गुरु घासीदास विश्वविद्यालय
(केन्द्रीय विश्वविद्यालय अधिनियम 2009 क्र. 25 के अंतर्गत स्थापित केन्द्रीय विश्वविद्यालय)
कोनी, बिलासपुर – 495009 (छ.ग.)

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Koni, Bilaspur – 495009 (C.G.)

List of Courses Focus on Employability/ Entrepreneurship/ Skill Development

Department	: *Electronics and Communication Engineering*
Programme Name	: *B.Tech.*

Academic Year : 2016-17

List of Courses Focus on Employability/ Entrepreneurship/Skill Development

Sr. No.	Course Code	Name of the Course
01.	ENATHS01	Professional Communication English
02.	CHATBS01	Engineering Chemistry
03.	MEATES01	Engineering Mechanics
04.	CSATES02	Fundamental of Computers
05.	EMATBS02	Engineering Mathematics-I
06.	CHALBS01	Engineering Chemistry Lab
07.	MEALES01	Engineering Mechanics Lab
08.	MEALES03	Engineering Drawing
09.	CHBTHS02	Environmental Studies
10.	MEBTES04	Engineering Thermodynamics
11	EEBTES05	Basic Electrical & Electronics Engineering
12	PHBTBS03	Engineering Physics
13	EMBTHS04	Engineering Mathematics-II
14	EEBLES05	Basic Electrical & Electronics Engineering Lab
15	PHBLBS03	Engineering Physics Lab
16	MEBLES06	Workshop Practices
17	EC3THS03	Engineering Economics
18	EC3TPC01	Signals and Systems
19	EC3TBS01	Engineering Mathematics-III
20	EC3TES01	Network Analysis And Synthesis
21	EC3TES02	Electronic Devices
22	EC3TPC02	Digital Logic Circuits
23	EC3PES02	Electronics Devices Lab
24	EC3PPC02	Digital Logic Circuits Lab
25	EC4TBS02	Numerical Analysis
26	EC4TPC03	Automatic Control Systems

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27	EC4TPC04	Analog Circuits
28	EC4TPC05	Communication System-I
29	EC4TPC06	Electronics Measurements & Instrumentation
30	EC4PPC04	Analog Circuits Lab
31	EC4PPC05	Communication System-I Lab
32	EC4PPC06	Electronic Measurements & Instrumentation Lab
33	ECETh3101	Lic & Its Application
34	ECETh3102	Electromagnetic Field Theory
35	ECETh3103	Microprocessor & Its Application
36	ECETh3104	Automatic Control System
37	ECETh3104	Communication System- II
38	ECEPr3101	Lic & Its Application Lab
39	ECEPr3102	Microprocessor & Its Application Lab
40	ECEPr3103	Communication System Lab
41	ECETh3201	Digital Signal Processing
42	ECETh3202	Data Communication
43	ECETh3203	Digital Hardware Design
44	ECETh3204	Antenna & Wave Propagation
45	ECETh3205	VLSI Fabrication Technology
46	ECEPr3201	Digital Signal Processing Lab
47	ECEPr3202	Advance Communication Lab
48	ECEPr3203	Digital Hardware Design Lab
49	ECETh4101	Wireless and Mobile Communication
50	ECETh4102	VLSI Design & VHDL
51	ECETh4103	Power Electronics
52	ECETh4104	Microwave Engineering
53	ECETh4105	Embedded System
54	ECETh4106	Multirate Systems and Filter Banks
55	ECETh4107	Speech Signal Processing
56	ECETh4108	Wireless Sensor Network
57	ECETh4109	Artificial Intelligence & Expert Systems
58	ECETh4110	Neural Network & Fuzzy Logic System
59	ECETh4111	Biomedical Instrumentation
60	ECETh4112	Semiconductor Devices Modeling & Simulation
61	ECEPr4101	Project-I

