	3 Hours

UNIT I

Numerical errors: Round-off error, Truncation error, Absolute & relative errors, error propagation.

Nonlinear Equations: 6] g Y Wh] c b ' a Y h \ c X ž ' Z] I Y X ' d c] b h '] h Y f U h] c b ž ' B Y k h system of equations.

UNIT II

Finite differences and Interpolation: Forward, backward & central differences, Factorial notation, averaging c d Y f U h c f ž ' g \] Z h ' c d Y f U h c f ' U b X ' f Y ' U h] c b g \] d ' V Y h k Y Y b ' j U f] interpolation, central difference interpolation formulas, Interpolation with unequal interval, Lagrange interpolation formula, Hermite interpolation.

UNIT III

Numerical Differentiation & Integration: Numerical Differentiation using forward, backward & central difference Z c f a i ' U g ž ' B Y k h c ' b Ũ ž ' H7fcUhdYYgn' cZ]cXfla' i ' U b X ' G] a d g c b Ñ g ' f i ' Y g " ' ' F c a V

UNIT IV

Probability distributions & Hypothesis Testing: Conditional probability, Bayes theorem and its applications, expected value of a random variable. Properties and application of Binomial and Normal distributions.

H Y g h ' c Z ' g] [b] Z] W U b W Y ' Z-distribution (application only) square test of goodness of fit.

TEXT BOOKS:

1. Advanced Engg. Mathematics : F Kreyszig.
2. Higher Engg. Mathematics : B.S. Grewal
3. Numerical Methods: E Balagurusamy, TMH
4. Mathematical Statistics: S C Gupta & V K Kapoor.

Note:

1. In the semester examination, the examiner will set two questions from each unit (total 08 questions in covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

IT201B DISCRETE MATHEMATICAL STRUCTURES
B. Tech. Semester III (Information Technology)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT -1

Set Theory: Introduction to set theory, Set operations, Algebra of sets, Duality, Finite and Infinite sets, Cartesian Product, Relations, Representation of relations, Types of relation, Equivalence relations and partitions, Partial ordering relations and lattices, Function and its types, Composition of function and relations

UNIT-II

Graphs And Trees: Introduction to graphs, Directed and Undirected graphs, Homomorphic and isomorphic graphs, Subgraphs, Cut points and Bridges, Multigraph and Weighted graph, Paths and circuits, Shortest path in weighted graphs, Binary trees and its traversals.

UNIT-III

Propositional logic: Basic operations: AND(^), OR(v), NOT(~), Truth value of a compound statement, propositions, tautologies, contradictions, Validity of Arguments

Group theory: Definition and examples of a monoid, Semigroup, Groups and rings, Homomorphism, Isomorphism

UNIT-IV

Recursion And Recurrence Relation : linear recurrence relation with constant coefficients, Homogeneous solutions, Particular solutions, Total solution of a recurrence relation using generating functions.

Techniques Of Counting: Permutations with and without repetition, Combination.

TEXT BOOK:

Discrete Mathematics by Johnson Bough R., 5th Edition, PEA, 2001..

REFERENCE BOOKS:

1. Discrete Mathematics by Johnson Bough R., 5th Edition, PEA, 2001..
2. Concrete Mathematics: A Foundation for Computer Science, Ronald Graham, Donald Knuth and Oren Patashnik, 1989, Addison Wesley.
3. Mathematical Structures for Computer Scientists by John L. Gersting, 1993, Computer Science Press.
4. Applied Discrete Structures for Computer Science, Doerr and Levasseur, (Chicago: 1985,SRA
5. Discrete Mathematics by A. Chtewynd and P. Diggle (Modular Mathematics series), 1995, Edward Arnold London,
6. Schaums Outline series: Theory and problems of Probability by S. Lipshutz, 1982, McGraw-Hill Singapore
7. Discrete Mathematical Structures, B. Kolman and R.C. Busby, 1996, PHI
8. Discrete Mathematical Structures with Applications to Computers by Trambley & M. 1995, Mc Graw Hill.

Note: In the semester examination, the examiner will set two questions from each unit (total 08 questions in all) covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

ECE201B DIGITAL ELECTRONICS

B. Tech. Semester I III (CSE, ECE,EE,EEE,IC and common with BME, AEI in 4th Sem.)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT I

FUNDAMENTALS OF DIGITAL TECHNIQUES :

Digital signal, logic gates: AND, OR, NOT, NAND, NOR, EX-OR, EX-NOR, Boolean algebra. Review of Number systems. Binary codes: BCD, Excess-3, Gray, EBCDIC, ASCII, Error detection and correction codes.

COMBINATIONAL DESIGN USING GATES:

Design using gates, Simplifications of SOP and POS Boolean Expressions, Karnaugh map up to four variables.

UNIT II

COMBINATIONAL DESIGN USING MSI DEVICES :

Multiplexers and Demultiplexers and their uses, logic elements, Decoders, Adders / Subtractors, BCD arithmetic circuits, Encoders, Code Converters, Decoders / Drivers for display devices.

SEQUENTIAL CIRCUITS:

Flip Flops : SR, JK, T, D, master-slave, edge triggered, shift registers, sequence generators, Counters, Asynchronous and Synchronous Ring counters and Johnson Counter, Design of Synchronous and Asynchronous sequential circuits.

UNIT III

DIGITAL LOGIC FAMILIES:

Switching mode operation of p-n junction, bipolar and MOS. device Bipolar logic families: RTL, DTL, DCTL, HTL, TTL, ECL, MOS, and CMOS logic families. Tristate logic, Interfacing of CMOS and TTL families.

SEMICONDUCTOR MEMORY DEVICES:

Memory organizations, Characteristics of memory devices, Classifications of semiconductor memories.

UNIT IV

A/D AND D/A CONVERTERS:

Sample and hold circuit, weighted resistor and R ladder D/A Converters, specifications for D/A converters. A/D converters : Quantization, parallel comparator, successive approximation, counting type, specifications of ADCs.

PROGRAMMABLE LOGIC DEVICES: PLA, PAL, FPGA and CPLDs.

TEXT BOOKS :

1. Modern Digital Electronics (Edition III) : R. P. Jain; TMH
2. Digital Electronics : Green; Pearson

REFERENCE BOOKS:

1. Digital Integrated Electronics : Taub & Schilling; MGH
2. Digital Principles and Applications : Malvino & Leach; McGraw Hill.
3. Digital Design : Morris Mano; PHI.

NOTE:

In the Semester examination, the examiner will set 08 questions in all selecting two from each unit. Each candidate will be required to attempt five questions in all, atleast one from each unit.

ECE210B COMMUNICATION SYSTEMS

				B. Tech. Semester III (CSE 3 rd Sem, ECE 4 th Sem and AEI 6 th Sem)	
L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75 Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT I

Introduction to Communication Systems:

Modulation, Demodulation, Radio Frequency Spectrum, Signals & their classification, Limitations & Advantages of a Communication System, Comparison of Analog & Digital Communication Systems, Historical Perspective, Modes & Media of Communication.

Noise:

Sources of Noise, External & Internal Noise, Noise Calculations, Noise Figure, Noise Figure Calculation, Temperature Noise in Communication Systems, Band Pass Noise Model, Cascaded Stages & its Noise Calculation, Signal in presence of Noise, Preemphasis & Deemphasis, Noise Quieting Effect, Capture Effect, Noise in Modulation Systems.

UNIT II

Linear Modulation: (AM) Basic definition & derivation for Modulation & Modulation Index, Modulation Demodulation of AM, Suppressed Carrier Modulation, Quadrature Amplitude Modulation, SSB DSB-SC, VSB Modulation & Demodulation, Comparison of various AM Systems, Generation of AM waves.

Angle Modulation:

Basic definition & derivation for Modulation & Modulation Index, Generation of FM waves, Comparison between PM & FM, Frequency Spectrum of FM, B.W. & required spectra, Types of FM, vector representation of FM, Universal Curve, Multiple FM, Demodulation of FM waves, Demodulation of PM waves, Comparison between AM & FM.

UNIT III

Transmitters & Receivers :-Classification of Radio Transmitters, Basic Block Diagram of Radio Transmitter, Effect of Feedback on operation of Transmitter, Radio Telephone Transmitters, Privacy Device in Radio Telephony, FM Transmitter using Reactance Modulator, Armstrong FM Transmitter, Radio Receiver Classification, TRF Receiver, Super Heterodyne Receiver, Image Rejection & Double Spotting, Frequency Tracking & Alignment of Receivers, AGC.

Probability Theory & Random Processes: Probability, Properties, Conditional Probability, Random Variable CDF, PDF, Uniform Distribution, Random or Stochastic Process, Ergodic Process, PSD, Properties, Cross Correlation Function.

UNIT IV

Pulse Analog Modulation: Sampling theory, TDM, FDM, PAM, PWM, PPM, Modulation & Demodulation techniques of above all.

Pulse Analog Modulation: Elements of Pulse Code Modulation, Noise in PCM Systems, Bandwidth of Systems, Measure of Information, Channel Capacity, Channel Capacity of PCM System, Differential Code Modulation (DPCM). Delta Modulation (DM)

TEXT BOOKS

1. Communication Systems By Manoj Duhan | I. K. International
2. Electronic Communication Systems By Kennedy | TMH
3. Communication Systems By Singh & Saprè | TMH
4. Electronic Communication, By Roddy Coolen | Pearson
5. Analog Communication By P. Chakarbarti | DR & Co.
6. Communication Systems By Simon Haykins | Wiley

NOTE:

In the Semester examination, the examiner will set 08 questions in all selecting two from each unit. Candidates will be required to attempt five questions in all, at least one from each unit.

CSE221B DATA STRUCTURES LAB

B. Tech. Semester I III (Information Technology)(Common with CSE,ECE,AEI)					
L	T	P	Credits	Class Work	: 20 Marks
-	-	2	1	Examination	: 30Marks
				Total	: 50 Marks
				Duration of Examination	: 3 Hours

List of Practical:

1. Write a program to perform binary search in an array.
2. Write a program to perform binary search using recursion.
3. Write a program to perform linear search in 2D array.
4. Write a program to perform various operations on matrices.
5. Write a program to swap two nos. using calls by value and reference.
6. Write a program to implement bubble sort.
7. Write a program to implement insertion sort.
8. Write a program to implement selection sort.
9. Write a program of link list implementation of a stack.
10. Write a program of link list implementation of a queue.
11. Write a program of array implementation of a stack.
12. Write a program of array implementation of a queue.
13. Write a program to search an element in a link list.
14. Write a program to maintain a link list.
15. Write a program to implement BST

Note: Teacher may give 5 to 10 more exercises based on course CSE 201B

CSE225B COMPUTER BASED NUMERICAL AND STATISTICAL TECHNIQUES LAB

B. Tech. Semester I III(Information Technology)(Common with CSE)

L T P Credits
2 1

Class Work : 20 Marks
Examination : 30Marks
Total : 50 Marks
Duration of Examination : 3 Hours

K f] h Y ` D f c [f U a g `] b ` Ð 7 Ñ ` @ U b [i U [Y .

1. To deduce error involved in polynomial equation.
2. To Find out the root of the Algebraic and Transcendental equations using Bisection, Regula-Falsi, Newton Raphson and Iterative Methods.

' " ` ` H c `] a d ` Y a Y b h ` B Y k h c b Ñ g ` : c f k U f X ` U b X ` 6 U W _ k U f X ` = b h Y f d c ` U
(" ` ` H c `] a d ` Y a Y b h ` ; U i g g ` : c f k U f X ` U b X ` 6 U W _ k U f X ž ` 6 Y g g Y ` Ñ g ž ` G
) " ` ` H c `] a d ` Y a Y b h ` B Y k h c b Ñ g ` 8] j] X Y X ` 8] Z Z Y f Y b W Y ` U b X ` @ U b [f U b

6. To implement Numerical Differentiations.
7. To implement Numerical Integration using Trapezoidal, Simpson 1/3 and Simpson 3/8 rule.
8. To implement Least Square Method for curve fitting.
9. To draw frequency chart like histogram, frequency curve and etc.
10. To estimate regression equation from sampled data and evaluate values of standard deviation, regression coefficient, value of R2 for two independent variables.

ECE221B DIGITAL ELECTRONICS LAB

B. Tech. Semester III (CSE, ECE, EE, EEE, CSE, IC and BME, AEI in 4th Sem.)

L	T	P	Credits	Class Work	: 20 Marks
		2	1	Examination	: 30 Marks
				Total	: 50 Marks
				Duration of Examination	: 3 Hours

LIST OF EXPERIMENTS:

- 1 Study of TTL gates AND, OR, NOT, NAND, NOR, EX-OR, EX-NOR
- 2 To realize the universal property of NAND gate
- 3 To realize the universal property of NOR gate
- 4 Design & realize a given function using maps and verify its performance.
- 5 To verify the operation of Multiplexer & Demultiplexer.
- 6 To verify the operation of Comparators.
- 7 To perform Half adder and Full adder
- 8 To perform Half Subtractor and Full subtractor.
- 9 To verify the truth table of R, S, K, T & D Type flip flop .
- 10 To verify the operation of bidirectional shift register.
- 11 To study analog to digital and digital to analog converter
- 12 To design & verify the operation of 3 bit synchronous counter.
- 13 To design & verify the operation of synchronous UP/DOWN decade counter using JK flip flop & derive a seven segment display using the same.
- 14 To design & verify the operation of asynchronous UP/DOWN decade counter using JK flip flop & derive a seven segment display using the same.
- 15 Design a 4bit shift register ,verify its operation and verify the operation of a ring counter and a Johnson counter.

Note:-

- 1 Total ten experiments are to be performed in the semester.
- 2 At least seven experiments should be performed from the above list. Remaining three experiments should be performed as designed and set by the concerned institution as per the scope of the syllabus.

GES 203B ENVIRONMENTAL STUDIES FIELD WORK						
B. Tech. Semester III/IV (Common for all Branches) Gr-B						
L	T	P	Credit		Field Work	: 25Marks
--	--	--	0		Total	: 25 Marks

FIELD WORK:

- < Visit to a local area to document environmental aspects / forest/ grassland/ hill/ mountain.
- < Visit to a local polluted site / Urban/ Rural/ Industrial/ Agricultural.
- < Study of common plants, insects, birds.
- < Study of simple ecosystems / pond, river, hill slopes, etc. (Field work equal to 5 lectures hours).

Note: The awards of this paper shall not be counted in the award of the Degree/DMC.

ME 217 B WORKSHOP

B. Tech. Semester I III (Common for all branches)

L	T	P	Credits
-	-	2	2

Class Work

: 50 Marks

Each student has to undergo a workshop atleast 4 weeks (80 hours) at the end of II semester during summer vacations. Out of the four weeks, two weeks would be dedicated to general skills and two weeks training for specialized discipline/ department. The evaluation of this training shall be carried out in the III semester

LIST OF JOBS TO BE CARRIED OUT DURING THIS PERIOD

1. To study and prepare different types of jobs on machine tools (lathe, shaper, planer, slotter, milling, drilling machines).
2. To prepare lay out on a metal sheet by making and prepare rectangular tray, pipe shaped components e.g. funnel.
3. To prepare joints for welding suitable for butt welding and lap welding.
4. To study various types of carpentry tools and prepare simple types of wooden joints.
5. To prepare simple engineering components/ shapes by forging.
6. To prepare mold and core assembly, put metal in the mold and fettle the casting.
7. To study of CNC lathe, CNC Milling and EDM Machines.
8. Any work assigned in electrical workshop, computer hardware/language lab, electronics workshop, biomedical hardware, automobile workshop etc.

This student will prepare job(s)/project as an individual or in a group using workshop in house infrastructure.

The student shall submit a typed report.

Training will be evaluated on the spot out of 20 marks.

The report will be evaluated in the III Semester by a Committee consisting of two teachers.

The student will interact with the committee through presentation to demonstrate his/her learning. The basic evaluation will primarily be the knowledge and exposure of students on different kinds of Machines/instruments/tools/ skills etc. The committee will evaluate out of 30 marks.

The committee shall submit the awards out of 50 marks.

GES 201B ENVIRONMENTAL STUDIES

B. Tech. Semester III/IV (Common for all Branches) Gr-A IVth Sem

L	T	P	Credit	Examination	:	75Marks
3	--	--	0	Total	:	75 Marks
				Duration	of	3 Hours
				Examination		

UNIT I The Multidisciplinary nature of environmental studies, Definition, scope and importance
Need for Public awareness

UNIT II NATURAL RESOURCES:
Renewable and non-renewable resources:
Natural resources and associated problems.

- b) Forest resources: Use and over-exploitation: deforestation, case studies, Timber exploitation, mining, dams and their effects and forests tribal people.
- c) Water resources: Use and over-utilization of surface and ground water, floods, drought, conservation over water, dams benefits and problems.
- d) Mineral resources: Use and exploitation, environmental effects of extracting and using resources, case studies.
- e) Food resources: World food problems, changes, caused by agriculture and overgrazing, effects of modern agriculture, fertilizer, pesticide problems, water logging, salinity, case studies.
- f) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources; case studies.
- g) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion, desertification.
 - < Role of an individual in conservation of natural resources.
 - < Equitable use of resources for sustainable lifestyles.

UNIT- III ECOSYSTEMS:

- < Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem, Ecological succession, Food chains, food webs and ecological pyramids.
- < Introduction, types, characteristics, structure and function of the following ecosystem:
 - a) Forest ecosystem, Grassland ecosystem, Desert ecosystem.
 - b) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

UNIT- IV BIODIVERSITY AND ITS CONSERVATIONS:

- < Introduction, Definition: Genetic, species and ecosystem diversity.
- < Biogeographical classification of India.
- < Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic, option values.
- < Biodiversity at global, National and local levels.
- < India as a mega-diversity nation.
- < Hot-spots of biodiversity.
- < Threats to biodiversity: habitat loss, poaching of wildlife, wildlife conflicts.
- < Endangered and endemic species of India.

UNIT V ENVIRONMENTAL POLLUTION:
Definition, causes, effects and control, sources of:
Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal Pollution, Nuclear hazards

- < Solid waste management: Causes effects and control measures of urban and industrial waste.

- wastes.
- < Role of an individual in prevention of pollution.
- < Pollution case studies.
- < Disaster management: Floods, earthquake, cyclone and landslides.

UNIT VI SOCIAL ISSUES AND THE ENVIRONMENT:

- a) From unsustainable to sustainable development
- b) Urban problems related to energy
- c) Water conservation, rain water harvesting, watershed management
- d) Resettlement and rehabilitation of people; its problems and concerns, case studies
- e) Environmental ethics: Issues and possible solutions
- f) Climate change, global warming, acid rain, ozone layer depletion, nuclear accident and holocaust, Case studies
- g) Wasteland reclamation, Consumerism and waste products
- h) Environment Protection Act, Air (Prevention and Control of Pollution) Act, Water (Prevention and Control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act
- i) Issues involved in enforcement of environmental legislation, Public awareness

UNIT VII Human population and the Environment., Population growth, variation among nations, Population explosion, Family Welfare Programme, Environment and human health, Human Rights, Value Education, HIV/ AIDS, Woman and Child Welfare. Role of Information Technology in Environment and human health. Case Studies.