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62	ECEPr4102	Seminar
63	ECEPr4103	VLSI Design & VHDL Lab
64	ECEPr4104	Microwave Engineering Lab
65	ECETh4201	Radar & Satellite Communication
66	ECETh4202	Principle of Management
67	ECETh4203	Optical Fiber Communication
68	ECETh4204	Digital Image Processing
69	ECETh4205	Cryptography & Network Security
70	ECETh4206	Radar Engineering
71	ECETh4207	Mobile Computing
72	ECETh4208	Nano Technology
73	ECETh4209	Vacuum Technology
74	ECETh4210	Optimization Techniques
75	ECETh4211	Stochastic Process
76	ECEPr4201	Project-II
77	ECEPr4202	Comprehensive Viva-voce
78	ECEPr4203	Circuit Simulation Lab
79	ECEPr4204	Optical Fiber Communication Lab
80	IT7100	Research Methodology in engineering
81	ECE7102	Vaccume Technology
82	ECE7103	Finite Element Method
83	ECE7104	Sensors Measurement Science & Technology
84	ECE7105	Artificial Intelligence

विभगाध्यक्ष (इले. एव संचार आभेयाँत्रिकी)
H.O.D. (Elect. & Comm. Engineering)
प्रोद्योगिकी संस्थान
Institute of Technology
गु. घा. वि., बिलासपुर (छ.ग.)
G. G. V. Bilaspur (C.G.)

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Scheme and Syllabus

SCHEME OF EXAMINATION B.Tech – I Year (1st Sem.), Common to All Branches, Course – A, w.e.f. Session: 2015-2016

S. N o	Subject Code	Subjects	Periods /Week			Evaluation Scheme					E.S.E	Grand Total	Credits
						Internal Assessment							
		Theory	L^1	T^2	P^3	$C.T.^5$	$M.S.E^4$	TA^7	$L.A.^6$	Total			
1	ENATHS01	Professional Communication in English	3	0	0	10	20	10	-	40	60	100	3
2	CHATBS01	Engineering Chemistry	3	0	0	10	20	10	-	40	60	100	3
3	MEATES01	Engineering Mechanics	3	1	0	10	20	10	-	40	60	100	4
4	CSATES02	Fundamentals of Computers	3	1	0	10	20	10	-	40	60	100	4
5	EMATBS02	Engineering Mathematics - I	3	0	0	10	20	10	-	40	60	100	3
		Practical											
1	CHALBS01	Engineering Chemistry Lab	-	-	3		-			30	30	20	50	2
2	MEALES01	Engineering Mechanics Lab	-	-	3		-			30	30	20	50	2
3	MEALES03	Engineering Drawing	-	-	3		-			30	30	20	50	2
											Total Credits		23

SCHEME OF EXAMINATION B.Tech – I Year (2nd Sem.), Common to All Branches, Course – B, w.e.f. Session: 2015- 2016

S. No	Subject Code	Subjects	Periods /Week			Evaluation Scheme					E.S.E	Grand Total	Credits
						Internal Assessment							
		Theory	L^1	T^2	P^3	$C.T.^5$	$M.S.E^4$	$T.A.^7$	$L.A.^6$	Total			
1	CHBTHS02	Environmental Studies	3	0	0	10	20	10	-	40	60	100	3
2	MEBTES04	Engineering Thermodynamics	3	1	0	10	20	10	-	40	60	100	4
3	EEBTES05	Basic Electrical & Electronics Engineering	3	1	0	10	20	10	-	40	60	100	4
4	PHBTBS03	Engineering Physics	3	0	0	10	20	10	-	40	60	100	3
5	EMBTBS04	Engineering Mathematics – II	3	0	0	10	20	10	-	40	60	100	3
		Practical											
1	EEBLES05	Basic Electrical & Electronics Engg. Lab	0	0	3		-			30	30	20	50	2
2	PHBLBS03	Engineering Physics Lab	0	0	3		-			30	30	20	50	2
3	MEBLES06	Workshop Practice	0	0	3		-			30	30	20	50	2
											Total Credits		23

[1]-Lecture Hours, [2]-Tutorial Hours, [3]- Practical Hours, [4]- Mid Sem. Exam, [5]-Class Tests/Assignments, [6]-Lab Work Assessment, * - Mandatory course

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INSTITUTE OF TECHNOLOGY
GURU GHASIDAS CENTRAL UNIVERSITY BILASPUR
SCHEME OF B.Tech.IIIrd SEMESTER (CBCS)
ELECTRONICS & COMMUNICATION ENGINEERING