REFERENCES:

1. Agarwal, K.C. 2001, Environmental Biology, Nidi Pub. Ltd. Bikaner.
2. Bharucha, Franch, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad 380013, India
3. Brunner R.C. 1989, Hazardous Waste Incineration, Mc. Graw Hill Inc. 480p.
4. Clark R.S., Marine Pollution, Slanderson Press Oxford (TB).
5. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth M.T. 2001, Environmental Encyclopedia, Jaico Pub. House, Mumbai. 1195p.
6. De A.K., Environmental Chemistry, Wiley Eastern Ltd.
7. Down to Earth, Centre for Science and Environment ®.
8. Gleick, H.P., 1993. Water in Crisis, Pacific Institute for Studies in Development & Security Stockholm Env. Institute, Oxford Univ., Press 473p.
9. Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay
10. Heywood, V.H. & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge University Press 140p.
11. Jadhav, H & Bhosale, V.M. 1995, Environmental Protection and Laws, Himalaya Pub. House, 284p.
12. McKinney, M.L. & Schoch, RM 1996, Environmental Sciences Systems & Solutions, Web er Edition 639p.
13. Mhaskar A.K., Mater Hazardous, Tekchno Sciences Publications (TB).
14. Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co. (TB).
15. Odum, E.P. 1971, Fundamentals of Ecology, W.B. Saunders Co. USA, 574p.
16. Rao M.N. & Dutta, A.K. 1987, Waste Water Treatment. Oxford & IBH Publ. Co. Pvt. 450p, 3
17. Sharma, B.K., 2001, Environmental Chemistry, Goel Publ. House, Meerut.
18. Survey of the Environment, The Hindu (M).
19. Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Sciences (TB).
20. Trivedi, R.K., Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, Vc I and II Enviro Mdia (R).
21. Trivedi R.K., Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, V and II Enviro Media (R).
22. Trivedi R.K. and P.K. Goel, Introduction to air pollution Techno Sciences Pub. (TB).
23. Wagner K.D., 1998, Environmental Management, W.B. Saunders Co. Philadelphia, USA 499p.
24. A text bok environmental education G.V.S. Publishers by Dr. J.P. Yadav.

(M) Magazine (R) Reference (TB) Textbook

Note:

1. Examiner will set eight questions. Students will be required to attempt five Questions.
2. The awards of this paper shall not be counted in the award of the Degree/DMC.

CSE202B DATABASE MANAGEMENT SYSTEMS

B. Tech. Semester I IV(Information Technology)(Common with CSE)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75Marks
				Total	:	100 Marks
				Duration of Exam.	:	3 Hours

UNIT I :

DBMS an overview, Advantages of DBMS, Network, Hierarchical and Relational Model, Levels of abstraction, Data Independence, Data Models, Instances and schemes, Data independence Structures of a DBMS, Application Programmers & Data Base administrators\ their function, Transaction Management Entity Relationship Model: Entities, Attributes and Entity Sets, Relation and Relationships sets, mapping and participation constraints, Aggregation, Specialization and Generalization, Features of RDBMS.

UNIT-II

Relational Model: Introduction to relational model, Integrity constraints over relations, Enforcing Data Integrity Integrity Constraints, Relational Data, Logical Data Base Design, Reduction of Diagrams to relations, Introduction to views, Querying Relational Algebra and Relational Calculus, Operations on Relational Algebra, Operations on Relational Calculus, Tuple Relational Calculus, Domain Relational Calculus

UNIT-III

Database Design, Data Redundancy, Introduction to Schema Refinement, Functional Dependencies, Normal Forms First , Second, Third, Boyce code, Fourth and Multivalued Dependencies

Structured Query Language:Basic SQL Queries, Nested Queries, Aggregate operator, Null Values, implementation of Various Relational Algebra operations, Embedded SQL

UNIT-IV

Transaction management: ACID Properties, Transaction states, Concurrency control: Concurrency Control Overview, Concurrency control problems, Locks, Locking Protocols, Deadlocks, Serializability, Recovery System: Types of Failures, Recovery techniques, ARIES

TEXT BOOKS

1. Korth, Silberschatz Database System Concepts , 4th Ed., TMH, 2000.
2. Date C. J., An Introduction to Database Systems , 7th Ed., Narosa Publishing, 2004

REFERENCE BOOKS

- 1 Elmasri Navathe, Fundamentals of Database Systems, 5th Edition Pearson Education
- 2 Vipin.C.Desai , An introduction to Database Systems West Pub. Co

Note:

In the semester examination, the examiner will set questions from each unit (total 100 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

CSE204B OBJECT ORIENTED PROGRAMMING
 B. Tech. Semester I IV(Information Technology))
 (Common with CSE,AEI 4th Sem and ECE,IC,EEE, 5th Sem)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

. UNIT-I

C++ Standard Library, Preprocessor Directives, illustrative Simple C++ Programs.Header Files and Namespaces, library filesConcept of objects, Object Oriented Analysis & Object Modeling techniques.

Object Oriented Concepts: Introduction to Objects and Object Oriented Programming, Encapsulation (Information Hiding), Access Modifiers: Controlling access to a class, method, variable (public, protected, private, package), Other Modifiers, Polymorphism: Overloading, Inheritance, Overriding, Abstract Classes, Reusability
 Classes and Data Abstraction: Introduction, Structure Definitions, Accessing Members of Structures, Class Scope
 Accessing Class Members, Controlling Access Function And Utility Functions, Initializing Class Objects: Constructors

Unit-II

Using Destructors, Classes: Const(Constant) Object And Const Member Functions, Object as Member of Class
 Friend Function and Friend Classes, Using This Pointer, Dynamic Memory Allocation with New and Delete, Static
 Class Members, Container Classes and iterators, Function overloading.

Operator Overloading: Introduction, Fundamentals of Operator Overloading, Restrictions on Operators Overloading,
 Operator Functions as Class Members vs. as Friend Functions, Overloading, «, »

Unit-III

Inheritance: Introduction, Inheritance: Base Classes And Derived Classes, Protected Members, Casting Base Class
 Pointers to DerivedClass Pointers,Using Member Functions, Overriding BaseClass Members in a Derived Class,
 Public, Protected and Private Inheritance, Using Constructors and Destructors in derived Classes, Implicit Derived
 Class Object To BaseClass Object Conversion, Composition Vs inheritance.

Introduction to Virtual Functions, Abstract ,Base Classes And Concrete Classes, Polymorphism, New Classes And
 Dynamic Binding, Virtual Destructors, Polymorphism, Dynamic Binding.

Unit-IV

Files and I/O Streams and various operation on files,File Input/Output Classes and Objects, Stream Output,
 Stream Input, Unformatted I/O (with read and write), Stream Manipulators, StreamFormatStates, StreamErrorState
 Templates & Exception Handling: Function Templates, Overloading Template Functions, Class Template, Class
 Templates and NonType Parameters, Templates and Inheritance, Templates and Friends.

Templates and Static Members: Introduction, Basics of C++ Exception Handling: Try Throw, Catch, Throwing a
 Exception; Catching an Exception, Rethrowing an Exception, Exception specifications, Processing Unexpected
 Exceptions, Constructors, Destructors and Exception Handling, Exceptions and Inheritance.

TEXT BOOKS :-

1. Object Oriented Programming in Turbo C++ by Robert Lafore ,1994, The WAITE Group Press
2. Programming with C++ By D Ravichandran, 2003, T.M.H
3. Object oriented Programming with C++ by E Balagurusamy, 2001, Tata Mc Graw

REFERENCE BOOKS :-

1. C++ How to Program by H M Deitel and P J Deitel, 1998, Prentice Hall
2. Computing Concepts with C++ Essentials by Horstmann, 2003, John Wiley,
3. The Complete Reference in C++ By Herbert Schildt, 2002, TMH.
4. C++ Programming Fundamentals by Chuck Easttom, Firewall Media.

Note: In the semester examination, the examiner will set two questions from each unit (10 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

IT202B PRINCIPLES OF OPERATING SYSTEMS
B. Tech. Semester IV (Information Technology)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

. UNIT-I

Introduction :Introduction to Operating System Concepts (including Multitasking, multiprogramming, multi user, Multithreading etc)., Types of Operating Systems: Batch operating systems, sharing systems, Distributed OS, Network OS, Real Time OS; Various Operating system services, architecture, System programs and calls.

UNIT-II

Process Management: Process concept, process scheduling, operation on processes; CPU scheduling, scheduling criteria, scheduling algorithms: First Come First Serve (FCFS), Shortest Job First (SJF), Priority Scheduling, Round Robin (RR), Multilevel Queue Scheduling.

UNIT-III

Memory Management: Logical & Physical Address Space, swapping, contiguous memory allocation, contiguous memory allocation paging and segmentation techniques, segmentation with paging; virtual memory management Demand Paging & Page Replacement Algorithms; Demand Segmentation.
File System: Different types of files and their access methods, directory structures, various allocation methods, protection, concurrency control, introduction to distributed file system.

UNIT IV

Process-Synchronization & Deadlocks: Critical Section Problems, semaphores; methods for handling deadlocks deadlock prevention, avoidance & detection; deadlock recovery.
I/O Systems: I/O Hardware, Application I/O Interface, Kernel, Transforming I/O requests, Performance Issues.
Unix Operating System :Unix system call for processes and file system management, Shell interpreter,
Linux Operating System : Components of Linux, Processes and threads, Interprocess Communication, Memory management, File system

TEXT BOOKS:

1. Operating System Concepts by Silberchatz et al, 5th edition, 1998, Addison Wesley.
2. Modern Operating Systems by A. Tanenbaum, 1992, Prentice Hall
3. Operating Systems by Sibasankar Haldar, Alex A. Aravind 2009 Pearson Education.

REFERENCE BOOKS:

1. Operating System by Petersdr 1985, AW.
2. Operating System by Milankovic, 1990, TMH.
3. Operating System Incorporating With Unix & Windows By Colin Ritchie, 1974, TMH.
4. Operating Systems by Mandrik & Donovan, TMH
5. Operating Systems Advanced Concepts By Mukesh Singhal , N.G. Shivaratri, 2003, T.M.H

Note:- In the semester examination, the examiner will set two questions from each unit (total 08 questions all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

CSE208B INFORMATION SYSTEM ANALYSIS & DESIGN
B. Tech. Semester I IV(Information Technology))(Common with CSE)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT - I

Introduction to System Development: Categories of Information Systems, Structured analysis method, System prototype method, succeeding as system analyst.

Analysis: Feasibility study, Feasibility considerations, Steps in feasibility study, Cost and Benefit analysis, Procedure for cost and benefit determination.

UNIT-II

Requirement Analysis: Problem definition, Identification and Investigation of system, Fact finding techniques, Tools for documenting procedures and decisions, Data Flow Diagrams, Data Dictionaries, Decision Tables, and Decision Trees.

UNIT-III

Design: System design considerations, Process and stages of system design: Logical and Physical, Selection of best alternate design strategy.

Design of Input and Output: Capturing data for input, Input validation design of output: Output objectives, Types of output, Presentation format of output, Design of software: Top Down Structure, Coupling, Cohesion, Span of control, Module size, Shared modules. Training, Conversion Methods

UNIT-IV

Object Oriented Design and Modeling: Introduction to object oriented design, Designing Object responsibilities, and Object reusability.

Case Study of Some Common Systems: Inventory control, Laboratory management systems, Hotel reception system, Hospital management system etc. Seminar on State of the art technology.

TEXT BOOKS

1. Senn, J. A., Analysis and Design of Information Systems, Tata McGraw Hill (1989) 2
2. Whitten, J. and Bentley, J., Introduction to Systems Analysis and Design, Tata McGraw Hill (2006).

REFERENCE BOOKS

1. Hoffer and Hoffer Modern System Analysis and Design, Pearson Education.

Note:- In the semester examination, the examiner will set two questions from each unit (total 08 questions all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

IT204B COMPUTER ORGANIZATION
B. Tech. Semester IV (Information Technology)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

General System Architecture: Classification of computers (Based on Computation methodology(Analog, digital, hybrid), based on generations, based on size & capability, Xbase b : ~ m b b Ñ g ~ Wf] h Y f] U Ł / ~ A i machine: digital logic, micro architecture, ISA, operating systems, high level language ; Register Transfer language Computer Buses (basic design using multiplexers), Bus width, Bus clocking(synchronous, asynchronous), bus arbitration, Bus examples(ISA bus, PCI bus, Universal serial bus) ; Computer Arithmetic ,Addition , subtraction g] [b Y X ~ a U [b] h i X Y ~ ž ~ g] [b Y X ~ & Ñ g ~ Wc a d ~ Y a Y b h ~ ~ ž ~ A i ~ h] d ~] WU h]

UNIT-II

CPU Organization: CPU Architecture types (accumulator, register, stack, memory/ register) Instruction cycle (Fetch Decode-Execute); Instruction set based classification of processors (RISC, CISC, and their comparison); Addressing modes(register immediate, direct, indirect, indexed) Operations in the instruction set; Arithmetic and Logical, Data Transfer, Control Flow; Instruction set formats (fixed, variable, hybrid)

UNIT-III

Input /Output & Control Unit :- Input Output Interface Asynchronous data transfer (Strobe control, stroking , serial transfer); Serial Vs parallel data transmission; Modes of data transfer (Programmed I/O, Interrupt driven, Direct Memory access (DMA)). Control Unit design: Control unit design methods (hardwired & microprogrammed) Control Memory As Sequencing, Micro instructions.

UNIT-IV

Memory Organization:- Memory device characteristics(access/ cycle time, cost per bit, volatility , storage density); Memory hierarchy ;Main memory Design (Semiconductor RAM & ROM organization, memory expansion & dynamic memory types , their comparison); Associative memory Design ,Match logic ,Locality of reference principle Temporal & Spatial) Cache mapping (Direct , associative , set associative); Cache writing policies(BusyWrite through) Virtual Memory(Address space , memory space , Address mapping using pages , Page replacement)

TEXT BOOKS:

1. Computer System Architecture by M. Mano, Prentice Hall
2. Structured Computer Organisation by A.S. Tanenbaum, 6th Edition, Prentice Hall of India, Eastern Economic Edition

REFERENCE BOOKS:

1. Computer Organization, 5th Ed., by Carl Hamacher, Zvonko Vranesic, 2002, Safwat Zaky.
2. Computer Organization and Design, 2nd Ed., by David A. Patterson and John L. Hennessy, Morgan 1997, Kauffmann.
3. Computer Architecture and Organization, 3rd Ed., by John P. Hayes, 1998, TMH
4. Computer Organisation & Architecture: Designing for performance by W. Stallings, 4th Edition, 1996, Prentice Hall International edition.

NOTE: Eight questions will be set in all by the examiner taking two questions from each unit. Students will be required to attempt five questions in all taking atleast one question from each section.

CSE222B DATABASE MANAGEMENT SYSTEMS LAB
B. Tech. Semester I IV(Information Technology) (Common with CSE)

L	T	P	Credits	Class Work	: 20 Marks
		2	1	Examination	: 30Marks
				Total	: 50 Marks
				Duration of Examination	: 3 Hours

Experimental work will be based upon the course CSE2B

1. Introduction to SQL.

2. To study Basic SQL commands (create database, create table, use, drop, insert) and execute the following queries using these commands:

- < CREATE DATABASE EMPLOYEE;
- < CREATE TABLE EMPLOYEE (EMPLOYEEID NUMBER(4) PRIMARY KEY, NAME VARCHAR2(50), SALARY NUMBER(10,2), DEPARTMENT VARCHAR2(30));
- < INSERT INTO EMPLOYEE VALUES (1, 'Ramesh', 15000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (2, 'Suresh', 20000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (3, 'Ajay', 30000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (4, 'Prakash', 40000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (5, 'Neha', 50000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (6, 'Vijay', 60000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (7, 'Anil', 70000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (8, 'Priya', 80000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (9, 'Amit', 90000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (10, 'Smita', 100000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (11, 'Ishita', 110000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (12, 'Parvathi', 120000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (13, 'Megha', 130000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (14, 'Shruti', 140000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (15, 'Sneha', 150000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (16, 'Surbhi', 160000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (17, 'Nisha', 170000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (18, 'Ishita', 180000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (19, 'Parvathi', 190000, 'Computer Science');
- < INSERT INTO EMPLOYEE VALUES (20, 'Megha', 200000, 'Computer Science');

3. To study the viewing commands (select, update) and execute the following queries using these commands:

- < Find the names of all employees who live in Delhi.
- < Increase the salary of all employees by Rs. 5,000.
- < Find the company names where the number of employees is greater than 10,000.
- < SELECT DEPARTMENT, COUNT(*) FROM EMPLOYEE GROUP BY DEPARTMENT;

4. To study the commands to modify the structure of table (alter, delete) and execute the following queries using these commands:

- < ALTER TABLE EMPLOYEE ADD (ADDRESS VARCHAR2(100));
- < UPDATE EMPLOYEE SET ADDRESS = 'Delhi' WHERE DEPARTMENT = 'Computer Science';
- < ALTER TABLE EMPLOYEE ADD (DEPARTMENT VARCHAR2(30));
- < ALTER TABLE EMPLOYEE DROP COLUMN ADDRESS;
- < ALTER TABLE EMPLOYEE DROP COLUMN DEPARTMENT;

5. To study the commands that involve compound conditions (and, or, in, not in, between, not between, like, not like) and execute the following queries using these commands:

- < SELECT * FROM EMPLOYEE WHERE SALARY > 30,000;
- < SELECT * FROM EMPLOYEE WHERE SALARY > 30,000 AND DEPARTMENT = 'Computer Science';
- < SELECT * FROM EMPLOYEE WHERE SALARY > 30,000 OR DEPARTMENT = 'Computer Science';
- < SELECT * FROM EMPLOYEE WHERE SALARY > 30,000 AND DEPARTMENT = 'Computer Science' AND SALARY < 100,000;

6. To study the aggregate functions (sum, count, max, min, average) and execute the following queries using these commands:

- < Find the sum and average of salaries of all employees in computer science department.
- < SELECT DEPARTMENT, COUNT(*), SUM(SALARY), AVG(SALARY) FROM EMPLOYEE GROUP BY DEPARTMENT;
- < Find the maximum and the minimum salary in the HR department.

7. To study the grouping commands (group by, order by) and execute the following queries using these commands:

- < List all employee names in descending order.
- < Find number of employees in each department where number of employees is greater than 5.
- < List all the department names where average salary of a department is Rs.10,000.

8. To study the commands involving data constraints and execute the following queries using these commands:

- < Add the foreign key constraint.

9. To study the commands for aliasing and renaming and execute the following queries using these commands:

- < Rename the name
- < Add the foreign key constraint.
- < Add the foreign key constraint.

10. To study the commands for joins (cross join, inner join, outer join) and execute the following queries using the commands:

- < Retrieve the complete record of an employee and its company from both the table using joins.
- < Add the foreign key constraint.

11. To study the various set operations and execute the following queries using these commands:

- < List the number of all employees who live in Delhi and whose company is in Gurgaon or if both conditions are true.
- < List the number of all employees who live in Delhi but whose company is not in Gurgaon.

12. To study the various scalar functions and string functions (upper, square, substring, reverse, upper, lower, concatenation) and execute the following queries using these commands:

- < Reverse the names of all employees.
- < Change the names of company cities to uppercase.
- < Concatenate name and city of the employee.

13. To study the commands for views and execute the following queries using these commands:

- < Create a view having ename and ecity.
- < Create a view having attributes from both the tables.
- < Update the above view and increase the salary of all employees of IT department by Rs.1000.

14. Study of Integrity Constraints in SQL.

15. Study of Use of Group By and Having Clause.

16. Study of various types of Views.

17. Study of Indexes in SQL.

18. Study of Aggregate Functions in SQL.

Teacher can give queries based on SQL Commands.

CSE224B OBJECT ORIENTED PROGRAMMING LAB
 B. Tech. Semester IV (Information Technology)
 (Common with CSE, AEI and ECE, IC, EEE 5TH Sem)

L	T	P	Credits		Class Work	: 20 Marks
		2	1		Examination	: 30 Marks
					Total	: 50 Marks
					Duration of Examination	: 3 Hours

1. Raising a number n to a power p is the same as multiplying n by itself p times. Write a function called `power` that takes a double value for n and an integer for p , and returns the result as double value. Use a default argument of 2 for p . so that if this argument is omitted, the number will be squared. Write a main () function gets values from the user to test this function.

2. A point on the two dimensional plane can be represented by two numbers: an X coordinate and a Y coordinate. For example, (4,5) represents a point 4 units to the right of the origin along the X axis and 5 units up the Y axis. The sum of two points can be defined as a new point whose X coordinate is the sum of the X coordinates of the points and whose Y coordinate is the sum of their Y coordinates. Write a program that uses a structure called `point` to model a point. Define three points, and have the user enter values to two of them. Then set the third point equal to the sum of the other two. and display the value of the third point. Interaction with the program might look like this:

```
Enter coordinates for P1 : 3      4
Enter coordinates for P2: 5      7
Coordinates of P1 + P2 are 8      11
```

3. Create the equivalent of a four function calculator. The program should request the user to enter a number, an operator, and another number. It should then carry out the specified arithmetical operation: adding, subtracting, multiplying, or dividing the two numbers. (It should use a switch statement to select the operation). Finally, the program should display the result. When it finishes the calculation, the program should ask if the user wants to do another calculation. The response can be 'Y' or 'N'. Some sample interaction with the program might look like this.

```
Enter first number. Operator, second number: 10/3
Answer = 3.333333
Do another(Y| N)? Y
Enter first number. Operator, second number 12 + 100
Answer = 112
Do another (Y| N)? N
```

4. Create two classes `DM` and `DB` which store the value of distances. `DM` stores distances in metres and centimetres and `DB` in feet and inches. Write a program that can read values for the class objects and add one object of `DM` with another object of `DB`.

Use a friend function to carry out the addition operation. The object that stores the results maybe DM object or object. depending on the units in which the results are required. The display should be in the format of feet inches or metres and centimetres depending on the display.

5. Create a class rational which represents a numerical value by two double- NUMERATOR & DENOMINATOR Include the following public member Functions:
 - < constructor with no arguments (default).
 - < constructor with two arguments.
 - < void reduce() that reduces the rational number by eliminating the highest common factor between the numerator and denominator.
 - < Overload + operator to add two rational number
 - < Overload » operator to enable input through cin
 - < Overload « operator to enable output through cout
 - < Write a main () to test all the functions in the class.
6. Write a program that creates a binary file by reading the data for the students from the terminal. The data for each student consist of roll no., name (a string of 30 or lesser no. of characters).
7. A hospital wants to create a database regarding its indoor patients. The information to store include
 - < Name of the patient
 - < Date of admission
 - < Disease
 - < Date of discharge

Create a structure to store the date (year, month and date as its members). Create a base class to store the above information. The member function should include functions to enter information and display a list of all the patients in the database. Create a derived class to store the age of the patients List the information about the patients. List the information about the pediatric patients (less than twelve years in age).

8. Make a class Employee with a name and salary. Make a class Manager inherit from Employee. Add an instance variable, named department, of type string. Supply a method to toString that prints the manager's name, department and salary. Make a class Executive inherit from Manager Supply a method to toString that prints the string Executive followed by the information stored in the manager superclass object. Supply a test program that tests these classes and methods.
9. Imagine a tollbooth with a class called toll Booth. The two data items of a type unsigned int to hold the number of cars, and a type double to hold the total amount of money collected. A constructor initializes both these to 0. A member function called payingCar () increments the car total and adds 0.50 to the cash total. Another function, called nopayCar (). increments the car total but adds nothing to the cash total. A member function called displays the two totals.

IT222B OPERATING SYSTEMS LAB
B. Tech. Semester I IV(Information Technology)

L	T	P	Credits	Class Work	:	20 Marks
		2	1	Examination	:	30Marks
				Total	:	50 Marks
				Duration of Examination	:	3 Hours

- 1) Study of WINDOWS 2000 Operating System.
- 2) Administration of WINDOWS 2000 (including DNS,LDAP, Directory Services).
- 3) Study of LINUX Operating System (Linux kernel, shell, basic commands pipe & filter commands).
- 4) Administration of LINUX Operating System.
- 5) Writing of Shell Scripts (Shell programming).
- 6) AWK programming.

SPIT202B GENERAL PROFICIENCY & ETHICS						
B. Tech. Semester I IV (Mechanical Engineering)						
L	T	P	Credits		Examination	: 75Marks
--	--	--	2		Total	: 75 Marks

The purpose of this course is to inculcate a sense of professionalism in a student along with personality development in terms of quality such as receiving, responding, temperament, attitude and outlook. The student efforts will be evaluated on the basis of his/ her performance / achievements in different walks of life.

A Faculty Counselor will be attached to a group of students which will remain associated with him /her during entire period of the degree program in the University. Each faculty member will serve as a faculty counselor. They will act like a local guardian for the students associated with him / her and will help them in terms of career guidance, personal difficulties.

A. The student will present a written report before the committee with following in view:

The student will present before the committee his/her achievements during the current semester in the form of a written report highlighting followings:

- | | | |
|-----|---|------------|
| I. | Academic Performance | ----- |
| II. | Extra Curricular Activities/ Community Service, Hostel Activities | (8 Marks) |
| III | Technical Activities/ Industrial, Educational tour | (8 Marks) |
| IV | Sports/games | (14 Marks) |
| V | Moral values & Ethics | (15 Marks) |

NOTE: Report submitted by the students should be typed on both sides of the paper.

C. A student will support his/her achievement and verbal & communicative skill through presentation before the committee. (30 Marks)

C. Moral values & Ethics

Syllabus - Process for Value Education, self evaluation concept and process.

A minor test will be conducted during the semester. It will be the duty of the concerned teachers assigned to teach Moral values & Ethics to submit the awards to respective chairman of the department Director/Principal.

The evaluation of this course will be made by the following Committee.

University Departments:

- | | | |
|---|-------------------------------|----------|
| 1 | Chairperson of the Department | Chairman |
| 2 | Senior Most Faculty Counselor | Member |
| 3 | Vice-Chancellor | Member |

Affiliated Colleges:

- | | | |
|---|---|----------|
| 4 | Director/Principal | Chairman |
| 5 | Head of the Department/Sr. Faculty | Member |
| 6 | External Examiner to be appointed by the University | Member |

Note: Remuneration will be paid to the external examiner only (at par with the other practical examinations).

IT301B DATABASE ADMINISTRATION

B. Tech. Semester I V(Information Technology)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75Marks
				Total	:	100 Marks
				Duration of Exam.	:	3 Hours

UNIT-1

Oracle overview and Architecture, Installing and managing oracle, creating a database and dictionary, control and redo log files, Managing Table spaces and data files, Managing indexes, and constraints, Managing users and security.

UNIT-II

Basic Oracle net architecture basic net server side configuration, basic net client configuration, usage and configuration of Oracle shared server architecture. Backup and Recovery: Transporting data between databases export and import utility, Loading data into database SQL*loader, database performance tuning.

UNIT-III

Basic constructs of PL/SQL , Cursors: need, types and implementation, Stored Procedures, functions

UNIT-IV

Active Database, ECA Rules implementing ECA rules in PL/SQL. CUBE technology , Data ware house, creating a Data ware House in oracle.

TEXT BOOKS:

1. Kevin loney, Bob Baryla Oracle database 10g: DBA handbook, Tata McGrawHills.
2. Biju Thomas, Bob Baryla, Oracle DBA Fundamental, BPB publications

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

IT303B PRINCIPLES OF SOFTWARE ENGINEERING
B. Tech. Semester I V(Information Technology)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT-I

Introduction: Introduction to Software Engineering, importance of Software, The Software Evolution, Software Characteristics, Software Applications, Software Crisis: Problem and Causes. Software Development Life Cycle: Waterfall model, Incremental and Evolutionary process models, Personal Software process (PSP) and Team Software process (TSP), Overview of agile process and aspect oriented programming

Software Requirement Specification: Problem Analysis, Requirement elicitation and Validation, Requirements modeling: Scenarios, Information and analysis classes, flow and behavioral modeling, documenting Software Requirement Specification (SRS).

UNIT-II

System Design: Design Concepts, design models for architecture, component, data and user interfaces; Problem Partitioning, Abstraction, Cohesiveness, Coupling, Top Down and Bottom Up design approaches; Functional Versus Object Oriented Approach, Design Specification, 4 Basics of UML

Coding: TOP-DOWN and BOTTOM -UP structure programming, Information Hiding, Programming types, and Internal Documentation, Verification.

UNIT-III

Software Testing: Levels of Testing, Functional Testing, Structural Testing, Test Plan, Test Case Specification Software Testing Strategies, Verification & Validation, Unit, Integration Testing Down and Bottom Up Integration Testing, Alpha & Beta Testing, White box and black box testing techniques, System Testing and Debugging.

Software Quality Assurance: Software Configuration Management, Overview of Software Quality Control and Quality Assurance, ISO 9000 Certification for Software Industry, SEI Capability Maturity Model (CMM) and Comparison between ISO & SEI CMM.

UNIT-IV

Object Oriented Software Engineering: Analysis, Design, Implementation and testing issues of object oriented software engineering.

CASE (Computer Aided Software Engineering): CASE and its Scope, CASE support in Software Life Cycle, Documentation Support, Architecture of CASE Environment. Exposure to CASE tools like Rational Software suite Turbo Analyst, Silk Suite etc.

TEXT BOOKS:

1. Roger S. Pressman, Software Engineering A Guide to the Modern Software Engineering Process, 7th Edition (2009) Tata Mcgraw Hill Information Technology.
2. Stefan Schach Software Engineering, Tata Mcgraw Hill Publishing Company, (2007)
3. KK Aggarwal, Yogesh Singh, Software Engineering, (2012), 3rd Edition, New Age International.

REFERENCE BOOKS:

1. James F. Peter, Software Engineering An Engineering Approach, John Wiley (2004).
2. Pankaj Jalote An integrated Approach to Software Engineering, Narosa (2005).

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

IT305B JAVA PROGRAMMING
B. Tech. Semester I V (Information Technology)

L	T	P	Credits	Class Work	:	25 Marks
3	1	--	4	Examination	:	75Marks
				Total	:	100 Marks
				Duration	of	3 Hours
				Examination		

UNIT -I

Introduction to Java: Importance and features of Java, Concepts of Java Virtual machine (JVM) Keywords, Constants, Variables and data types, operators and expressions, Control statement Conditional statements, loops and iterations. Class definition, adding variables and methods creating objects, constructors, defining methods, calling methods, method overloading. Creating array, one and two dimensional array, string array and methods String and String Buffer class Wrapper classes.

Inheritance: Basic types, super classes, Multilevel hierarchy abstract and final classes, Object Packages and interfaces, Access protection, Extending Interfaces, Exception handling, Fundamental exception types, uncaught exception, throw, throws, final methods, creating own exception

UNIT -II

Multithreaded programming: Review of fundamentals, Java thread model, synchronization, messaging, thread class, Runnable interface, interthread communication, Monitors, Deadlock, Producer/ Consumer problems, Wait() and notify(), Performance issues.

Input/Output: Basics, Streams, Byte and Character Streams, predefined streams, reading and writing from console and files, using Java packages.

UNIT -III

Networking in Java: Networking fundamentals, Client/server model, Internet addresses, Socket networking classes and interfaces, using Java.net package, TCP/IP and data gram program HTTP protocol and URLs

UNIT -IV

Event Handling: Different mechanism, the delegation event model, classes, Event Listener Interfaces, Adapter and Inner classes, Working with windows, graphics and text, using AWT controls, Layout managers and menus, handling Image, animation, sound and video Java Applet

TEXT BOOKS

1. Core Java Volume I and II 2nd edition-Sun Microsystems
2. Java 2 The Complete Reference Patrick Naughton and Herbert Schidt, second Edition
3. Programming with Java E. Balaguruswamy, Second edition, TMH

REFERENCE BOOK:

1. HTML 4 Unleashed Rick Dranell, Second edition, Tech media publication

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

CSE305B COMPUTER NETWORKS

B. Tech. Semester V (Information Technology) (Common with CSE)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I:

OSI Reference Model and Network Architecture: Introduction to Computer Networks, Example networks ARPANET, Internet, Private Networks, Network Topologies: Bus, Star, Ring, Hybrid, Tree, Complete, Irregular Topology; Types of Networks : Local Area Networks, Metropolitan Area Networks, Wide Area Networks; Layering architecture of networks, OSI model, Functions of each layer, Services and Protocols of each layer.

UNIT II:

TCP/IP: Introduction, History of TCP/IP, Layers of TCP/IP, Protocols, Internet Protocol Transmission Control Protocol, User Datagram Protocol, IP Addressing, IP address classes, Subnet Addressing, Internet Control Protocol ARP, RARP, ICMP, Application Layer, Domain Name System, Email SMTP, POP,IMAP; FTP, NNTP, HTTP, Overview of IP version 6.

UNIT-III:

Local Area Networks: Introduction to LANs, Features of LANs, Components of LANs, Usage of LANs, LAN Standards, IEEE 802 standards, Channel Access Methods, Aloha, CSMA, CSMA/CD, Token Passing, Ethernet, Layer 2 & 3 switching, Fast Ethernet and Gigabit Ethernet, Token Ring, LAN interconnecting devices: Hubs, Switches, Bridges, Routers, Gateways.

UNIT IV:

Wide Area Networks: Introduction of WANs, Routing, Congestion Control, WAN Technologies, Distributed Queue Dual Bus (DQDB), Synchronous Digital Hierarchy (SDH)/ Synchronous Optical Network (SONET), Asynchronous Transfer Mode (ATM), Frame Relay, Wireless Links.

Introduction to Network Management: Remote Monitoring Techniques: Polling, Traps, Performance Management, Class of Service, Quality of Service, Security management, Digital signatures, SSL, Firewalls, VLANs, Proxy Servers.

TEXT BOOKS:

1. Computer Networks (3rd edition), Tanenbaum Andrew S., International edition, 1996.

REFERENCE BOOKS:

1. Data Communications, Computer Networks and Data Systems (4th edition), Halsall Fred, 2000, Addison Wesley, Low Price Edition.
2. Business Data Communications, Fitzgerald Jerry, Computer Networks A System Approach, Larry L. Peterson & Bruce S. Davie, 2nd Edition

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all; at least one from each unit

CSE307B ANALYSIS AND DESIGN OF ALGORITHMS
B. Tech. Semester I V(Information Technology) (Common with CSE)

L	T	P	Credits		Class Work	: 25 Marks
3	1	--	4		Examination	: 75Marks
					Total	: 100 Marks
					Duration of Examination	: 3 Hours

UNIT-I

Brief Review of Graphs, Sets and disjoint sets, union, sorting and searching algorithms and their analysis in terms of space and time complexity.

Divide and Conquer: ; Y b Y f U` ` a Y h \ c X ž ` V] b U f m` g Y U f W \ ž ` a Y f [Y ` g c f h ž ` multiplication algorithms and analysis of algorithms for these problems.

UNIT-II

Greedy Method: General method, knapsack problem, job sequencing with dead lines, minimum spanning trees, single souce paths and analysis of these problems.

Dynamic Programming: General method, optimal binary search trees, O/I knapsack, the traveling salesperson problem.

UNIT-III

Back Tracking: ; Y b Y f U` ` a Y h \ c X ž ` , ` e i Y Y b Ñ g ` d f c V` Y a ž ` [f U d \ ` Wc` c i problems. Branch and Bound: Method, O/I knapsack and traveling salesperson problem, efficiency considerations. Techniques for algebraic problems, some lower bounds on parallel computations.

UNIT-IV

NP Hard and NP Complete Problems: 6 U g] W` Wc b WY d h g ž ` 7 c c _ Ñ g ` h \ Y c f Y a ž ` B D ` \ U f ` some simplified NP hard problems.

TEXT BOOKS:

1. Fundamental of Computer algorithms, Horowitz and Sartaj Sahni, 1978, Galgotia Publ.,
2. Introduction To Algorithms, Thomas H Cormen, Charles E Leiserson And Ronald L Rivest: 1990, TMH

REFERENCE BOOKS:

1. The Design and Analysis of Computer Algorithm, Aho A.V. Hopcroft J.E., 1974, Addison Wesley.
2. Algorithms-The Construction, Proof and Analysis of Programs, Berlion, P.Bizard, P., 1986. Johan Wiley & Sons,
3. Introduction to Design and Analysis of Algorithm, Goodman, S.E. & Hedetnieni, 1997, MGH.
4. Introduction to Computers Science an algorithms approach , Jean Paul Trembley, Richard B.Bunt, 2002, T.M.H. .

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all; at least one from each u

CSE309B THEORY OF AUTOMATA & COMPUTATION
B. Tech. Semester VI (Information Technology) (Common with CSE)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

Basic Computational Constructs : Finite State Systems, Basic Definitions Non-deterministic finite automata (NFA), Deterministic finite automata (DFA), Equivalence of DFA and NFA Finite automata with ε, Regular Expressions, Equivalence of finite automata and Regular Expressions, Regular expression conversion and vice versa.

Concept of basic Machine, Properties and limitations of FSM, Moore and Mealy Machines, Equivalence of Moore and Mealy machines,.

UNIT-II

Regular Sets & Grammars : The Pumping Lemma for Regular Sets, Applications of the pumping lemma, Closure properties of regular sets, Myhill-Nerode Theorem and minimization of finite Automata, Minimization Algorithm.

Definition, Context free and Context sensitive grammar, Ambiguity regular grammar, Reduced forms, Removal of useless Symbols and unit production, Chomsky Normal Form (CNF), Greibach Normal Form (GNF).

UNIT-III

Pushdown Automata & Turing Machines : Introduction to Pushdown Machines, Applications of Pushdown Machines

Deterministic and Non-deterministic Turing Machines, Correspondence Problem.

UNIT-IV

Chomsky Hierarchies & Computability: Chomsky hierarchies of grammars, Unrestricted grammars, Context sensitive languages, Relation between languages of classes.