IIIrd SEMESTER

S. No.	Subject Code	Subject	Periods			Evaluation Scheme			Credit
			L	T	P	IA	ESE	Sub Total	
1	EC3THS03	Engineering Economics	3	0	0	40	60	100	3
2	EC3TPC01	Signals & Systems	3	1	0	40	60	100	4
3	EC3TBS01	Engineering Mathematics – III	3	1	0	40	60	100	4
4	EC3TES01	Network Analysis And Synthesis	3	1	0	40	60	100	4
5	EC3TES02	Electronic Devices	3	1	0	40	60	100	4
6	EC3TPC02	Digital Logic Circuits	3	1	0	40	60	100	4
7	EC3PES02	Electronic Devices Lab	-	-	3	30	20	50	2
8	EC3PPC02	Digital Logic Circuits Lab	-	-	3	30	20	50	2
			18	5	6	300	400	700	27

L: Lecture,   T: Tutorial,   P: Practical,   IA: Internal Assessment,   MSE: Mid Semester Exam, ESE: End Semester Exam

गुरु घासीदास विश्वविद्यालय
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INSTITUTE OF TECHNOLOGY
GURU GHASIDAS CENTRAL UNIVERSITY BILASPUR
SCHEME OF B.Tech. IV SEMESTER (CBCS)
ELECTRONICS & COMMUNICATION ENGINEERING

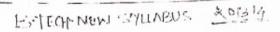| S. No :	Subject Code	Subject	Periods			Evaluation Scheme			Credit
			L	T	P	IA	ESE	Sub Total	
1.	EC4TBS02	Numerical Analysis	3	1	0	40	60	100	4
2.	EC4TPC03	Automatic Control Systems	3	1	0	40	60	100	4
3.	EC4TPC04	Analog Circuits	3	1	0	40	60	100	4
4.	EC4TPC05	Communication System-I	3	1	0	40	60	100	4
5.	EC4TPC06	Electronic Measurements & Instrumentation	3	0	0	40	60	100	3
6.	EC4PPC04	Analog Circuits Lab	0	0	3	30	20	50	2
7.	EC4PPC05	Communication System-I Lab	0	0	3	30	20	50	2
8.	EC4PPC06	Electronic Measurements & Instrumentation Lab	0	0	3	30	20	50	2
			15	5	9	290	360	650	25

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BTECH NEW SYLLABUS 2613 14

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GURU GHASIDAS CENTRAL UNIVERSITY BILASPUR
SCHEME OF B.Tech. IIIrd SEMESTER
ELECTRONICS & COMMUNICATION ENGINEERING

Vth SEMESTER

S. No:	Sub Code	Subject	Periods			Evaluation Scheme			Credit
			L	T	P	IA	ESE	Sub Total	
1.	ECETh 3101	LIC & its Application	3	1		40	60	100	4
2.	ECETh 3102	Electromagnetic Field Theory	3	1		40	60	100	4
3.	ECETh 3103	Microprocessor & Its Applications	3	1		40	60	100	4
4.	ECETh 3104	Automatic Control System	3	1		40	60	100	4
5.	ECETh 3105	Communication System – II	3	1		40	60	100	4
6.	ECEPr 3101	LIC & its Application Lab			3	30	20	50	2
7.	ECEPr 3102	Microprocessors & & Its Applications Lab			3	30	20	50	2
8.	ECEPr 3103	Communication System Lab			3	30	20	50	2
			15	5	9	290	360	650	26

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BTEUT NEW SYLLABUS   2015-16

INSTITUTE OF TECHNOLOGY
GURU GHASIDAS CENTRAL UNIVERSITY BILASPUR
SCHEME OF B.Tech. III SEMESTER
ELECTRONICS & COMMUNICATION ENGINEERING

VIth SEMESTER

S. No.	Sub Code	Subject	Periods			Evaluation Scheme			Credit
			L	T	P	IA	ESE	Sub Total	
1.	ECETh 3201	Digital Signal Processing	3	1		40	60	100	4
2.	ECETh 3202	Data Communication	3	1		40	60	100	4
3.	ECETh 3203	Digital Hardware Design	3	1		40	60	100	4
4.	ECETh 3204	Antenna & Wave Propagation	3	1		40	60	100	4
5.	ECETh 3205	VLSI Fabrication Technology	3	1		40	60	100	4
6.	ECEPr 3201	Digital Signal Processing Lab			3	30	20	50	2
7.	ECEPr 3202	Advanced Communication Lab			3	30	20	50	2
8.	ECEPr 3203	Digital Hardware Design Lab			3	30	20	50	2
9.		Industrial Training*	15	5	9	290	360	650	26

*To be done after 6th semester and would be evaluated in 7th semester.