Primitive Recursive Functions.

TEXT BOOK:

1. Introduction to automata theory, language & computation by S. G. Jiang & O.D.Ullman, R Mothwani, Addison Wesley Publishers

REFERENCE BOOKS:

- 1.Theory of Computer Sc.(Automata, Languages and computation) by K.L.P.Mishra & N.Chandrasekaran, 2000, PHI.
- 2.Introduction to formal Languages & Automata by Peter Linz, 2001, Narosa Publ..
- 3.Fundamentals of the Theory of Computation Principles and Practice by R.Greenlaw and H. James Hoover, 1998, Harcourt India Pvt. Ltd..
- 4.Elements of theory of Computation by H.R. Lewis & C.H. Papaditriou, 1998, PHI.
- 5.Introduction to languages and the Theory of Computation by John C. Martin 2012, T.M.H.

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all; at least one from each unit

IT-321B DATABASE ADMINISTRATION LAB
B. Tech. Semester I V(Information Technology)

L	T	P	Credits	Class Work	:	20 Marks
		2	1	Examination	:	30 Marks
				Total	:	50 Marks
				Duration	of	3 Hours
				Examination		

1. To Study architecture of the oracle DBMS.
2. To study the installation of the Oracle and MySQL DBMS.(standalone mode a Client Server Mode) in windows environment
3. To study the installation of the Oracle and MySQL DBMS.(standalone mode an Client Server Mode) in windows environment
4. To study different types of users and create users in Oracle (using command p aswell as GUI)
5. Study of various types of privileges to the users in Oracle.
6. Granting and Revoking of privileges to users.
7. To study Use of Import/Export utilities in Oracle
8. Study of Commit/Rollback of Transactions in Oracle
9. Study of concurrency control mechanism of Oracle.
10. Study of Recovery technique used by Oracle.

Note: at least 5 more exercise related to the contents of the subject be given to students

IT323B SOFTWARE ENGINEERING LAB
B. Tech. Semester I V(Information Technology)

L	T	P	Credits	Class Work	:	20 Marks
		2	1	Examination	:	30 Marks
				Total	:	50 Marks
				Duration	of	3 Hours
				Examination		

Use of various CASE tools like Turbo Analyst, Rational Rose etc. Use of tools for Analys design modeling, developing exercises like triangle Problem, Graph Problem, CyclomaticComplexity, Test case generation etc.

IT325B JAVA PROGRAMMING LAB
B. Tech. Semester I V(Information Technology)

L	T	P	Credits	Class Work	:	20 Marks
		2	1	Examination	:	30 Marks
				Total	:	50 Marks
				Duration of Examination	:	3 Hours

1. Write a Java Package with Stack and queue classes.
2. Design a class for Complex numbers in Java .In addition to methods for basic operation on complex numbers , provide a method to return the number of objects created.
3. Develop with suitable hierarchy , class for point, shape ,rectangle,square,circle,ellipse,triangle,polygon etc.
4. Design a simple test application to demonstrate dynamic polymorphism.
5. Design a java interface for ADT Stack.
6. Develop two different classes that implement this interface. One using array and other using linked list.
7. Develop a simple paint like program that can draw basic graphical primitives
8. Develop a scientific calculator using event driven programming.
9. Develop a template for linked list class along with its members in Java.

Five more exercises are to be given by teacher concerned based on syllabus IT305E

CSE325B COMPUTER NETWORKS LAB
B. Tech. Semester I V(Information Technology) (Common with CSE)

L	T	P	Credits	Class Work	:	20 Marks
		2	1	Examination	:	30 Marks
				Total	:	50 Marks
				Duration of Examination	:	3 Hours

1. Write specifications of latest desktops and laptops.
2. Familiarization with Networking Components and devices: LAN Adapters, Hubs, Switches, Routers etc.
3. Familiarization with Transmission media and Tools: Coaxial cable, UTP Cable, Crimping Tool, Connectors etc.
4. Preparing straight and cross cables.
5. Study of various LAN topologies and their creation using network devices, cables and computer
6. Configuration of TCP/IP Protocols in Windows/Linux.
7. Implementation of file and printer sharing.
8. Designing and implementing Class A, B, C Networks
9. Subnet planning and its implementation
10. Installation of ftp server and client.

IT331B PROFESSIONAL TRAINING I						
B. Tech. Semester I V (Information Technology)						
L	T	P	Credits		Class Work	: 50 Marks
--	--	2	2		Total	: 50 Marks

At the end of 4th semester each student would undergo four weeks Professional Training in an Industry/ Institute/ Professional Organization/ Research Laboratory etc. with the prior approval of the Training and Placement Officer of the University and submit in the department a typed report along with a certificate from the organization.

The typed report should be in a prescribed format.

The report will be evaluated in the V Semester by a Committee consisting of three teachers from different specialization to be constituted by the Chairperson of the department. The basis of evaluation will primarily be knowledge and exposure of the student towards different processes and the functioning of the organization.

The student will interact with the committee through presentation to demonstrate his/her learning.

Teachers associated with evaluation work will be assigned 2⁵⁰ per week load.

HUM302B REPORT WRITING SKILLS
B. Tech. Semester I VI(Common for all branches)

L	T	P	Credits	Class Work	:	25 Marks
1	-	--	1	Examination	:	50Marks
				Total	:	75 Marks
				Duration of Examination	:	2 Hours

OBJECTIVE

The course aims at developing competence for report writing with a focus on its complex writing techniques and procedures.

COURSE CONTENT

UNIT I

Report Writing

Reports: meaning, their importance and types, Structure of reports, Formats of reports, Use of illustrations

UNIT II

Writing of Business and Technical Reports:

Preliminary steps and procedure of writing report, writing various types of reports on technical, business related topics

RECOMMENDED READING

1. Borowick, Jerome. *Technical Communication and its Applications* New Delhi: PHI, 2000
2. Guffey, Mary Ellen. *Business Communication: Process & Product* SA: South western College Publishing, 2000.
3. Kumar, Sanjay and Pushp Lata. *Communication Skills* Delhi: OUP, 2011

SCHEME OF END SEMESTER EXAMINATION (MAJOR TEST) AND INSTRUCTIONS FOR THE EXAMINER

1. The duration of the exam will be 2 hours.
2. The Question Paper for this theory course shall have three questions covering both the units. All will be compulsory with internal choice.
3. Question no. 1 will be of 10 marks. The question may have two/three parts with enough internal choice, covering various components of both the Units.
4. Question no 2 with internal choice will be of 10 marks covering contents of the Unit I. It will be theoretical in nature.
5. Question no 3 will have two parts of 15 marks each. The student will be asked to write reports on business and technical subject/ issue covering contents of Unit II. The emphasis would be on testing the actual report writing on a given business and technical situation/ subject in letter format.

IT302B WEB TECHNOLOGIES

B. Tech. Semester I VI (Information Technology) (Common with CSE)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

Introduction to the Internet, The world wide web: The idea of hypertext and hyper media; How the web works: HTTP, HTML and URLs; How the browser works: MIME types, plugins and helper applications; The standards HTML, XML, XHTML and the W3C.

Hypertext markup language: The anatomy of an HTML document; Marking up for structure and style: basic page markup, absolute and relative links, ordered and unordered lists, embedding images and controlling appearance: table creation and frames, nesting and targeting.

Descriptive markup: Meta tags for common tasks, semantic tags for aiding search, the doubling code and RDF.

UNIT-II

Separating style from structure with style sheets: Internal style specifications within HTML, linked style specification using CSS, page and site design considerations.

Client side programming: Introduction to the JavaScript syntax, the JavaScript object model, Event handling, Output in JavaScript, Forms handling, miscellaneous topics such as cookies, hidden fields, and images; Applications.

UNIT-III

Server side programming: Introduction to Server Side Technologies CGI/ASP/JSP., Programming languages for server Side Scripting, Configuring the server to support CGI, applications; Input/ output operations on the WWW, Forms processing, (using PERL/VBSCRIPT/JavaScript)

UNIT-IV

Other dynamic content technologies: introduction to ASP & JSP, Delivering multimedia over web pages, The VRML idea, The Java phenomenon: applets and servlets, issues and web development.

Introduction to Microsoft .NET Technology and its comparison with the competing Technologies.

TEXT BOOKS:-

1. Beginning XHTML by Frank Boumpery, Cassandra Greer, Dave Raggett, Jenny Raggett, Sebastian Schnitzenbaumer & Ted Wugofski, 2000, Wrox Press (Indian Shroff Publ. SPD) 1st edition
2. Web Technologies By Achyut S Godbole, Atul Kahate, 2003, T.M.H

REFERENCE BOOKS:-

3. HTML & XHTML: The Definitive Guide by Chuck Musciano, Bill Kennedy, 2000, 4th Edi.
4. XHTML Black Book by Steven Holzner, 2000
5. CGI D f c [f U a a] b [c b h \ Y K c f \ X K] X Y K Y V " C Ñ F Y] ^ ` m 5 g g c W] U h Y
6. G W c h h ; i Y `] W \ ž G \] g \] f ; i b X U f U f U a ž ; i b h \ Y f 6] f n b] Y _ / 7 ; =
7. 8 c i [H] X k Y ` ž > U a Y g G b Y ` ž D U j Y ? i W \ Y b _ c / D f c [f U a a] b [
8. Intranets by James D. Cimino, 1997, Jaico Publ.
9. Internet and Web Technologies by Raj Kamal, 2002, T.M.H

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all; at least one from each u

IT304B SOFTWARE TESTING
B. Tech. Semester I VI (Information Technology)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

Introduction: What is software testing and why it is so hard?, Error, Fault, Failure, Incident, Test Cases, Testing Process, Limitations of Testing, No absolute proof of correctness, Overview of Graph Theory.

Functional Testing: Boundary Value Analysis, Equivalence Class Testing, Decision Table Based Testing, Cause Effect Graphing Technique.

UNIT-II

Structural Testing: Path testing, Depth Paths, Cyclomatic Complexity, Graph Metrics, Data Flow Testing, Mutation testing.

Testing Activities: Unit Testing, Levels of Testing, Integration Tests, System Testing, Debugging, Domain Testing.

UNIT-III

Reducing the number of test cases: Prioritization guidelines, Priority category, Scheme, Risk Analysis, Regression Testing, and Slice based testing

Object Oriented Testing: Issues in Object Oriented Testing, Class Testing, GUI Testing, Object Oriented Integration and System Testing.

UNIT-IV

Testing Tools: Static Testing Tools, Dynamic Testing Tools, and Characteristics of Modern Tools and Implementation with example. Advanced topics in software testing web based testing, Client server testing, Automated test case generation, Regular expression and FSM based testing.

TEXT BOOKS

1. William Perry, Effective Methods for Software Testing , John Wiley & Sons, New York, 1995.
2. Cem Kaner, Jack Falk, Nguyen Qac, Testing Computer Software , Second Edition, Van Nostrand Reinhold, New York, 1993.
3. Boris Beizer, Software Testing Techniques , Second Volume, Second Edition, Van Nostrand Reinhold, New York, 1990.
4. Louise Tamres, Software Testing , Pearson Education, 2002

REFERENCE BOOKS

1. Roger S. Pressman, Software Engineering , D f U Wh] h] c b Y f Ñ g ` 5 d d f c U-MIA International Zh \ ` Edition, New Delhi, 2001.
2. Boris Beizer, BlackBox Testing Techniques for Functional Testing of Software and Systems, John Wiley & Sons Inc., New York, 1995.
3. K.K. Aggarwal & Yogesh Singh, Software Engineering , New Age International Publishers, New Delhi, 2003.
4. Marc Roper, Software Testing , McGraw Book Co., London, 1994.
5. Gordon Schulmeyer, Zero Defect Software McGrawHill, New York, 1990.
6. Watts Humphrey, Managing the Software Process , Addison Wesley Pub. Co. Inc., Massachusetts, 1989.

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

IT306B ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

B. Tech. Semester VI (Information Technology)

L	T	P	Credits
3	1	--	4

Class Work	:	25 Marks
Examination	:	75 Marks
Total	:	100 Marks
Duration of Examination	:	3 Hours

UNIT-I

Basics of AI :- Foundation and history of AI, AI problems and techniques, AI programming languages, introduction to LISP and PROLOG, problem spaces and searches, blind search strategies, Breadth first, Depth first heuristic search techniques Hill climbing: best-first algorithm AO* algorithm, game tree, Min max algorithms, game playing alpha beta pruning.

UNIT-II

Knowledge representation issues, predicate logic, logic programming, semantic nets frames and inheritance, constraint propagation, representing knowledge using rules, rules based deduction systems.

UNIT-III

Heuristic methods, symbolic reasoning under uncertainty, Statistical reasoning, Fuzzy reasoning, Temporal reasoning, Non monotonic reasoning.

UNIT-IV

Principles of Natural language processing, rule based systems architecture, Expert systems, knowledge acquisition concepts, AI application to robotics, and current trends in intelligent systems.

TEXT BOOK:

1. Artificial Intelligence: A Modern Approach, Russell & Norvig. 1995, Prentice Hall.

REFERENCE BOOKS:

1. Artificial Intelligence, Elaine Rich and Kevin Knight, 1991, TMH.
2. Artificial Intelligence A modern approach, Stuart Russel and peter norvig, 1998, PHI.
3. Artificial intelligence, Patrick Henry Winston, 1992, Addison Wesley.

Note: Eight questions will be set by the examiners taking at least two questions each unit. Students will be required to attempt five questions in all; at least one from each unit

IT308B PRINCIPLES OF PROGRAMMING LANGUAGES
B. Tech. Semester I VI (Information Technology)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

Introduction: Characteristics of a good programming language compiler & interpreters Introduction to procedural, nonprocedural, structured, functional and object oriented programming language, Comparison of C & C++ programming languages.

UNIT-II

Elementary & Structured Data Types: Elementary data types Specification & implementation of elementary data types, Declarations, type checking & type conversions, Assignment & initialization, Numeric data types, enumerations

Structured data types & data Objects, specification & implementation of structured data types, Declaration & checking of data structures, Character strings, variable sized structures, Union, pointer

UNIT-III

Sequence Control & Data Control: Implicit & explicit sequence control, sequence control within expressions, sequence control within statement, Subprogram sequence control: simple call return Exception & exception handlers.

Data Control:-Names & referencing environment, static & dynamic scope, block structure, Local data & local referencing environment, Parameters & parameter transmission schemes.

UNIT-IV

Storage Management & other features: Major run time elements requiring storage, programmer and system controlled storage management phases of storage management, Static storage management, Stack based storage management, Heap storage management, variable & fixed size elements.

TEXT BOOKS:

1. Programming languages Design & Implementation by T.W. Pratt, 1996, Prentice Hall Pub.
2. Programming Languages Principles and Paradigms by Allen Tucker & Robert Noonan, 2002, TMH.

REFERENCE BOOKS:

1. Fundamentals of Programming languages by Ellis Horowitz, 1984, Galgotia publications (S.P. Verlag).
2. Programming languages concepts by C. Ghezzi, 1989, Wiley Publications.
3. Programming Languages Principles and Pradigms, Allen Tucker, Robert Noonan 2002, T.M.H.

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all; at least one from each unit

IT310B PARALLEL COMPUTING
B. Tech. Semester I VI (Information Technology)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

Introduction : Parallel Computing, Parallel Architectures, Architectural Classification Schemes, Performance of Parallel Computers, Performance Metrics For Processors, Parallel Programming Models, Parallel Algorithms, Distributed Processing

UNIT-II

Pipeline Processing : Pipeline Performance, Arithmetic Pipelines, Pipelined Instruction Processing, Pipeline Stage Design, Hazards, Dynamic Instruction Scheduling, Memory Systems used in Pipelined Processors, Pipeline Scheduling Theory, High Performance Processor Designs, Branch Prediction

UNIT-III

Synchronous Parallel Processing : Example-SIMD Architecture and Programming Principles, SIMD Parallel Algorithms, Data Mapping and Memory in Array Processors, Case Studies of SIMD Parallel Processors

UNIT-IV

Interconnection Networks : Introduction to Permutations, Elementary Permutations used in Interconnection Networks, Network Classifications, Complete(Nonblocking) Networks: Crossbars and other Commonly Used Interconnection Networks .

TEXT BOOK:-

1. Parallel Computing By M.R. Bhujade, 2nd Edition 2009 , New Age International Publishers.

REFERENCE BOOKS:

1. Computer Architecture : Pipelined and Parallel Processor Design, By M.J.Flynn, 1st Edition, Morgan Kaufmann Publishing House.
2. Parallel Computing By V Rajaraman,

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all; at least one from each unit

CSE303B COMPUTER GRAPHICS

B. Tech. Semester VI (Information Technology) (Common with CSE 5th Sem)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

Introduction to Computer Graphics: What is Computer Graphics, Computer Graphics Applications, Computer Graphics Hardware and software, Two dimensional Graphics Primitives: Points and Lines, Line drawing algorithms: 8 8 5 ž ' 6 f Y g Y b \ U a Ñ g / ' 7h] \faWg . Y ' ' I Xgf] Ubk[] ' bd[c ' UU f[' cWc] c f X] b U h Y g ž ' 6 f Y g Y b \ drawing algorithm; Filled area algorithms: Scanline: Polygon filling algorithm, boundary filled algorithm.

UNIT-II

Two/Three Dimensional Viewing: The 2D viewing pipeline, windows, viewports, window to view port mapping; Clipping: point, clipping line (algorithms)4 bit code algorithm, Sutherland algorithm, parametric line clipping algorithm (Cyrus Beck).

Polygon clipping algorithm: Sutherland-Hodgeman polygon clipping algorithm. Two dimensional transformations: transformations, translation, scaling, rotation, reflection, composite transformation.

Three dimensional transformations: Three dimensional graphics concept, Matrix representation of 3D Transformations, Composition of 3D transformation.

UNIT-III

Viewing in 3D: Projections, types of projections, the mathematics of planer geometric projections, coordinate systems.

Hidden surface removal: Introduction to hidden surface removal Zuffer algorithm , scanline algorithm, area sub division algorithm.

UNIT-IV

Representing Curves and Surfaces: Parametric representation of curves: Bezier curves, Spline curves. Parametric representation of surfaces; Interpolation method.

Illumination, shading, image manipulation: Illumination models, shading models for polygons, shadows, transparency. What is an image? Filtering, image processing, geometric transformation of images.

TEXT BOOKS:

1. Computer Graphics Principles and Practices second edition by James D. Foley, Andri Dam, Stevan K. Feiner and Johb F. Hughes, 2000, Addison Wesley.
2. Computer Graphics by Donald Hearn and M.Pauline Baker, Edition, 1999, PHI

REFERENCE BOOKS:

1. Procedural Elements for Computer Graphics David F. Rogers, 2001, T.M.H Second Edition
2. Fundamentals of 3Dimensional Computer Graphics by Alan Watt, 1999, Addison Wesley.
3. Computer Graphics: Secrets and Solutions by Corrign John, BPB
4. Graphics, GUI, Games & Multimedia Projects in C by Pilania & Mahendra, Standard Publ.
5. Computer Graphics Secrets and solutions by Corrign John, 1994, BPV
6. Introduction to Computer Graphics By N. Krishanmurthy T.M.H 2002

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all; at least one from each unit.

CSE323B COMPUTER GRAPHICS LAB

B. Tech. Semester I VI (Information Technology) (Common with CSE 5th Sem)

L	T	P	Credits	Class Work	:	20 Marks
		2	1	Examination	:	30Marks
				Total	:	50 Marks
				Duration of Examination	:	3 Hours

LIST OF PRACTICALS

1. Write a program for 2D line drawing as Raster Graphics Display.
2. Write a program for circle drawing as Raster Graphics Display.
3. Write a program for polygon filling as Raster Graphics Display.
4. Write a program for line clipping.
5. Write a program for polygon clipping.
6. Write a program for displaying 3D objects as 2D display using perspective transform.
7. Write a program for rotation of a 3D object about arbitrary axis.
8. Write a program for Hidden surface removal from a 3D object.

NOTE: At least 5 more exercises to be given by the concerned teacher.

IT322B WEB TECHNOLOGIES LAB
 B. Tech. Semester I VI (Information Technology)

	L	T	P	Credits			
			2	1	Class Work	:	20 Marks
					Examination	:	30Marks
					Total	:	50 Marks
					Duration of Examination	:	3 Hours

- 1 A Simple HTML home page provide links to move to other pages like hobbies, educational info, personal info etc.
- 2 A HTML program to illustrate the use of frame and frameset tags of HTML.
- 3 5 < HA @ D f c [f U a k \] W \ i g Y U < HA @ W c b h f c ` g h c W f Y U h Y U information like name, address, phone, email, sex, birth date, hobbies etc.
- 4 A HTML Program which demonstrates loops like for loop, do while, while in java script.
- 5 A HTML Program which demonstrates the use of functions in java script.
- 6 A HTML Program which demonstrates various events like onclick, ondblclick, onfocus, onblur, onchange, onmouseover, onmouseover, window event, onload, onunload event.
- 7 A HTML Program to create various functions and sub routines to validate the data entered by user in form. Download
- 8 Create a program to illustrate the concept of associative array in PHP.
- 9 Create PHP program to implement the concept of Session management.
- 10 7 f Y U h Y U D < D d f c [f U a h c X] g d U m g h i X Y b h] b Z c f a U h] c b] database.
- 11 7 f Y U h Y U D < D d f c [f U a h c] b g Y f h g h i X Y b h] b Z c f a U h] c b Z f database.

Note: More exercises based on IT304B may be given by the teacher

IT324B SOFTWARE TESTING LAB
B. Tech. Semester I VI (Information Technology)

L	T	P	Credits	Class Work	: 20 Marks
		2	1	Examination	: 30Marks
				Total	: 50 Marks
				Duration of Examination	: 3 Hours

1. Triangle problem for testing.
2. Quadratic equation problem.
3. To represent a graph in memory.
4. To Write a program to find Cyclomatic Complexity of given program.
5. To write a program to generate a flow graph of given program.
6. To write a program to find independent paths from the flow graph of given program.
7. To write a program to draw binary search tree and find equivalence partitions for test cases.
8. Develop a program to generate cases automatically . (Any one Data flow testing, Basis path testing , Graph based testing.

IT326B AI and Expert System Lab
B. Tech. Semester I VI (Information Technology)

L	T	P	Credits	Class Work	: 20 Marks
		2	1	Examination	: 30Marks
				Total	: 50 Marks
				Duration of Examination	: 3 Hours

1. Study of PROLOG.

Write the following programs using PROLOG:

2. Write a program to solve 8 queens problem.
3. Solve any problem using depth first search.
4. Solve any problem using best first search.
5. Solve 8 puzzle problem using best first search
6. Solve Robot (traversal) problem using means End Analysis.
7. Solve traveling salesman problem.

Note: At least 5 more exercises to be given based on IT326B.

HUM- 304 B ORAL PRESENTATION SKILLS
B. Tech. Semester I VI (Common for all branches)

L	T	P	Credits	Class Work	:	20 Marks
--	--	2	1	Examination	:	30 Marks
				Total	:	50 Marks
				Duration of Examination	:	2 Hours

OBJECTIVE

To enable students to develop their speaking skills with professional proficiency

COURSE CONTENT

Oral Presentations:

Group Discussion; Mock interviews

Note for the Teacher:

At the beginning and end of the semester, a test will be conducted to find the efficacy of the course and degree of improvement in the student.

RECOMMENDED READING

1. Konar, Nira. *English Language Laboratories: A Comprehensive Manual*. Delhi: PHI, 2011
2. Kumar, Sanjay and Pushp Lata. *Communication Skills*. Delhi: OUP, 2011

SCHEME OF END SEMESTER EXAMINATION (Practical)

An external Practical exam of 30 marks of 2 hour duration for the course will be conducted by an external examiner appointed by the university.

NOTE: Students will be tested for their oral communication competence making them participate in Group discussion, mock situations for interview. Students may also be evaluated through a viva conducted by an external examiner.

GPIT302B GENERAL PROFICIENCY & ETHICS
B. Tech. Semester VI (INFORMATION TECHNOLOGY)

L	T	P	Credits	Examination	: 75Marks
--	--	--	2	Total	: 75Marks

The purpose of this course is to inculcate a sense of professionalism in a student along with personality development in terms of quality such as receiving, responding, temperament, attitude and outlook. The student efforts will be evaluated on the basis of his/ her performance / achievements in different walks of life.

A Faculty Counselor will be attached to a group of students which will reside with him /her during the entire period of the degree program in the University. Each faculty member will serve as a faculty counselor. They will act like a local guardian for the students associated with him / her and will help them in terms of career guidance, personal difficulties.

B. The student will present a written report before the committee with following in view:

The student will present before the committee his/her achievements during the current academic session in the form of a written report highlighting followings:

- | | | |
|-----|---|------------|
| I. | Academic Performance | ----- |
| II. | Extra Curricular Activities/ Community Service, Hostel Activities | (8 Marks) |
| III | Technical Activities/ Industrial, Educational tour | (8 Marks) |
| IV | Sports/games | (14 Marks) |
| V | Moral values & Ethics | (15 Marks) |

NOTE: Report submitted by the students should be typed on both sides of the paper.

B A student will support his/her achievement and verbal & communicative skill through presentation before the committee. (30 Marks)

C. Moral values & Ethics

Syllabus - A few topics from the below mentioned books

1. R.R.Gaur, R. Sangar, "Business Ethics: A Text and Cases Approach", Prentice Hall of India Ltd.
2. A. P. Jaiswal, "Business Ethics: A Text and Cases Approach", Prentice Hall of India Ltd.

A minor test/Quiz will be conducted during the semester. It will be the duty of the concerned teacher assigned to teach Moral values & Ethics to submit the awards to respective chairman of the department Director/Principal

The evaluation of this course will be made by the following Committee.

University Departments:

- | | | |
|---|-------------------------------|----------|
| 1 | Chairperson of the Department | Chairman |
| 2 | Senior Most Faculty Counselor | Member |
| 3 | Vice-Chancellor | Member |

Affiliated Colleges:

- | | | |
|---|---|----------|
| 1 | Director/Principal | Chairman |
| 2 | Head of the Department/Sr. Faculty | Member |
| 3 | External Examiner to be appointed by the University | Member |

Note: Remuneration will be paid to the external examiner only (at par with the other practical examinations).

IT401B ADVANCED JAVA

B. Tech. Semester VIII (Information Technology)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

Introduction: Concepts of Classes and Objects, Constructors, Inheritance, Function Overloading, Polymorphism, Packages and Interfaces, exception handling, file streams and their manipulation.

Design of User Interfaces: Swing, Japplet, Icons and Labels, Text Fields, Buttons, Jbutton Class, Check Box, Radio Buttons, The Container, Panel, Windows, and Frame Classes, Combo Box, Tabbed Panes, Scroll Panes, Trees, Tables, Custom Rendering of Jlist Cells.

UNIT-II

JDBC: JDBC Fundamentals, Establishing Connectivity and working with connection interface, working with statements, Creating and Executing SQL statements, working with Result Set Object & Result Set Meta Data. Java Beans: Java Bean, Installing, Starting Bean Development Kit, Use of JAR files and the use of Java Beans API.

UNIT-III

Servlets: Introduction to Servlets, Life cycle of Servlets, Creating, Compiling and running servlet, Reading the servlet Parameters, Reading Initialization parameter, Package javax.servletPackage, Handling HTTP Request and Response (GET / POST Request), Cookies and Session Tracking.

UNIT-IV

JSP: JSPArchitecture, JSP Access Mode, JSP Syntax Basic (Directions, Declarations, Expressions and Script Comments, JSP Implicit Object, Object Scope, Synchronization Issue, Session Management.

TEXT BOOKS:

1. Gary Cornell and Horstmann Cay S., Core Java, Vol I and Vol II, Sun Microsystems Press.
2. Herbert Schildt, Java: The Complete Reference, McGraw-Hill.

REFERENCE BOOKS:

1. Philip Hanna, JSP: The Complete Reference, McGraw-Hill.
2. Deital and Deital, Java How to Program, Prentice Hall (2007).

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

IT403B ADVANCED COMPUTER NETWORKS
B. Tech. Semester I VII (Information Technology)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

Unit I:

Binding Protocol Address Resolution Protocol & RARP, ARP & RARP, packet format, Encapsulation. Internet protocol: Introduction, Ipv4 header, Ipv4Datagrams, Encapsulation, Fragmentation and Reassembly routing, Subnet addressing, Subnet mask, Supernetting special case of IP addresses IPv6 motivation, frame format and addressing, comparison of IPv4 and IPv6.

Unit II:-

Socket Programming: Creating sockets, Posix data type, Socket addressing, Assigning address to a socket, Java socket programming, Thread programming, Berkeley Sockets: Overview, socket address structures, byte manipulation and address conversion functions, elementary socket system calls, socket, connect, bind, listen, accept, fork, close, TCP ports (ephemeral, reserved), Berkeley Sockets: I/O asynchronous & multiplexing models, select & poll function signal & fcntl functions, socket implementation (client & server programs), UNIX domain protocols.

Unit III :-

GSM Overview, GSM Network signaling, GSM Mobility Management, GSM Short Message Service, Mobile Number portability

General Packet Radio Service: Functional Groups, Architecture, GPRS Network nodes and Interfaces, Introductory ideas about WAP

Unit IV :-

Network Security Practice: Authentication Applications Kerberos, X.509 Authentication Service; Electronic Mail Security Pretty Good Privacy, S/MIME; IP Security IP Security Overview, IP Security Architecture, Authentication Header, Encapsulating Security Payload, Combining Security Associations; Web Security Web Security Considerations, Secure Sockets Layer and Transport Layer Security, Secure Electronic Transaction.

Text Books

1. Forouzan, *Data Communication and Networking* TMH
2. Bruce Potter and ...
3. Forouzen, *Data Communication and Networking* TMH

Reference Books

1. Behrouz A. Forouzan, *TCP/IP Protocol Suite*
2. William Stallings, *Network Security Essentials*, 2nd Edition. PHI New Delhi
3. Ralph Oppliger, *ArtTechHouse, 2009*

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit

CSE401B MOBILE APPLICATIONS DEVELOPMENT
B. Tech. Semester I VIII (Information Technology) (Common with CSE)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

Introduction to Mobile Application Development :-Definition of mobile computing, various types of mobile computing devices (mobile computers, smart phones and dedicated devices). Web based applications, Native applications and Compare and contrast web based mobile applications against native applications, history of mobile browsers and Internet languages such as HTML and JavaScript.

UNIT-II

Infrastructure :-Describe mobile and cell phone technologies (CDMA, GSM, 3G, 4G), Compare and contrast 3G and 4G, Internet terms: IP address, subnet mask, gateway, DNS, static vs Dynamic IP, transport including HTTP , routing secure connections, proxies and reverse proxy
Need for storage, local Storage, storage on Web

UNIT-IV

HTML/CSS/DOM and Scripting. Basic HTML: validation, rendering and web browser, Cascading Style Sheets (CSS) and how to use them, document object model (DOM) : document, objects, model, DOM utilization in web design, basic JavaScript code and constructs of the JavaScript language.

UNIT-IV

Designing mobile user interfaces and Mobile Platforms
Design mobile interfaces, usability, ways to test user interfaces, various types of interfaces for mobile apps : Interactive voice response (IVR), SMS/MMS, Mobile web, Native applications, Hybrids, mobile application development design considerations: Text entry, screen size, user interface and user context.
Mobile Platforms: URI for mobile apps, Compare and contrast native mobile platforms such as tightly controlled (iPhone), open (Android), and licensed (Windows Mobile), web as a mobile application platform.

TEXT BOOKS:

1. @ U i f Y b ' 8 U f W Y m ' U b X ' G \ U b Y ' 7 c d b ' X] Y W U z h] [c 5 b b ' X 8 f Y c j] Y X ' ' c K d] a f Y Y b ' h Y e g z ' ' D 5 Y d U f g c (2011)nd

Reference Books:

1. F Y h c ' A Y] Y f z ' [D f c Z Y g g] c b U ' ' 5 b X f c] X ' & ' 5 d d '] W U h] c b ' 8 Y j Y ' c d
2. A U f _ ' @ ' A i f d \ m z ' [6 Y [] b b] b [' 5 b X f c] X I z ' K] ' Y m ' = b X] U ' D j h ' @ h X
3. Sayed Y H U g \] a] ' U b X ' G U h m U ' ? c a U h] b Y b] z ' [D f c ' 5 b X f c] X I z ' K] ' Y m ' : (" ' ' 6 f] U b ' : '] b [z ' [A c V] ' Y ' 8 Y g] [b ' U b X ' 8 Y j Y ' c d a Y b h . ' D f U W h] W techniques for creating mobile sites and web

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

CSE404B SOFTWARE PROJECT MANAGEMENT

B. Tech. Semester VII (Information Technology)(Common with CSE 8th SEM)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

UNIT-I

Introduction to Software Project Management (SPM): Definition of a Software Project (SP), SP Vs. other types of projects activities covered by SPM, Fundamentals of Software Project Management (SPM) Identification, Vision and Scope document, Project Management Cycle, SPM Objectives, project as a system, management control, requirement specification, information and control in organization, Project management and CMM
Stepwise Project planning: Introduction, selecting a project, identifying project scope objectives, identifying project infrastructure, analyzing project characteristics, identifying project products and activities, estimate effort each activity, identifying activity risk, allocate resources, review/ publicize plan.

UNIT -II

Project Evaluation & Estimation: Cost benefit analysis, cost benefit evaluation techniques, risk evaluation. Selection of an appropriate project approach, structured methods, rapid application development, waterfall, spiral-models. Prototyping, delivery. Aarecht function point analysis.

Project Scheduling: Objectives of activity planning, project schedule, projects and activities, Identifying activities sequencing and scheduling activities, network planning model, network Diagrams, CPM representation flagged activities, backward and forward pass, identifying critical path, activity throat, shortening project , precedence networks.

Risk Management: Introduction, the nature of risk, managing risk, risk identification, risk analysis, reducing the risk evaluating risks to the schedule, calculating the z values.

UNIT -III

Project Monitoring & control: identifying resource requirements, scheduling resources, PERT, Gantt Charts, Earned Value Analysis, Earned Value Indicators: Budgeted Cost for Work Scheduled (BCWS), Cost Variance (CV), Schedule Variance (SV), Cost Performance Index (CPI), Error Tracking, Software Reviews, Types of Review: Inspections, Deskchecks, Walkthroughs, Code Reviews, Pair Programming.

Managing contracts and people: Introduction, types of contract, stages in contract, placement, typical terms of a contract, contract management, acceptance, Managing people and organizing terms: Introduction, understanding behavior, organizational behavior: a back ground, selecting the right person for job, instruction in the best methods, motivation, working in groups, becoming a team, decision making, leadership, organizational structure, conclusion, further exercises.

UNIT -IV

Software quality Assurance and Testing: Testing Objectives, Testing Principles, Test Plans, Test Cases, Types of Testing, Levels of Testing, Test Strategies, Program Correctness, Program Verification & validation, Concept Software Quality, Software Quality Attributes, Software Quality Metrics and Indicators, The Sillit Capability Model CMM), SQA Activities, Formal SQA Approaches: Proof of correctness, Statistical quality assurance, Cleanroom process Software Project Management Tools: CASE Tools, Planning and Scheduling Tools, Project

TEXT BOOKS:

Project Management (2nd Edition), by Bob Hughes and Mike Cotterell, 1999, TMH

Reference Books:

Project Management 2/c. Maylor
S. A. Kelkar, Software Project Management, PHI Publication.

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students are required to attempt five questions in all at least one from each unit

CSE421B MOBILE APPLICATION DEVELOPMENT LAB
B. Tech. Semester I VII (Information Technology)

L	T	P	Credits	Class Work	:	20Marks
--	--	2	2	Examination	:	30
				Total	:	50 Marks

Develop an Android based Project

Learn Android

Lesson 1: Getting Started with Android Development

Lesson 2: Activities and Views: Android Manifest.xml, Activity Class ,Basic View Components: Layouts and Buttons

Lesson 3: Navigation with Data: Working with Intent, Sharing Data Between Activities, Application Class

Lesson 4: Android Resources: String Resources, Loading Strings in XML, Loading Strings in Code, The Resource Values Folder

Lesson 5: Drawables Image Basics, Drawable Folders and Qualifiers, Dimensions, Image Padding, The ImageButton Widget

Lesson 6: Lists: Implementing an Android List, ListView, ListActivity, Empty Lists , ListAdapter, Sorting the Adapter, Overriding ArrayAdapter, List Interaction

Lesson 7: Dialogs, New and Old : AlertDialog, Custom Dialog, Support Library, Fragments, DialogFragment

Lesson 8: Menus: Options Menu, Modifying an Options Menu, Context Menu

Lesson 9: Saving Data with Shared Preferences: Shared Preferences, Getting Started with Shared Preferences, PreferenceActivity

Lesson 10: Saving Data with a Database: Setting Up SQLite, Creating a Helper , using the Helper, Cursor and CursorAdapter

Lesson 11: Threading with AsyncTasks: Threading in Android, AsyncTask, Tracking Progress

Lesson 12: Styles and Themes: Introduction to Styling: Defining Styles, Defining Themes, Style Inheritance, Direct Theme References

IT421B ADVANCED JAVA LAB
B. Tech. Semester I VII (Information Technology)

L	T	P	Credits	Class Work	:	20Marks
--	--	2	2	Examination	:	30
				Total	:	50 Marks

LIST OF PRACTICALS / DEMONSTRATIONS

Development of programs relating to :

JDBC

Servlets

Beans

RMI

JSP

IT425B PROJECT
B. Tech. Semester I VII (Information Technology)

L	T	P	Credits	Class Work	:	100Marks
--	--	4	4	Total	:	100 Marks

The primary objective of this course is to develop in students the professional quality of synthesis employing technical knowledge obtained in the field of Engineering & Technology through project work involving design, analysis augmented with creativity, innovation and ingenuity.