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E-TECH NEW SYLLABUS 2014

INSTITUTE OF TECHNOLOGY
GURU GHASIDAS CENTRAL UNIVERSITY BILASPUR
SCHEME OF B.Tech VII SEMESTER
ELECTRONICS & COMMUNICATION ENGINEERING

VII SEMESTER

S. No.	Sub Code	Subject	Periods			Evaluation Scheme			Credit
			L	T	P	IA	ESE	Sub Total	
1.	ECETh 4101	Wireless & Mobile Communication	3	1		40	60	100	4
2.	ECETh 4102	VLSI Design & VHDL	3	1		40	60	100	4
3.	ECETh 4103	Power Electronics	3	1		40	60	100	4
4.	ECETh 4104	Microwave Engineering	3	1		40	60	100	4
5.	ECETh 410-	Elective – I	3	1		40	60	100	4
6.	ECEPr 4101	Project-1			3	30	20	50	2
7.	ECEPr 4102	Seminar			3	30	20	50	2
8.	ECEPr 4103	VLSI Design & VHDL Lab			3	30	20	50	2
9.	ECEPr 4104	Microwave Engineering Lab			3	30	20	50	2
			15	5	12	320	380	700	2

List of Subjects for Elective – I

S.No.	Code	Name of Subject
1.	ECETh4105	Embedded Systems
2.	ECETh4106	Multirate Systems And Filter Banks
3.	ECETh4107	Speech signal Processing
4.	ECETh4108	Wireless Sensor Network
5.	ECETh4109	Artificial intelligence & Expert Systems
6.	ECETh4110	Neural Network & Fuzzy Logic System
7.	ECETh4111	Biomedical Instrumentation
8.	ECETh4112	Semiconductor Device Modeling and Simulation

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BTECH NEW SYLLABUS 9.12.21

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GURU GHASIDAS CENTRAL UNIVERSITY BILASPUR
SCHEME OF B.Tech. III rd SEMESTER
ELECTRONICS & COMMUNICATION ENGINEERING

VIII th SEMESTER

S. No.	Sub Code	Subject	Periods			Evaluation Scheme			Credit
			L	T	P	IA	ESE	Sub Total	
1.	ECETh 4201	Satellite & Radar Communication	3	1		40	60	100	4
2.	ECETh 4202	Principle of Management	3	1		40	60	100	4
3.	ECETh 4203	Optical Fiber Communication	3	1		40	60	100	4
4.	ECETh 4204	Elective – II	3	1		40	60	100	4
5.	ECEPr 4201	Project-2			6	30	20	50	2
6.	ECEPr 4202	Comprehensive Viva-voce					50	50	2
7.	ECEPr 4203	Circuit Simulation Lab			3	30	20	50	2
8.	ECEPr 4204	Optical Fiber Communication Lab			3	30	20	50	2
			12	4	12	250	350	600	24

List of Subjects for Elective – II:

S.No.	Code	Name of Subject
1.	ECETh4204	Digital Image Processing
2.	ECETh4205	Cryptography & Network Security
3.	ECETh4206	Radar Engineering
4.	ECETh4207	Mobile Computing
5.	ECETh4208	NanoTechnology
6.	ECETh4209	Vacuum Technology
7	ECETh4210	Optimization Techniques
8.	ECETh4211	Stochastic Process

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING, INSTITUTE OF TECHNOLOGY, GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

EVALUATION SCHEME OF Pre-Ph.D. COURSE WORK

EFFECTIVE FROM SESSION 2012-13

S.N.	Name of the subject	Subject code	Periods / Week L- T- P	ESE Duration	ESE MARKS Max.	ESE MARKS Min.	Credits
1	Research Methodology in Engineering	IT7100	3-1-0	3 Hrs.	100	50	4
2	Elective –I		3-1-0	3 Hrs.	100	50	4
3	Elective –II		3-1-0	3 Hrs.	100	50	4
4	Seminar	IT7101	-	--	100	50	2
	Total		9-3-0	-	400	200*	14

SN	LIST OF ELECTIVES Name of the subject	** Subject code	Duration of the semester will be 6 months.
1	Vacuum Technology	ECE7102	• Candidate has to score minimum 60% of the aggregate marks to qualify in ESE .
2	Finite Element Method	ECE7103	
3	Sensors & Measurement Science and Technology	ECE7104	• Two core subjects as Electives (4 credits each) to be decided by the DRC .
4	Artificial Intelligence	ECE7105	

ESE : End Semester Examination , L: Lecture, T: Theory P: Practical
Max : Maximum marks in ESE ;
Min : Minimum pass marks in each subject as 50%

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SEMESTER-I

Syllabus	SEMESTER-I							
Subject code	ENATHS01	Credit: 3			SESSIONAL - TA			ESE
Subject	PROFESSIONAL COMMUNICATION IN ENGLISH	L	T	P	CT	MSE	TA	Total	
		3	0	0	10	20	10	40	60

UNIT-1: Business Communication: Some key concepts

Meaning and process of communication, Types, channels, Medium of Communication, Barriers of communications, Professional communication; types and principles.

UNIT-2: Business Letters

Elements and layout of a business letter, Application, enquiries, calling quotation, sending quotation, orders complains and adjustment.

UNIT-3: Report writing

Technical reports; essentials, characteristics and structure. Observation report survey report, trouble report, project report.

UNIT-4: Reading comprehension:

Developing comprehension skill through reading of passanges, summarizing, précis writing etc.

UNIT-5: Speaking

The process of speaking. Various phonetory orangs. Introduction to phonetics, classification of pure English sounds. Relation between sound, symbol and alphabet.

Suggested Books and References:

1. D'Souza Evnice and Shahani, G; "Communication Skills in English" Noble Publishing House.

2. Fiske, John, "Introduction to Communication Studies" Rotledge London.

3. Sharma, R.C. and Mohan,, K "Buisness Corres, Pondence and Report Writting", Tata Magraw Hill, New Delhi.

4. Gartside, "Model Business Letter", Pitman London, 1992.

5. Chhabra, Dr. T.N., "Professional Communication, Sun India Publications,New Delhi.

गुरु घासीदास विश्वविद्यालय
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कोनी, बिलासपुर – 495009 (छ.ग.)

Guru Ghasidas Vishwavidyalaya
(A Central University Established by the Central Universities Act 2009 No. 25 of 2009)
Koni, Bilaspur – 495009 (C.G.)

Syllabus		SEMESTER-I							
Subject code	CHATBS01	Credit: 3			SESSIONAL - TA				ESE
Subject	ENGINEERING	L	T	P	CT	MSE	TA	Total	
	CHEMISTRY	3	0	0	10	20	10	40	60

Unit - 1:

Hybridization, Valence Shell Electron Pair Repulsion (VSEPR) theory and its application in predicting shape and geometry of molecules. Molecular Orbital Theory - bond order, magnetic properties and MO diagram of homo-nuclear diatomic molecules and ions.

Unit - 2:

Inductive effect, field effect, hyper-conjugation and resonance. Stability of reaction intermediates - Carbocation, carbanion and Free Radicals. Name reactions – Aldol condensation, Benzoin condensation, Cannizzaro reaction and Perkin reaction.

Unit - 3:

Optical isomerism - definition and example of optical activity, plane of symmetry, enatiomers, diastereomers, meso compound and racemic mixture. R-S nomenclature. Geometrical isomerism - cis-trans isomerism and, E-Z nomenclature. Conformational analysis of ethane and n-butane.

Unit - 4:

Definition of polymers, theimoplastic and thermosetting polymer, addition and condensation polymers, ionic and free radical mechanism of polymerisation. Example of some polymers, viz., Kevlar, Bakelite, Urea-formaldehyde resin and vulcanisation of natural rubber.

Unit - 5:

Electromagnetic radiation, [fV Spectroscopy - Electronic transitions, auxochromes, chromophores, bathochromic and hypsochromic shift, Woocl r,vorcls-Fieser rule for calculating Ln*.. for conjugated dienes and u,B-unsaturated aldehydes and ketones. Note: Problems related to above units shall be asked in examination.