Project involving design/ fabrication/ testing/ computer simulation/ case studies etc. which commences in the VII Semester will be completed in VIII Semester and will be evaluated through a panel of examiners consisting of the following:

Chairman of Department	:	Chairperson
Project coordinator	:	Member Secretary
Respective project supervisor	:	Member

The student will be required to submit two copies of the project report to the department for record (one copy each for the department and participating teacher).

Project coordinator will be assigned the project load of maximum of 2 hrs. per week including his own guiding load of one hr. However, the guiding teacher will be assigned maximum of one period of teaching load irrespective of number of students/groups under him/her.

The format of the cover page and the organization of the body of the report for all the B.Tech. will be finalized and circulated by the Dean, Faculty of Engineering and Technology

IT 429B PROFESSIONAL TRAINING II
B. Tech. Semester I VII (Information Technology)

L	T	P	Credits	Class Work	: 50 Marks
--	--	2	2	Total	: 50 Marks

- < At the end of the semester each student will undergo four weeks Professional Training in an Industry/ Institute/ Professional / Organization/ Research Laboratory etc. with the prior approval of the Training and Placement Officer of the University and submit in the department a typed report along with a certificate from the organization.
- < The typed report should be in a prescribed format.
- < The report will be evaluated in the VII Semester by a Committee consisting of three teachers from different specializations to be constituted by the Chairperson of the department. The basis of evaluation will primarily be the knowledge and exposure of the student towards different processes and the functioning of the organization.
- < The student will interact with the committee through presentation to demonstrate his/ her learning.
- < Teachers associated with evaluation work will be assigned 2 periods per week load.

MEI 623B ENTREPRENEURSHIP

B. Tech. Semester I VII (Information Technology) Open Elective

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT-I

ENTREPRENEURIAL DEVELOPMENT PERSPECTIVE: Concepts of Entrepreneurship Development, Evolution of the concept of Entrepreneur, Entrepreneur Vs. Intrapreneur, Entrepreneur Vs. Entrepreneurship, Entrepreneur Vs. Manager, Attributes and Characteristics of a successful Entrepreneur, Role of Entrepreneur in Indian economy and developing economies with reference to Employment Development, Entrepreneurial Culture

UNIT II

CREATING ENTREPRENEURIAL VENTURE: Business Planning Process, Environmental Analysis Search and Scanning, Identifying problems and opportunities, Defining Business Idea, Basic Government Procedures to be complied with.

UNIT III

ENTREPRENEURSHIP DEVELOPMENT AND GOVERNMENT: Role of Central Government and State Government in promoting Entrepreneurship, Introduction to various incentives, subsidies and grants, Export Oriented Units- Fiscal and Tax concessions available; Role of Central/State agencies in the Entrepreneurship Development- District Industries Centers (DIC), Small Industries Service Institute (SISI), Entrepreneurship Development Institute of India (EDII), National Institute of Entrepreneurship and Small Business Development (NIESBUD), National Entrepreneurship Development Board (NEDB).

UNIT IV

PROJECT MANAGEMENT AND CASE STUDIES

Technical, Financial, Marketing, Personnel and Management Feasibility, Estimating and Financing funds requirement - Schemes offered by various commercial banks and financial institutions like IDBI, ICICI, SIDBI, SFCs, Venture Capital Funding, Why do Entrepreneurs fail? The Four Entrepreneurial Pitfalls (Peter Drucker), Case studies of Successful Entrepreneurial Ventures, Failed Entrepreneurial Ventures and Turnaround Ventures.

Texts and References:

1. Entrepreneurship: New Venture Creation David H. Holt.
2. Entrepreneurship- Hisrich Peters.
3. The Culture of Entrepreneurship Brigitte Berger.
4. Project Management- K. Nagarajan.
5. Dynamics of Entrepreneurship Development Vasant Desai.
6. Entrepreneurship Development Dr. P.C.Shejwalkar.
7. Thought Leaders Shrinivas Pandit.
8. Entrepreneurship, 3rd Ed. Steven Brandt.
9. Business Gurus Speak S.N.Char.
10. The Entrepreneurial Connection Gurmit Narula.

Note:

1. In the semester examination, the examiner will set two questions from each unit (total 08 questions in all) covering the entire syllabus. The students will be required to attempt only one question from each unit.
2. The use of scientific calculator will be allowed in the examination. However, programmable calculator and cellular phone will not be allowed.

BME 451B MEDICAL INSTRUMENTATION

B. Tech. Semester VIII (Information Technology) Open Elective

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT-I

PHYSIOLOGY AND TRANSDUCERS: Cell and its structure, Action and resting potential, Propagation of action potential, Sodium pump, Nervous system, CNS, PNS, Nerve cell, Synapse, Cardio pulmonary system, Physiology of heart and lungs, Circulation and respiration, Transducers, Different types, Piezo-electric, ultrasonic, resistive, capacitive, inductive transducers, Selection criteria.

UNIT-II

ELECTROPHYSIOLOGICAL AND NON-ELECTRICAL PARAMETER MEASUREMENTS: Basic components of a biomedical system, Electrodes, Micro, needle and surface electrodes, Amplifiers, Preamplifiers, differential amplifiers, chopper amplifier, Isolation amplifier. ECG, EEG, EMG, ERG, Lead systems and recording methods, Typical waveforms. Measurement of blood pressure, Cardiac output, Cardiac rate, Heart sound, Respiratory rate, Gas volume, Flow rate of CO₂ in exhaust air, PH of blood, ESR, GSR measurements, Plethysmography.

UNIT-III

MEDICAL IMAGING AND PATIENT MONITORING SYSTEMS: X-ray machine- Radio graphic and fluoroscopic techniques, Computer tomography, MRI, Ultrasonography, Endoscopy, Thermography, Different types of biotelemetry systems and patient monitoring, Electrical safety. Biological effects of X-rays and precautions.

UNIT-IV

ASSISTING AND THERAPEUTIC EQUIPMENTS: Pacemakers, Defibrillators, Ventilators, Nerve and muscle stimulators, Diathermy, Heart, Lung machine, Audio meters, Dialyzers. Respiratory Instrumentation, Mechanism of respiration, Spirometry, Pneumotachograph Ventilators.

TEXT BOOKS

1. Biomedical Instrumentation and Measurements, Leslie Cromwell and F.J. Weibell, E.A. Pfeiffer, PHI, 2nd Ed, 1980.
2. Medical Instrumentation: Application and Design, John G. Webster, John Wiley 3rd Ed., 1998

REFERENCE BOOKS

1. Principles of Applied Biomedical Instrumentation, L.A. Geoddes and L.E. Baker, John Wiley, 1975.
2. Hand-book of Biomedical Instrumentation, R.S. Khandpur, TMH, 2nd Ed., 2003.
3. Biomedical Telemetry, Mackay, Stuart R, John Wiley, 1

Note:

1. In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

ECE 305B CONSUMER ELECTRONICS

B. Tech. Semester I VII (Information Technology) I Open Elective

L	T	P	Credits		Class Work	: 25 Marks
4	-	--	4		Examination	: 75 Marks
				Total		: 100 Marks
				Duration of Examination		: 3 Hours

UNIT I

MONOCHROME TV (INTRODUCTION): Elements of a TV System, Picture transmission, Sound transmission, Picture reception, Sound reception, Synchronization, Receiver control, Image continuity, Scanning Process Aspect Ratio, Flicker, Composite Video Signal, Picture Elements, Kell factor, Vertical Resolution, Horizontal Resolution, Video bandwidth, Interlacing, 25 Line System, Bandwidths for TV Transmission, Vertical and horizontal synch detail, Vestigial Side Band transmission (Advantages and Disadvantages)

MONOCHROME TV (PICTURE AND CAMERA TUBES): Monochrome picture tube, beam reflection, Beam focussing, Screen Phosphor, Face plate, Picture tube characteristics, picture tube circuit controls, Monochrome Camera Tubes: Basic principle, Image Orthicon, Vidicon, Plumbicon

UNIT II

COLOUR TV ESSENTIALS: Compatibility, Colour perception, Three Colour theory, Luminance, Hue and Saturation Dispersion and Recombination of light, Primary and secondary colours, luminance signal, Chrominance Signal, Colour picture tube, colour TV Camera, Colour TV display Tubes, colour Signal Transmission, Bandwidth for colour signal transmission, Colour TV controls, Cable TV, Block Diagram and principle of working of cable TV.

PLASMA AND LCD: = b h f c X i Wh] c b ž `] e i] X ` Wf mg h U ` g ž h m d Y g ` c Z ` @ 7 8 working, Principle of operation of TN display, Construction of TN display, Behaviour of TN liquid crystals, Viewing angle, colour balance, colour TN display, limitations, advantages, disadvantages, applications.

UNIT III

LED AND DMD : = b h f c X i Wh] c b ` h c ` @ 9 8 ` H Y ` Y j] g] c b ` ž ` Wc a d U f] g c b ` k] introduction to Digital MicroMirror device, Diagram of DMD, principle of working, emerging applications of DMD.

MICROWAVE OVENS AND AIR CONDITIONERS: Microwaves, Transit Time, Magnetron, Waveguides, Microwave Oven, Microwave Cooking. Air conditioning, Components of air conditioning systems, all water Air conditioning systems, all air air conditioning Systems, Split air conditioner.

UNIT IV

MICROPHONES: Introduction, characteristics of microphones, types of microphone: carbon, moving coil, wireless, crystal, introduction to tape recorder.

LOUDSPEAKER: Introduction to ideal and basic loudspeaker, loudspeaker construction types of loudspeaker Dynamic and permanent magnet, woofers, tweeters, brief introduction to baffles, equalisers.

Text Books :

1. Consumer Electronics by S. P. Bali (Pearson Education)
2. Complete Satellite and Cable T.V by R.R Gulati (New Age International Publishers)

Reference Books:

1. Monochrome and Colour Television by R. R. Gulati

Note: In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

EE 451B ENERGY AUDIT

B. Tech. Semester I VII (Information Technology) I Open Elective

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT I

INTRODUCTION TO THE POWER DISTRIBUTION SYSTEM: Description of the power distribution system voltage levels, Components of the distribution system Substation, Transformer, feeders, distribution system planning, operation & maintenance objectives, activities involved in O&M, grid management, load scheduling & dispatch, load balancing, 68/11 KV substation equipment, 11/0.4 KV substation equipment, Distribution transformer seasons for DT failures.

UNIT II

ENERGY ACCOUNTING & ENERGY AUDIT: Need for energy accounting, objectives & functions of energy accounting, Energy flow diagram in power distribution system, energy accounting procedure Energy measurement, and problems in energy accounting & overcoming these problems in energy accounting Definition, need and types of energy audit, energy audit instruments, procedure for conducting an energy audit

UNIT III

AT&C LOSS REDUCTION & EFFICIENCY IMPROVEMENT: Concepts and principles of distribution losses transmission & distribution losses, AT&C losses in power distribution network, factors contributing to hi technical & commercial losses. Technical loss reduction Short term measures for technical loss reduction, long term plans for technical loss reduction, Commercial loss reduction measures for commercial losses, measures for commercial loss reduction.

UNIT IV

DEMAND SIDE MANAGEMENT: An introduction, Why DSM?, Benefits of DSM, DSM in power systems: load management, DSM techniques and emerging trends, EC Act 2001, DSM on consumer side industrial sector, the agricultural sector, the domestic & commercial sectors, ESTO for DSM.

TEXT BOOKS:

1. Handbook of Energy Engineering, The Fairmont Press, INC, Albert Thumann & Paul Mehta.
2. Energy Management Supply & Conservation, Butterworth Heinemann, 2002, R. S. Veeravalli & S. S. Veeravalli.

REFERENCE BOOKS:

1. Hand book on energy audit & environment management by ISBN 993.0920111, C. R. Reddy

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

EEE457B ENERGY RESOURCES & TECHNOLOGY

B. Tech. Semester I VII (Information Technology) I Open Elective

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT-I

ENERGY SOURCES & AVAILABILITY: World energy situation. Indian energy scenario. Comparative study of thermal, hydro, nuclear and gas power plants. Impact of thermal, gas, hydro and nuclear power stations on environment, air and water pollution, green house effect (global warming), Plasma confinement - magnetic confinement and inertial confinement, geothermal, hydrogen energy, fuel cells, Alkaline fuel cells (AFC), Solid oxide fuel cell (SOFC), Molten carbonate fuel cells (MCFC), thermo-electric power, MHD power generation OTEC & tidal waves.

UNIT-II

SOLAR ENERGY: Solar constant, solar radiation geometry, local solar time, day length, solar radiation measurement, radiation on inclined surface, solar radiation data & solar charts. Flat plate collectors, liquid and air type. Theory of flat plate collectors, advanced collectors, optical design of concentrators, selective coatings, solar water heating, solar dryers, solar stills, solar cooling and refrigeration. Thermal storage. Conversion of heat into mechanical energy. Active and passive heating of buildings. Solar cells.

UNIT-III

WIND ENERGY: Wind as a Source of Energy, Characteristics of wind, wind data. Horizontal & Vertical axis wind Mills, Wind Energy: Wind energy potential measurement, general theories of wind machines, basic laws and concepts of aerodynamics, wind mill and wind electric generator. Basic electric generation schemes constant speed constant frequency, variable speed constant frequency and variable speed variable frequency schemes. Applications of wind energy

UNIT-IV

BIOMASS ENERGY: Introduction to biomass, biofuels & their heat content, biomass conversion technologies. Aerobic & anaerobic digester, Factors affecting biogas production, biogas plants - types & description. Utilisation of biogas - Gasifiers direct thermal application of Gasifiers. Advantages & problems in development of Gasifiers, use in I.C. engines, Energy plantation. Pyrolysis scheme. Alternative liquid fuels ethanol and methanol. Ethanol production.

TEXT BOOKS:

1. Electric Power Generation, B.R. Gupta
2. Power Generation, Operation and Control, Wood and Wollenberg, John Wiley & Sons, 1984.
3. Power Plant Engg: G.D. Rai

REFERENCE BOOKS:

1. Renewable Energy Resources: John Twidell and Tony Weir
2. Renewable Energy Resources Conventional & Nonconventional: M.V.R Koteswara Rao
3. Science & Technology of Photovoltaics: Jayarama Reddy P.

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions in all) covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

BT401B BIO-INFORMATICS

B. Tech. Semester I VII (Information Technology) I Open Elective

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT-I

INTRODUCTION: Internet, intranet and extranet, networking, protocols, genomic data, organization, representation, data base management systems.

SEQUENCING DATA BANK: Introduction, collecting and storing sequence in laboratory, nucleic acid data bank Gen Bank, EMBL, AIDS and RNA, protein data bank (PDB), cambridge structural database CSD, genome data bank, hybridoma data bank structure and others.

UNIT-II

SEQUENCE ANALYSIS: Analysis tools for sequence data banks, pair wise alignment: NEEDLEMAN and WUNSCH algorithms, Smith Waterman, multiple alignment CLUSTAL -W, BLAST, FASTA, sequence patterns and motifs and profiles.

PREDICTIONS: Secondary and tertiary structure: algorithms Chasman algorithm, hidden Markov model, neural networking, protein classification, fold libraries, fold recognition (threading), homology detection access to biological data banks.

UNIT-III

PHYLOGENETIC ANALYSIS: Basic concepts in systematics, taxonomy and phylogeny, phylogenetic trees types and their construction, tree building methods, distance methods, multiple alignment character based methods, phylogenetic software.

MANAGING SCIENTIFIC DATA: Introduction, challenges faced in integration of biological information, SRS, Kleisli Query System TAMBIS, P/FDM mediator for a bioinformatics database, federation, discovery link and data management.

UNIT-IV

GENOMICS & PROTEOMICS: Genome mapping, assembly and comparison, functional genomics: sequence based approaches & microarray based approaches, proteomics: technology of protein expression analysis posttranslational modifications, protein sorting, protein interaction.

TEXT / REFERENCE BOOKS:

- < Developing Bioinformatics Computer Skill, ed. Gibes & Jombeck, Shroff Publication
- < Bioinformatics, ed. David W. Mount

Note:

1. In the semester examination, the examiner will set two questions from each unit (total 08 questions in all) covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

AE 417B MODERN VEHICLE TECHNOLOGY

B. Tech. Semester I (VII) (Information Technology) I Open Elective

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT I

TRENDS IN POWER PLANTS: Hybrid vehicles, stratified charged / lean burn engines, hydrogen engines, battery vehicles, Electric propulsion with cables, magnetic track vehicles.

UNIT II

SUSPENSION BRAKES AND SAFETY: Air suspension, Closed loop suspension, antiskid braking system, Retarders, Regenerative braking safety, air bags, crash resistance, passenger comfort

UNIT III

NOISE & POLLUTION: Reduction of noise, Internal & external pollution control through alternate fuels / power plants, Catalytic converters and filters for particulate emission.

UNIT IV

VEHICLE OPERATION AND CONTROL: Computer control for pollution and noise control, control for fuel economy, Transducers and actuators, information technology for receiving proper information and operation of the vehicle like optimum speed and direction.

VEHICLE AUTOMATED TRACKS: Preparation and maintenance of proper road network, National highway network with automated roads and vehicles, Satellite control of vehicle operation for safe and fast travel.

TEXT BOOKS

1. "Modern Vehicle Technology" by B. S. Puri, Tata Mc Graw Hill Publications, New York, 1993.

REFERENCES

1. Beranek.L.L., Noise reduction, McGraw-Hill Book Co., Inc., Newyork, 1993.
2. Bosch Hand Book, 3rd Edition, SAE, 1993.

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions in covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

CE451B POLLUTION & CONTROL

B. Tech. Semester I VII (Information Technology) I Open Elective

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT I

WATER POLLUTION I Classification of water pollutants, water characteristics, effluent standards, primary treatment, secondary treatment aerobic (activated sludge, aerated lagoons, trick filter, roughing filter, rotating biological contactor) anaerobic (contact process, UASB).

UNIT II

AIR POLLUTION: Classification of air pollutants, Particulates: Physical characteristics, mode of formation, settling properties, Control measures.

HYDROCARBONS: Nature; sources, control, Carbon Monoxide: Source, harmful effects on human health, control measures. Oxides of Sulphur and Nitrogen Sources, effects on human health and plants. Control measure.

UNIT III

SOLID WASTE: Types, sources and properties of solid waste, methods of solid waste treatment and disposal. SOLID WASTE MANAGEMENT I Generation, Collection and techniques for ultimate disposal, Elementary discussion on resource and energy recovery.

UNIT IV

Elementary treatment of nuclear pollution, metal pollution, noise pollution their effects & control.

Trace element: Mechanism of distribution, essential and non essential elements, trace of element in environment, its ecological effects and biological effects.

Suggested Books:

1. Environmental Engg.: by Howard s. Peavy & Others, MGH International.
2. Metacalf EDDY I Wastewater engineering revised by George Tchobanoglous (TMH)
3. Environmental Chemistry by B.K. Sharma, Goel Publishing, Meerut.
4. Environmental Chemistry, A.K.DE, Wiley Eastern.
5. Air Pollution: H.C. Perkins Mc Graw Hill.