Books recommended:

1. Kalsi, P.S.; "stereochemistry conformation and Mechanism,,, New Age Int. (p), Ltd. New Delhi
2. Puri, B. R.; sharma, L. R. And pathania, M. s. ,,principals of physical Chemistry", Shoban Lal Nagin Chand & Co.
3. Mukherji, S. M. And Singh, S. P., "Reaction Mechanism in Organic Chemistry, Macmillan India Ltd., New Delhi 2007.
4. Alberty R.A. and Silbey R. J., "physical chemistry,', John wiley & Sons, Inc., Singapore, 1996.
5. cotton F.A., wilkinson G. and Gaus p.L., ',Basic Inorganic chemistry,', John Wiley & Sons, Inc., Singapore; 3rd F,d.,1996.
6. Graham-Solomon T.W., "Fundamentals of Organic Chemistry", John Wiley & Sons, Inc., Singapore, 1997. l. odian T.w., "Principles of polymerization", John wiley & Sons, Inc., New york, 1981.
7. Sykes P., "A Guidebook to Mechanism of Organic Chemistry", Longman Inc., New York, 1981.
8. Dye J'R. r, "Application of absorption Spectroscopy of Organic Compounds", Prentice Hall of India,1965.
9. Williams D.H. and Fleming I., "Spectroscopic Methods in Organic Chemistry", Tata McGraw Hill Edition, New Delhi, 4th Ed., 19gg.
10. Atkins P.w., "Physical Chemistry", oxford Univ. press, 4th Ed., 1990.
11. Morrison R.T. and Boyd R.N., "Organic Chemistry", Prentice Hall of India, 6th Ed,lgg2.
12. Rao C.N.R. and Agarwala U. C., "Experiments in General Chemistry", East-West Press, New Delhi, 1969.

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Syllabus		SEMESTER-I							
Subject code	MEATES01	Credit: 4			SESSIONAL - TA				ESE
Subject	ENGINEERING	L	T	P	CT	MSE	TA	Total	
	MECHANICS	3	1	0	10	20	10	40	60

UNIT-1: Force, classification of force, laws of the forces, equilibrium, moment, varignon's theorem, parallel force, couple, General case of equilibrium and their problems.

UNIT-2: Trusses – Analysis by methods of joints and methods of sections. Frames – Analysis of frames, difference between truss & frames.

UNIT-3: Friction, law of friction, General problems on friction, wedge friction, Belt friction, Ratio of tension of belt, power transmitted by a belt, Condition of maximum power transmission by belt. Screw friction – Expression for maximum efficiency of a screw jack, and its problems. Simple lifting machine – Velocity Ratio, Mechanical Advantage, Efficiency, reversibility of a machine, wheel and axle, pulley system & its types, single purchase & double purchase winch crab.

UNIT- 4: Centroid and centre of gravity, Methods & procedure of finding C.G by method of moments and method of integration for various geometrical areas. Moment of Inertia – various theorems on M.I, Radius of gyration, polar M.I, Centroidal axis, Area moment of inertia, product of Inertia & their problems, Introduction of mass moment of inertia.

UNIT-5: Dynamics of body, D'Alembert's principle, rectilinear motion, work and energy, impulse & momentum and principles of conservation of momentum, collision of elastic bodies.

Recommend Text Books

1. Engineering Mechanics – Beer Johnson, TNH publisher

2. Engineering Mechanics – K.L. Kumar, TMH publisher.

3. Engineering Mechanics - Mokashi, TMH, Publisher

4. Engineering Mechanics – Timoshenko & Young, East West publisher

5. Engineering Mechanics - Irvin Shames, PHI publisher

6. Engineering Mechanics – A.K. Tayal. Umesh publication

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Syllabus	SEMESTER-I							
Subject code	CSATES02	Credit: 4			SESSIONAL - TA			ESE
Subject	FUNDAMENTALS	L	T	P	CT	MSE	TA	Total	
	OF COMPUTER	3	1	0	10	20	10	40	60

Unit- 1: Number Systems

Introduction Decimal Number System, Binary Number System, Conversion of Binary Number to Decimal Number , Conversion of Decimal Number to Binary Number System, Addition of Binary Numbers, Binary Subtraction, Use of Complements to Represents Negative Numbers, Conversion of Binary Fraction to Decimal Fraction, Conversion of Decimal Fraction to Binary Fraction System, Octal Number System, Hexadecimal Number System, Binary Coded Decimal (BCD Codes) EBCDIC Code, Gray Codes.

Unit- 2: Central Processing Unit (CPU) & Memory

Introduction, CPU Organization, Addressing Modes. Interrupts & Exceptions, Organization of Intel-8085 Microprocessor. Memory: Primary Memory, Secondary Memory, Cache Memory, Virtual Memory, Registers.