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions in all) covering the entire syllabus. The students will be required to attempt only 05 questions by selecting at least one question from each unit.

CSE 411B MANAGEMENT INFORMATION SYSTEM

B. Tech. Semester I VII (Information Technology) I Open Elective

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT I

INFORMATION SYSTEM FOUNDATIONS: Introduction to Information System and MIS, Decision support and decision making systems, systems approach, the systems view of business, Managing the digital firm, Electronic Commerce and Electronic business, DBMS, RDBMS, introduction to Telecommunication and Networks

I.T.INFRASTRUCTURE:- Managing Hardware Assets, Managing Software Assets, Managing Data Resources Internet And New It Infrastructure .

UNIT II

CONCEPTUAL SYSTEM DESIGN: Define the problems, set systems objective, establish system constraints, determine information needs determine information sources, develop alternative conceptual design and select one document the system concept, and prepare conceptual design report. Information Systems Security and Control, Ethical and Social Impact of Information Systems.

UNIT III

DETAILED SYSTEM DESIGN: Inform and involve the organization, aim of detailed design, project management of MIS detailed design, identify dominant and trade of criteria, define the sub systems, sketch the detailed operating sub systems and information flow, determine the degree of automation of each operation, inform and involve the organization again, inputs outputs and processing, system testing, software, hardware and tools propose an organization to operate the system, documentation of detailed design

UNIT IV

IMPLEMENTATION, EVALUATION AND MAINTENANCE OF THE MIS: Plan the implementation, acquire floor space and plan layouts, organize for implementation, develop procedures for implementation, train the operating personnel, computer related acquisitions, develop forms for data collection and information dissemination, develop the files test the system, evaluate the system, MIS control and maintain the system. Pitfalls in MIS development, Redesigning the organization with Information systems, Managing Knowledge Work.

TEXT BOOKS:

- 1.Management Information System by W. S. Jawadekar, 2002, Tata McGraw Hill
- 2.Management Information System by K.C. Laudon & J.P. Laudon Edition 2003 Pearson Education Publishers Indian Reprint.
- 3.Information System for Modern Management (4th Edition)- Robert G. Murdick, Loel E. Ross & James R. Claggett. PHI

REFERENCE BOOKS:

- 1.Management Information System; O Brian; TMH
- 2.Management Information System by Davis Olson Mac Graw Hill
- 3.Management Information System by Stallings,(Maxwell Mc Millman Publishers)

Note:

In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.

IT413B CYBER SECURITY

B. Tech. Semester I VII (Information Technology) I Open Elective

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Exam.	:	3 Hours

UNIT I

INTRODUCTION TO CYBERCRIME: Cybercrime and Information Security, Classifications of Cybercrimes, The need for Cyberlaws, The Indian IT Act Challenges to Indian Law and Cybercrime Scenario in India, Weakness in Information Technology Act and its consequences, Digital Signatures and the Indian IT Act Cybercrime and Punishment; Technology, Studies and Cyberlaw; Survival tactics for the Netizens Cyber-offenses Cyberstalking, Cybercafe and Cybercrimes, Botnets, Attack Vector, Cloud Computing;

UNIT II

TOOLS AND METHODS USED IN CYBERCRIME: Proxy Servers and Anonymizers, Phishing and identity theft, Password Cracking, Keyloggers and Spywares, Virus and Worms, Trojan Horses and Backdoors, Steganography, DoS and DDoS Attacks, SQL Injection, Buffer Overflow Cybercrime: Mobile and Wireless Devices: Trends in Mobility, Attacks on Wireless Networks, Credit Card Frauds in Mobile and Wireless Computing Era, Security Challenges, Registry Settings for Mobile Devices, Authentication Service Security Attacks on Mobile/Cell Phones.

UNIT III

UNDERSTANDING COMPUTER FORENSICS: The Need for Computer Forensics, Cyberforensics and Digital Evidence, Forensics Analysis of E-Mail, Digital Forensics Life Cycle, Chain of Custody Concept, Network Forensics, Computer Forensics and Steganography, Relevance of the OSI 7 Layer Model to Computer Forensics, Forensics and Social Networking Sites: The Security/Privacy Threats, Challenges in Computer Forensics, Forensics Auditing, Antiforensics.

UNIT IV

CYBERSECURITY: ORGANIZATIONAL IMPLICATIONS: Cost of Cybercrimes and IPR Issues, Web Threats for Organizations, Security and Privacy Implications from Cloud Computing, Social Media Marketing, Social Computing and the Associated Challenges for Organizations, Protecting People's Privacy in the Organization Organizational Guidelines for Internet Usage, Safe Computing Guidelines and Computer Usage Policy, Incident Handling, Forensics Best Practices, Media and Asset Protection, Importance of Endpoint Security Organizations.

TEXT BOOKS:

1. Introduction to Cyber Security, G Y W i f] h m i b X Y f g h U b X] b [i 7 m V Y f i 7 f] a Y g z i 7 c a d i h Y f Sunit Belapur, Wiley India Publications, April, 2011

Note:

1. In the semester examination, the examiner will set two questions from each unit (total 08 questions in all) covering the entire syllabus. The students will be required to attempt only 5 questions at least one question from each unit.

IT402B DATA ANALYTICS AND APPLICATIONS
B. Tech. Semester I VIII (**Information Technology**)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

Unit-I

Statistical Analysis of Data, Individual Differences, Descriptive Statistics, Frequency Distributions, Histograms, Histograms, Shapes of Distributions, Measures of Central Tendency, Computing the Mean, Measuring Variability, Measures of Relationship, Regression, Reliability Indices, Standard Scores (Z scores), Inferential Statistics, Populations and Samples

Unit-II

The Null Hypothesis, Chi-Square and T Test, Statistical Decisions, Statistical Decision Process, Testing for Mean Differences, Power of a Statistical Test, Statistical versus Practical Significance, Effect Size, Meta-Analysis.

Unit-III

Data Visualization: Meaning and significance, Traits of Meaning full Data, Brief History of Information Visualization, Power of visual perception, Making abstract data Visible, Building Blocks of Information Visualization. Analytical Techniques.

Unit-IV

Big Data, In-Memory Processing, limitations of In Memory Processing. Big Data Privacy, Big data Visualization, Map Reduce algorithm, OLAP and its applications, Data Mining Process, Knowledge Discovery, Decision Support Systems

Text Books

1. Now You See It: Simple Visualization Techniques for Quantitative Analysis Stephen Few
Publisher: Jonathan G Koomey
2. Big Data Analytics: Turning Big Data into Big Money Frank J. Ohlhorst Publisher : Wiley

References Books

1. Gelman, Andrew, and Jennifer Hill *Data Analysis Using Regression and Multilevel/Hierarchical Models*. 1st ed. Cambridge, UK: Cambridge University Press, 2006. ISBN: 9780521867061.
2. Gelman, Andrew, John B. Carlin, Hal S. Stern, and Donald B. Rubin *Bayesian Data Analysis*. 2nd ed. New York, NY: Chapman & Hall, 2003. ISBN: 9781584883883

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least from each unit.

IT404B LINUX ADMINISTRATION

B. Tech. Semester VIII (**Information Technology**)

L	T	P	Credits	Class Work	: 25 Marks
3	1	--	4	Examination	: 75Marks
				Total	: 100 Marks
				Duration of Examination	: 3 Hours

Unit-I

Introduction: History of Unix and Linux, Architecture of Linux, Advantages of Linux. Installation and Hardware configuration: Creating an Installation Diskette, Booting Linux Installation Program, Partitioning Hard Drive(s), Setting up Swap Space Choosing Partitions to Format Booting with LILO, Multi-boot with Other Operating Systems

Unit-II

Introduction to Kernel, Introduction to Linux Shell: Types of Shell, Feature and benefits of Shell. I/O redirection and Piping, pipes, filters, Introduction to various text editors, various Vi editing modes, scrolling, yank and paste, put and delete, set commands, Comparison of Emacs Editor, vi Editor, Pico Editor.

Unit-III

Introduction to Linux Files: Rules for creating files, Linux Files system, file printing, searching files using grep, change permission to set files and change owner of the files. Process, list processes, killing with kill, PID, UID, GID, Signals, nice, renice.

Unit-IV

General Administration issues: root account, Creating user in Linux, Changing password of user, disabling user account, Linux Password & Shadow File Formats System Shutdown and Restart creating groups, Custom Configuration and Administration Issues, Simple commands Introduction to devices: IDE, SCSI, USB and its interface, pin configuration of various devices, Disk Geometry, Configuration of web server, FTP and Telnet. Shell programming, network configuration.

Text Books:

1. Ellen Siever, Robert Love and Arnold Robbins, Linux in Nutshell, Fifth Edition, O'Reilly.
2. Kurt Wall, Mark Watson, Mark Whitis, Linux Programming, Third Edition, SAMS Techmedia.
3. Mark Sobell, Practical Guide to Linux Programming, Pearson Education.

Reference Books:

1. Machtel Garrels, Introduction to Linux A Hands on Guide, Addison Wisley.
2. J.Purcell, Linux Complete Command Reference, Red Hat Software, McGrawhill.

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least from each unit.

IT422B DATA ANALYTICS & APPLICATIONS LAB

B. Tech. Semester I VIII (**Information Technology**)

L	T	P	Credits	Class Work	:	20 Marks
		3	2	Examination	:	30Marks
				Total	:	50 Marks
				Duration of Examination	:	3 Hours

1. Introduction to SPSS and its various windows.
2. Basic Analysis on descriptive statistics
 - a) Frequencies Menu
 - b) Descriptives Menu
3. Creating a Histogram and study of Grouped By Factor
4. Creating a Box Plot.
5. Creating a Stem and Leaf Display.
6. Study of Sampling Distribution
7. Perform one sample T-Test
8. Perform independent Samples T-Test
9. Paired Samples T-Test
10. Perform a Binomial Test
11. Perform One Sample Chi-Square Test.

Note: 1. at least 5 more exercises related to the contents of the subject, must be given by concerned teacher.

Note: 2. SPSS is not the only statistical package available, and there are other several softwares available (e.g., SAS, Stata, R). students must be trained in anyone of these.

IT424B LINUX ADMINISTRATION LAB

B. Tech. Semester VIII (**Information Technology**)

L	T	P	Credits	Class Work	:	20 Marks
		3	2	Examination	:	30Marks
				Total	:	50 Marks
				Duration of Examination	:	3 Hours

1. Write Shell Programs for the following
 - a. Display all the words which are entered as command line arguments.
 - b. Changes Permissions of files in PWD as rwx for users.
 - c. To print the list of all sub directories in the current directory.
 - d. Program which receives any year from the keyboard and determine whether the year is leap year or not. If no argument is supplied the current year should be assumed.
 - e. Program which takes two file names as arguments, if their contents are same then delete the second file.
2. Write shell scripts for the following
 - a. To print the given number in the reversed order.
 - b. To print first 25 Fibonacci numbers.
 - c. To print the Prime numbers between the specified range.
 - d. To print the first 50 Prime numbers.
3. Write shell scripts for the following
 - a. Menu driven program which has the following options.
 - I. contents of /etc/passwd
 - II. list of users who have currently logged in.
 - III. present working directory
 - IV. exit.
 - b. For sorting, searching and insertion, deletion of elements in the list
4. Program to transfer data from one file to another file by using buffered I/O.
5. Program to create two processes to run a loop in which one process adds all even numbers and the other adds all the odd numbers (Hint: use fork ()).
6. Program to demonstrate how to avoid Zombie using wait () .
7. Program to demonstrate orphan process .
8. Program which demonstrates how to avoid Zombie using wait () .

IT452B NETWORK SECURITY (ELECTIVE-I)

B. Tech. Semester I VIII (Information Technology)

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

Unit-I

Introduction: Codes and Ciphers | Some Classical systems | Statistical theory of cipher systems | Complexity theory of crypto systems | Stream ciphers, Block ciphers.

Unit-II

Stream Ciphers: Rotor based system | shift register based system | Design considerations for stream ciphers | Cryptanalysis of stream ciphers | Combined encryption and encoding. Block Ciphers | DES and variant, modes of use of DES.

Public key systems | Knacksack systems | RSK | Diffie Hellman Exchange | Authentication and Digital signatures, Elliptic curve based systems.

Unit-III

Malicious Code: Epidemic of viruses: types of viruses, prevention from virus, life cycle of a virus, immunization, Trojan horse and bombs with examples, writing antivirus / Trojan code | Security Tools | Firewall and Intrusion detection systems.

Unit-IV

Security: Hash function | Authentication: Protocols | Digital Signature standards.

Electronic Mail Security | PGP (Pretty Good Privacy) MIME, data Compression technique.

IP Security: Architecture, Authentication, Encapsulating security Payload Management.

Web security: Secure Socket Layer & Transport Layer security, secure electronic transactions. Firewalls Design principle, established systems.

Text Books:

1. Cryptography and Network Security: Principles & Practices, 2nd Edition by Upper Saddle River, PHI
2. Network Management Principles & Practices by Subramanian, Mani (AWL)
3. SNMP, Stalling, William (AWL)

Reference Books:

1. SNMP: A Guide to Network Management (MGH)
2. Telecom Network Management by H.H. Wang (MGH)
3. Network Management by U. Dlack (MGH)

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

IT454B MOBILE COMPUTING (ELECTIVE-I)

B. Tech. Semester I VIII (Information Technology)

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

Unit-I

Issues in Mobile Computing, Overview of wireless Telephony, IEEE 802.11 & Blue Tooth, Wireless Multiple access protocols, channel Allocation in cellular systems.

Data Management Issues, data replication for mobile computers, adaptive Clustering for Mobile Wireless networks.

Unit-II

Distributed location Management, pointer forwarding strategies, Energy Efficiency in air, Energy Indexing for wireless broadcast data, Mobile IP, TCP Over wireless.

Unit-III

Mobile Agents Computing, Security and fault tolerance, transaction processing in Mobile computing environment.

Unit-IV

Ad hoc network, Routing Protocol, Global State Routing (GSR), Dynamic State Routing (DSR), Fisheye State Routing (FSR), Ad hoc Demand Distance Vector (AODV), Destination Sequenced Distance Vector Routing (DSDV).

Text Books

1. Yi Bing Lin, Wireless and Mobile Networks Architecture , Wiley.
2. R. B. Patel, Mobile Computing, Practical Approach, 1st edition, Khanna Publishing House Delhi
3. Wrox The Beginning WML and WML Script , Wrox Publication
4. Tomasz Imielinski et.al, Mobile Computing, Kluwer Academic Press 1996.

References Books

1. Uwe Hansmann, Pervasive Computing Handbook. The Mobile World, IEE publication 2002
2. Jochen Burkhardt, et.al. Pervasive Computing, Technology and Architecture of Mobile Internet Applications, Addison Wesley, 2002

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

IT456B MULTIMEDIA AND VIRTUAL REALITY(ELECTIVE-I)

B. Tech. Semester I VIII (Information Technology)

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

Unit-I

Introduction: Concept of Multimedia, Media & data stream, main properties of multimedia system, Data stream characteristics & for continuous media Multimedia Applications, Hardware Software requirements Multimedia products & its evaluation.

Components of multimedia: Text, Basic sound concepts, MIDI, Speech, Basic concept of Images, Graphics format, Overview of image processing, Basic concepts of Video & animation, Conventional system, Transmission, Enhanced system, High Definition system, Computer based animation, Design & Authoring Tools, Categories of Authority Tools, Types of products.

Unit-II

Data Compression: Coding requirement, Source, entropy, hybrid coding, JPEG, MPEG, Text compression using static Huffman technique, Dynamic Huffman Technique, Statistical coding techniques.

Unit-III

Computer Technology: Hybrid system, digital system.

Optical Storage Media: Video Disk and other WORMS, Compact Disk Digital audio, Advantage of-CD DA, Frames tracks blocks of CDDA, CD-ROM, and Further CDROM based developments, Principles of CDWO, Prospects of CD technologies.

Unit-IV

Virtual Reality: Introduction to Virtual reality & Virtual reality Systems, Related Technologies: Tele operation & Augmented reality system, VRML Programming, Domain Dependent Application like Medical, Visualization, Visibility computation, Time Critical rendering, Image based VR system.

Text Books

1. David Hillman, Multimedia Technology & Applications , Galgotia Publications.
2. Steinmetz Multimedia Computing Communication and Application Pearson Edn.
3. John Vince virtual Reality Systems Pearsn Education

Reference Books

1. Andleigh and Thakarar Multimedia System Design PHI
2. Nigel Chapman & Jenny Chapman, Digital Multimedia , Wiley Publications.
3. D.P. Mukherjee, Fundamentals of Computer Graphics and Multimedia , PHI.

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

IT460B DATA MINING (ELECTIVE-I)

B. Tech. Semester I VIII (Information Technology)

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

Unit-I:

Introduction to Data Warehouse: Data warehousing Definition, DBMS vs data warehouse, Three-tier architecture, Multidimensional data model, Schemas Multidimensional Databases, OLAP operations, multi-feature cubes.

Introduction to Data Mining: Data mining definition & task, KDD process, KD versus data mining, data mining tools and applications, issues, data mining primitives, supervised and unsupervised learning approaches and preprocessing.

Unit-II:

Mining Association rules: The apriori algorithm, generating rules, improving the efficiency of apriori; rule mining by partitioning; Parallel and Distributed algorithm CDA & DDA; advanced techniques: multidimensional and multi-level association rules, correlation rules; meta-guided mining and constraint based rule mining Incremental rule mining.

Unit III:

Clustering techniques: Cluster analysis, similarity and distance measurement partitioning methods: squared error, means, k-medoids and genetic algorithm approach; Hierarchical Clustering: agglomerative Vs Divisive, Density based methods: Basic definitions and DBSCAN algorithm; Constraint based clustering.

Unit IV:

Classification and Prediction

Classification by Decision tree induction: information gain measure, Tree pruning methods, Bayesian classification, rule based classification, backpropagation in Neural Networks, Genetic Algorithm, Rough Sets, Support Vector Machines Fuzzy techniques; Prediction: linear and nonlinear regression techniques.

Text Books:

Data Mining: Introductory and advanced topics: Margaret H Dunham, S. Srikanth Pearson education, 2008.

Reference books

1. Data Warehousing In the Real World; Sam Anahory & Dennis Murray; 1997, Pearson.
2. Data Mining: Concepts & Techniques; Jiawei Han & Micheline Kamber; 2001, Morgan Kaufmann.
3. Data Mining Techniques; Arun Pujar; 2001, University Press; Hyderabad.
4. Data Mining; Pieter Adriaans & Dolf Zantinge; 1997, Pearson,

Note: Eight questions will be set in all by the examiners taking at least one question from each unit. Students will be required to attempt five questions in all.