Unit -3: Introduction to Programing Language

Introduction to Programming Language: Low Level Programming Language, High Level Language, Fourth Generation Language, Introduction to Software, Application Software and System Software, Compiler, Interpreter, Assembler, Device Driver.

Unit -4: Operating Systems

Definition, Functions and Objective, Evolution of Operating System, Batch Processing, SPOOLING, Multiprogramming, Multiprocessing, Time Sharing, Real Time Processing.

Unit -5: Algorithm and Flowchart

Introduction to Algorithm and Characteristics, Introduction to Flow Chart: Symbols, Rules of Drawing Flow Chart, Advantage and Limitation of Flow Chart, Decision Tables.

Reference Books:

1. Computer fundamentals by P.K.Sinha

2. Computer fundamentals by B.Ram

3. Fundamentals of Computers by V.Rajaraman

4. Fundamental of computers & Programming with c by A.K.Sharma

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Syllabus	SEMESTER-I							
Subject code	EMATBS02	Credit: 3		SESSIONAL - TA				ESE
Subject	ENGINEERING	L	T	P	CT	MSE	TA	Total	
	MATHS-I	3	0	0	10	20	10	40	60

UNIT-1: Differential Calculus: Successive Differentiation Leibnitz Theorem, Roll's Theorem, Lagrange's Mean value Theorem, Expansion of functions by Maclaurian and Taylor's series. Tangents and Normal's, Maxima and minima of one variable.

UNIT-2: Indeterminate forms, Asymptotes, Radius of curvature, Partial differentiation, Total differentiation.

UNIT-3: Integral Calculus: Reduction formulae, Curve Tracing, Length, Area, Surface volume, Theorem of Pappas or Guldin. Gamma function, Beta function.

UNIT-4: Differential Equations: Differential Equations of first order and its applications, Linear equation of second order, Simultaneous differential equation.

UNIT-5: Partial differential equation of first order, linear homogenous partial differential equation, Application of partial differential equation.

Books Recommended:

1-Diffrential Calculus by Gorakh Prasad.

2-Integral Calculus by Gorakh Prasad.

3-Diffrential Equation by P.N. Chattrjee.

4-Engineering Mathematics by Bali & Iyangar.

5- Engineering Mathematics by H.K. Das.

6-Higher Engineering Mathematics by B.S. Grewal.

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Syllabus		SEMESTER-I					
Subject code	MEALES03	Credit: 2			SESSIONAL - TA		ESE
Subject	ENGINEERING CHEMISTRY LAB	L	T	P	IA	Total	
		0	0	3	30	30	20

List of Experiments:

Group - A:

1. Standardization of sodium thiosulphate solution by standard potassium dichromate solution.

2. To determine the Normality and Strength (g/L) of given Ferrous Ammonium Sulphate solution 'A' using standard Ferrous Ammonium Sulphate (N/30) solution 'B' taking KMnO4 solution as an intermediate.

3. To determine the concentration of hypo solution $(Na_2S_2O_3.5H_2O)$ iodometrically with given Iodine (N/50) solution.

4. Find out the Temporary hardness of given water sample using 0.01M EDTA solution, buffer solution (pH-10) and EBT as an indicator.

5. To determine chloride ion in a given water sample by Argentometric method (Mohr's method)

Group - B:

6. Preparation of Urea Formaldehyde resin.

7. Acetylation of Primary Amine: Preparation of Acetanilide.

8. Base catalyzed Aldol condensation: Synthesis of Dibenzalpropanone.

9. {4+21 Cycloaddition Reaction: Diels-Alder reaction.

10. Preparation of Asprin dnd calculate its yield.

Group - C:

11. To calculate the λ_{max} of a given compound using UV-visible spectrophotometer.

12. To separate the metallic ions by paper chromatography.

13. To determine the surface tension of a liquid by stalagmometer.

14. To determine the percentage composition of the given mixture consisting of two liquids A and B (non-interacting system) by viscosity method.

15. To determine the relative viscosity of given liquids by ostwald's viscometer

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Syllabus		SEMESTER-I					
Subject code	MEALES03	Credit: 2			SESSIONAL - TA		ESE
Subject	ENGINEERING MECHANICS LAB	L	T	P	IA	Total	
		0	0	3	30	30	20

1. Verification of Law of Parallelogram of force.
2. Verification of law of triangle of forces.
3. Verification of law of polygon of forces.
4. Verification of law of moment.
5. Practical verification of forces in the member of nib crane.
6. Practical verification of forces in the member of roof truss.
7. Determination of coefficient of friction between two given surface.
8. Determination of coefficient of wheel and axle.
9. Determination of coefficient of single purchase winch crab.
10. Determination of coefficient of double purchase winch crab.
11. Determination of coefficient of simple screw jack.

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Syllabus	SEMESTER-I					
Subject code	MEALES03	Credit: 2		SESSIONAL - TA		ESE
Subject	ENGINEERING DRAWING	L	T	P	IA	Total
		0	0	3	30	30	20

UNIT- 1: CONVENTIONAL LINES, DRAWING SHEETS – THEIR LAYOUT &PLANNING:

Technical lettering – Introduction, single stroke letters, capital and lower letters Scales – Introduction, Representative fraction, construction of scales, Types- plain & diagonal scale. Cycloid curve- Cycloid, Epicycloids & Hypocycloid, and Involutes to a plain curve. Spiral curve – Archimedean spiral and logarithmic spiral.

UNIT-2: Projection of points: Concept of quadrant system, first angle and third angle projection, projection of point in all quadrants. General procedure to draw projection of points on HP & VP. Projection of lines – Different situation of lines in spaces.

UNIT- 3: Theory of orthographic projection & projection of planes.

UNIT –4: Projection of solids & section of solids

UNIT – 5: Development of Surfaces & Isometric Projection

Recommended Text Book

1. Fundamental of Engineering Drawing – Luzzadar & Dulf, PHI

2. Engineering Drawing – N.D. Bhatt, Charottar Publishing House

3. Engineering Drawing – Arshad Siddiquee, Zahid Khan & Ahmed, PHI

4. Engineering Drawing – P.S. Gill, S.K. Kataria & Sons publishers.

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SEMESTER-II

Syllabus	SEMESTER-II							
Subject code	MEBTES04	Credit: 3			SESSIONAL - TA			ESE
Subject	ENVIRONMENTAL	L	T	P	CT	MSE	TA	Total	
	STUDIES	3	0	0	10	20	10	40	60

UNIT-1: Environment and ecology: Segments of environment. Concept, structure and function of an ecosystem. Producers, consumers and decomposers. Energy flow in the ecosystem, food chains, food webs and ecological pyramids. Types, characteristic features, structure and function of terrestrial and aquatic ecosystem.

UNIT-2: Environmental Pollution: Definition, cause, effects and control measures of Air pollution, Water pollution and Land pollution. Smog (Oxidizing & Reducing), Acid rain, Greenhouse effect, Ozone depletion, BOD, COD, Eutrophication, and Solid waste management.

UNIT-3: Green Chemistry: Introduction, Principles of green chemistry, Introduction to green solvents and green catalysis: Water, Ionic liquid, CO_2, bio-catalysis.

UNIT-4: Green technologies: Photochemistry, Sonochemistry, and Microwave assisted reactions.

UNIT-5: Renewable energy resources: Solar, Wind, Hydro, Geothermal, Ocean, Fuel cells.

Books

1. G. M. Matlers, Introduction to Environmental Engg. & Sciences, Prentice Hall of India Pvt. Ltd.

2. B. J. Novel, Environmental Sciences, Printice Hall Inc.

3. A.K. De, Environmental Chemistry, New Age International (P) Ltd., 5th Ed.

4. Thomas G. Spiro, William M. Stigliani, Chemistry of the Environment, 2nd Edition Prentice Hall of India pvt. Ltd.

5. S. V. S Rana, Essential of Ecology and Environmental Sciences, 4th Edition, PHI, Learning Pvt. Ltd.

6. S.S Dara, Environmental chemistry and Pollution Control, S. Chand & Company Ltd.

7. V. K. Ahluwalia, Green Chemistry: Environmentally Benign Reactions, Ane Books India, New Delhi, 2006.

8. M. M. Srivastava, R. Sanghi, Chemistry for Green Environment, Narosa, New Delhi, 2005

9. D. P. Kothari, Rakesh Ranjan, and K. C. Saigal, Renewable Energy Sources and Emerging Technologies, Prentice Hall of India Pvt. Ltd.

10. M.C. Das & P.C. Mishra, Man & Environment, McMillan India Ltd.