CSE463B SOFTWARE AGENTS (ELECTIVE-I)
B. Tech. Semester I VIII (Information Technology)

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

Unit-I

Agents Introduction

Agent Definition - Autonomy vs. Agency, Agent vs Object- Mobile Agents- Agent Programming Paradigms- Frameworks- Agent Reasoning Mobile Agent Context Description Components Features Life Cycle

Unit-II

Agent Communication, Collaboration, and Mobility

Agent Communication Languages Interaction between agents Reactive Agents Cognitive Agents Rational Agents Interaction protocols Agent coordination- Agent negotiation- Agent Cooperation- Agent Organization

Unit-III

Mobile Agents Models and Framework: Standardization and Evolution,

Generating Useable Metrics Evaluating Semantic Alignment Evaluating System Agility- Evaluating Loose Coupling- Survey of Mobile Agent System: JADE, SPRINGS, Voyager, Jini, Aglets, Choosing a Mobile Agent Framework

Unit-IV

Agent Security Issues Threats in Mobile Agents Security Mobile Agent Threat Models Protecting Agents against Malicious Hosts Untrusted Agent-Black Box Security Authentication for agents Security issues for aglets.

Text Books :-

1. Bigus & Bigus, " Constructing Intelligent agents with Java ", Wiley, 1997.
2. Bradshaw, " Software Agents ", MIT Press, 2000.
3. Russel & Norvig, " Artificial Intelligence: a modern approach ", Prentice Hall, 1994.

References Books :-

1. Danny Lange & Mitsuru Oshima Programming and Deploying Java Mobile Agents with Aglets, Addison -Wesley, 1998,
2. Richard Murch, Tony Johnson, " Intelligent Software Agents ", Prentice Hall, 2000.

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all; at least one from each unit.

CSE452B SOFT COMPUTING (ELECTIVE-I)

B. Tech. Semester I VIII (Information Technology) (Common with CSE 7th Sem)

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

Unit-I

Introduction to Genetic Algorithm, Genetic Operators and Parameters, Genetic Algorithms in Problem Solving, Theoretical Foundations of Genetic Algorithms, Implementation Issues.

Unit-II

Neural Model and Network Architectures, Perception Learning, Supervised Hebbian Learning, Backpropagation, Associative Learning, Competitive Networks, Hopfield Network, Computing with Neural Nets and applications of Neural Network.

Unit-III

Introduction to Fuzzy Sets, Operations on Fuzzy sets, Fuzzy Relations, Fuzzy Measures, Applications of Fuzzy Set Theory to different branches of Science and Engineering.

Unit-

Knowledge discovery in databases. Data mining and web mining using soft computing techniques. Soft computing approaches to information systems project management.

Text Books

1. M. Mitchell, An Introduction to Genetic Algorithms, Prentice Hall, 1998.
2. D. E. Goldberg, Genetic Algorithms in Search, Optimization, and Machine Learning, Addison Wesley, 1989.
3. S. V. Kartalopoulos, Understanding Neural Networks and Fuzzy Logic: Basic Concepts and Applications, IEEE Press PHI, 2004.

Reference Books

4. S. Rajasekaran & G. A. Vijayalakshmi Pai, Neural Networks, Fuzzy Logic and Genetic Algorithms: Synthesis & Applications, PHI, 2003.
5. S. N. Sivanandam & S. N. Deepa, Principles of Soft Computing, Wiley India, 2007.

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all; at least one from each unit.

IT462B M-COMMERCE (ELECTIVE-II)

B. Tech. Semester I VIII (Information Technology)

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

UNIT-I

Introduction: Introduction to Commerce, Commerce, Generations of mobile computing, Spectrum allocation, Standard Bodies, Players in the Wireless Space, three tier architecture of mobile computing, Mobile Computing through Internet, Basic cellular system, concept of frequency reuse channels, hand-off mechanism, cell splitting.

UNIT-II

GSM & GPRS: GSM features and Architecture, Network Aspects in GSM, GSM Frequency Allocation, Mobility management hand-off mechanisms, cell splitting, Security issues used in GSM, GPRS features and architecture, network operations, data services in GPRS, applications and limitations, SMS and MMS services architecture and operation details.

UNIT-III

Emerging Telecommunication Technologies: Introduction, bluetooth, EDGE, UMTS, Wireless Broadband (WiMAX), Mobile IP, Java Card, WLAN, Adhoc Networks, Sensor Networks, Spread Spectrum technology, CDMA, Third generation networks and applications, WAP: Model, architecture protocol stack and Security Issues in Mobile Computing.

UNIT-IV

M-Commerce: Introduction to m-commerce: Emerging applications, different players in m-commerce, m-commerce life cycle Mobile financial services, mobile entertainment services, and m-commerce service management.

Management of mobile commerce services: Content development and distribution to handheld devices, content caching, pricing of mobile commerce services.

The emerging issues in mobile commerce: The role of emerging wireless LANs and 3G wireless networks, personalized content management, implementation challenges in m-commerce, futuristic m-commerce services.

TEXT BOOKS:

1. Brian Mennecke and Troy J. Strader, Mobile Commerce: Technology, Theory and Applications, Idea Group Publishing.
2. Yi-Bing Lin, Wiley, Wireless and Mobile Network Architecture.

REFERENCE BOOKS:

1. Upkar Varshney and Ron Vetter, Mobile Commerce: Frameworks, Applications and Networking Support, ACM/Kluwer J. on Mobile Networks and Applications (MONET), June 2002.
2. Upkar Varshney, Mobile Commerce and Applications, A tutorial at IEEE International Conference on Wireless Communications (WCNC).

IT464B SOFTWARE STANDARDS AND QUALITY (ELECTIVE-II)

B. Tech. Semester I VIII (Information Technology)

L	T	P	Credits	Class Work	:	25 Marks
4	-	--	4	Examination	:	75 Marks
				Total	:	100 Marks
				Duration of Examination	:	3 Hours

Unit-I

Concepts and Overview: Concepts of software quality, quality attributes, software quality control and software quality assurance, evolution of SQA, major SQA activities, major SQA issues, zero defect software.

Software Quality Assurance: The philosophy of assurance, the meaning of quality, the relationship of assurance to the software life cycle, SQA techniques. Tailoring the Software Quality Assurance Program: Management review process, technical review process, walkthrough software inspection process, configuration audits, document verification.

Unit-II

Evaluation: Software requirements, preliminary design, detailed design, coding and unit test, integration and testing, system testing, types of evaluations.

Error Reporting: Identification of defect, analysis of defect, correction of defect, implementation of correction, regression testing; Categorization of defect, relationship of development phases.

Unit-III

Trend Analysis: Error quantity, error frequency, program unit complexity, compilation frequency. Corrective action as to Cause: Identifying the requirement for corrective action, determining the action to be taken, implementing the corrective action, documenting the corrective action, periodic review of actions taken.

Unit-IV

CASE tools and their effect on Software Quality, Software Quality Metrics, Standards, certification and assessment, Quality management standards, Quality standards with emphasis on ISO approach, Capability Maturity Models CMM and CMMI, TQM Models, Bootstrap methodology, The SPICE project, ISO/IEC 15504, Six Sigma Concepts for Software Quality.

Text Books

1. Mordechai Ben-Manachem, Garry S. Marliss, *Software Quality: Producing Practical, Consistent Software*, International Thomson Computer Press (1991).
2. Daniel Galin, *Software Quality Assurance from Theory to Implementation*, Pearson Education (2003).
3. Robert Dunn, *Software Quality: Concepts and Plans*, Prentice Hall (1990).

Reference Books

1. Watts Humphery, *A discipline for Software Engineering*, Addison Wesley, Massachusetts (1995)
2. Kamna Malik, Praveen Choudhary, *Software Quality*, D f U Wh] h] c b Y f N c G r a v d H i f f c U W (1999).

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

CSE455B ADVANCED COMPUTER ARCHITECTURE (ELECTIVE-II)
B.TECH. (INFORMATION TECHNOLOGY) 8TH SEMSETER

L T P Credits
3 1 4

Class Work : 25 Marks
Exam. : 75 Marks
Total : 100 Marks
Duration of Exam : 3 hrs.

Unit-I Introduction: Elements of modern computers (computing problems, algorithms, hardware, OS, system software); Evolution of computer architecture; Factors affecting system performance; Architectural development tracks (Multiprocessor tracks , Multivector & SIMD tracks, Multithread & Dataflow tracks)

Conditions); Hardware & Software parallelism; Program partitioning & Scheduling; Program flow machines (Control flow , Data flow , Demand driven); Parallel processor applications; Speedup architectures , open issues)

Unit-II Advanced processor Technology :- Design space ; Instruction pipelines ; Instruction set architecture (RISC, CISC, RISC scalar processors, CISC scalar processors) ; Superscalar Processors , Vector & Symbolic processors;

Pipelining: Linear pipeline processors, Nonlinear pipeline processors, Instruction pipeline(pipelined instruction processing, mechanisms for instruction pipelining, dynamic instruction scheduling , branch handling techniques)

Parallel & Scalable Architectures :Hierarchical bus system, Crossbar switch & multiport memory , multistage & combining networks; Cache coherence & synchronization mechanisms (cache coherence problem, Snoopy bus protocols , directory based protocols .

Unit-III Advanced Memory Technology:- Bus system (Backplane bus specification, addressing & timing protocols, Arbitration , Transaction and Interrupt , IEEE futurebus) Cache organizations (Cache addressing models , cache performance issues); Shared memory organizations(Interleaved memory organization, Bandwidth and fault tolerance , memory allocation schemes , Sequential & weak consistency models . Latency hiding techniques .

Unit-IV Parallel Models and Languages :- Parallel Programming Models(Shared Variable, Message passing, Data Parallel, Object Oriented);Parallel languages & Compilers (language features for parallelism, parallel language constructs, optimizing compilers for parallelism);Code optimization & partitioning (Scalar optimization , Loop & Global optimization, Vectorization , code generation & scheduling , Trace scheduling compilation); Parallel programming environments (S/W Tools, Y Paragon, CM5 Environments , Visualization & Performance tuning)

TEXT BOOK:

1. Advance Computer Architecture : Parallelism , Scalability, Programmability, 2nd Edition by Kai Hwang & Naresh Jotwani, 2012, TMH.

REFERENCE BOOKS:

1. Pipelined and Parallel processor design by Michael J. Flynn 1995, Narosa.

Note: Eight questions will be set by the examiner taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

CSE403B CLOUD COMPUTING (ELECTIVE-II)
B.TECH. (INFORMATION TECHNOLOGY) 8TH SEMSETER

L T P Credits
4 4

Class Work : 25 Marks
Exam. : 75 Marks
Total : 100 Marks

Duration of Exam : 3 hrs

Unit-I

Introduction: Cloud computing history, architecture and essential characteristics, cloud service models, Cloud Deployment models, advantages of cloud computing, cloud v/s grid computing.

Unit-II

Virtualization: Virtualization techniques, Benefits and drawbacks of virtualization, VM migration with its types, hypervisors, types of hypervisors, distributed management of virtual infrastructures, scheduling techniques for advance reservation of capacity, Service oriented architectures, SOA implementation, SOAP v/s REST, web 2.0.

Unit-III

PaaS: Introduction, advantages and disadvantages of PaaS, introduction to google app engine, GAE cost structure, Apache hadoop: MapReduce, HDFS, Hive, Mapreduce programming model, Hadoop as a service.

Unit-IV

Migrating into the cloud: Introduction, challenges in the cloud, legal issues in cloud computing, Economics and Capacity Management, Restricted Choices, Capacity Planning, Queuing and Response Time, Evidence Based Decision Making, Instrumentation (Measuring Resource Consumption), Bottleneck Key Volume Indicators.

Text Books:

1. Cloud Computing Principles and Paradigms, Rajkumar Buyya, Wiley & Sons pub.

Reference Books:

1. Cloud Computing WebBased dynamic IT services: Christian Baun, Springer.
2. Implementing and Developing Cloud Computing Applications: David E.Y Sarna, CRC Press.

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

CSE460B GREEN COMPUTING (ELECTIVE-II)
B.TECH. (INFORMATION TECHNOLOGY) 8TH SEMSETER

L T P Credits
4 4

Class Work : 25 Marks
Exam. : 75 Marks
Total : 100 Marks
Duration of Exam : 3 hrs

Unit-I

Definition of the term, Origins, Fundamental Regulations and industry initiative Government, Industry. Approaches to green computing Middleware Support, Compiler Optimization, Product longevity.

Unit-II

Algorithmic efficiency, High performance computing, Sustainable computing, Resource allocation, Virtualization, Server Consolidation.

Unit III

Terminal servers, Power management, Operating system support, Power supply, Storage, Video card, Display, Tools for monitoring.

Unit IV

Green mobile, optimizing for minimizing battery consumption, Web, Terminal and Spatial Data Mining Materials recycling, Telecommuting, metrics for green computing.

Text Book(s)

1. Green Computing and Green IT Best Practices on Regulations and Industry Initiatives, Virtualization, Power Management, Materials Recycling and Telecommuting by Jason Harris, Emereo Publishing

Reference Book(s)

1. Green Data Center: The steps for the journey by A. Galea, M. Schafer, M. Ebbers, IBM Press
2. The Greening of IT: How companies can make a difference for the environment by John Lamb, IBM Press
3. Green Computing: Large Scale Energy Efficiency by Wu-chun Feng, Virginia Polytechnic Institute and State University, Blacksburg, USA (Eds.), CRC Press
4. Green Computing with Emerging Memory Low-Power Computation for Social Innovation by Kawahara, Takayuki; Mizuno, Hiroyuki (Eds.), Springer Press
5. Sustainable ICTs and Management Systems for Green Computing by Chen Hu (University of North Dakota, USA) and Naima Kaabouch (University of North Dakota, USA), IGI Global Press
6. Green IT for Sustainable Business Practice: A Foundation Guide by Mark O'Neill, British Informatics Society Limited.

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

CSE466B EMBEDDED SYSTEMS (ELECTIVE-II)
B.TECH. (INFORMATION TECHNOLOGY) 8TH SEMESTER

L T PCredits
4 4

Class Work : 25 Marks
Exam. : 75 Marks
Total : 100 Marks

Duration of Exam : 3 hrs

Unit -I

The concepts of embedded system design, Embedded microcontrollers, embedded memories, examples of embedded systems.

Technological aspects of embedded system: interfacing between analog and digital blocks, signal conditioning, Digital signal processing, subsystem interfacing, interfacing with external systems, user interfacing, Design tradeoffs due to process compatibility, Thermal consideration etc.

Software aspects of embedded systems: real time programming languages and operating systems.

Unit-II

Introduction, CPU architecture, registers, instruction sets and modes Loop timing, timers, Interrupts; Interrupt timing, I/O Expansion, I2C Bus Operation Serial EEPROM, Analog to digital converter, UART Baud Rate Data Handling-Initialisation, Special Features serial Programming Parallel Slave Port.

Unit-III

Motorola MC68H11 Family Architecture Registers, Addressing modes Programs. Interfacing methods parallel I/O interface, Parallel Port interfaces, Memory Interfacing, High Speed I/o Interfacing, Interrupt interrupt service routine features of interrupts interrupt vector and Priority, timing generation and measurements, Input capture, Output compare, Frequency Measurement, Serial I/o devices RS.232, RS.485 Analog Interfacing, Applications. ARM processors.

Unit-IV

Real Time Operating System: Task and Task States tasks and data, semaphores and shared Data Operating system Services Message queue Timer Function Events Memory Management, Interrupt Routines in an RTOS environment, basic design Using RTOS.

Books for references

1. David E Simon, An embedded software primer , Pearson education Asia, 2001.
2. John B Peat man Design with Microcontroller , Pearson education Asia, 1998.
3. Jonarthan W. Valvano Brooks/cole Embedded Micro computer Systems. Real time Interfacing Thomson learning 2001.
4. Burns, Alan and Wellings Andy, Real-Time Systems and Programming Languages , Second Edition. Harlow: Addison-Wesley-Longman, 1997.
5. Raymond J.A. Bhur and Donald L.Bialek, An Introduction to real time systems: Design to networking with C/C++ , Prentice Hall Inc. New Jersey, 1999

Note: Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all at least one from each unit.

IT 426B SEMINAR

B. Tech. Semester I VIII (Information Technology)

L	T	P	Credits	Class Work	: 50 Marks
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The objectives of the course remains

- < To learn how to carry out literature search
- < To learn the art of technical report writing
- < To learn the art of verbal communication with the help of modern presentation techniques

A student will select a topic in emerging areas of Engineering & Technology and will carry out task under the observation of a teacher assigned by the department.

He/ She will give a seminar talk on the same before a committee constituted by the chairperson of the department. The committee should comprise of three faculty members from different specializations. teacher associated in the committee will be assigned 2 hours teaching load per week.

< c k Y j Y f ž ` [i] X] b [ar will not be considered towards teaching load.

The format of the cover page and the organization of the body of the seminar report for all undergraduate programs will be finalized and circulated by the Dean, Faculty of Engineering and Technology.

IT 427B PROJECT

B. Tech. Semester I VIII (Mechanical Engineering)

L	T	P	Credits	Class Work	: 75 Marks
--	--	8	8	Examination	: 125Marks
				Total	: 200 Marks
				Duration of Examination	: 3 Hours

The project started in VII Semester will be completed in VIII Semester and will be evaluated through a panel of examiners consisting of the following:

- Chairperson of Department : Chairperson
- Project coordinator : Member
- External expert : To be appointed by the University

The student will be required to submit two copies of his/her project report to the department for record (one copy each for the department and participating teacher).

Project coordinator will be assigned the project load of, maximum of 2 hrs. per week including his guiding load of one hr. However, the guiding teacher will be assigned maximum of one period of teaching load irrespective of number of students/groups under him/her.

The format of the cover page and the organization of the body of the report for the project will be finalized and circulated by the Dean, Faculty of Engineering and Technology

GFIT 402B GENERAL FITNESS FOR THE PROFESSION						
B. Tech. Semester I VIII (Information Technology)						
L	T	P	Credits		Examination	: 100 Marks
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The purpose of this course is to inculcate a sense of professionalism in a student along with personality development in terms of quality such as receiving, responding, temperament, attitude and outlook. The student efforts will be evaluated on the basis of his/ her performance / achievements in different walks of life.

The evaluation will be made by the committee of examiners constituted as under:

1. Dean, Faculty of Engineering & Technology /Principal of affiliated college : Chairperson
2. Chairperson of the department : Member
3. External expert : Appointed by the university

A. The student will present a written report before the committee with following in view:

The student will present before the committee his achievements during the current academic session in the form of a written report highlighting followings:

- I. Academic Performance -----
- II. Extra Curricular Activities/ Community Service, Hostel Activities (12 Marks)
- III Technical Activities/ Industrial, Educational tour (12 Marks)
- IV Sports/games (16Marks)

Note: Report submitted by the students should be typed on both sides of the paper

B. A student will support his/her achievement and verbal & communicative skill through presentation before the examiners. (40 Marks)

C. Faculty Counselor Assignment (20 Marks)

It will be the duty of the student to get evaluated by respective faculty counselor and to submit the counselor assessment marks in a sealed envelope to the committee.

A counselor will assess the student which reflects his/her learning graph including followings:

1. Discipline throughout the year
2. Sincerity towards study
3. How quickly the student assimilates professional value system etc.
4. Moral values & Ethics Syllabus (one lecture/week on the topics of Human values/Ethics is to be delivered)