Course Structure for B.Tech (Computer Science & Engineering) Regular Programme
Applicable for students admitted from 2016-17 Academic Year

B.Tech 1st Semester – Computer Science & Engineering

S.No	Code	Course	L	T	P	Drg	C
1	16HS1101	Professional English-I	3	0	0	0	3
2	16HS1102	Calculus and Differential Equations	3	1	0	0	3
3	16HS1103	Applied Physics	3	1	0	0	3
4	16HS1105	Environmental Studies	3	0	0	0	3
5	16EE1101	Basic Electrical and Electronics Engineering	3	1	0	0	3
6	16HS2106	Professional English Lab	0	0	3	0	2
7	16HS2107	Applied Physics Lab	0	0	3	0	2
8	16ME2104	Engineering Workshop and IT Workshop	0	0	3	0	2
		TOTAL	**15**	**3**	**9**	**0**	**21**

B.Tech 2nd Semester – Computer Science & Engineering

S.No	Code	Course	L	T	P	Drg	C
1	16HS1201	Professional English-II	3	0	0	0	3
2	16HS1202	Integral Transforms	3	1	0	0	3
3	16HS1104	Applied Chemistry	3	1	0	0	3
4	16CS1101	Computer Programming	3	0	0	0	3
5	16ME1102	Basic Mechanical and Civil Engineering	3	1	0	0	3
6	16HS2108	Applied Chemistry Lab	0	0	3	0	2
7	16CS2102	Computer Programming Lab	0	0	3	0	2
8	16ME2103	Engineering Drawing Practice	0	0	0	3	2
		TOTAL	**15**	**3**	**6**	**3**	**21**

B.Tech 3rd Semester – Computer Science & Engineering

S.No	Code	Course	L	T	P	Oth	C
1	16HS1302	Probability and Statistics	3	1	0	0	3
2	16EC1301	Electronic Devices and Circuits	3	1	0	0	3
3	16CS1301	Data Structures	3	1	0	0	3
4	16CS1302	Programming through C++	3	0	0	0	3
5	16CS1303	Digital Logic Design	3	0	0	0	3
6	16CS1304	Mathematical Foundations of Computer Science	3	0	0	0	3
7	16EC2305	Electronic Devices and Circuits Lab	0	0	3	0	2
8	16CS2306	Data Structures Lab	0	0	3	0	2
9	16CS2307	Programming through C++ Lab	0	0	3	0	2
10	16AS3301	Communication Skills Practice	0	0	0	3	1
11	16AS3302	Professional Society Activities-I	0	0	0	3	1
12		Audit Course					
		TOTAL	**18**	**3**	**9**	**6**	**26**

B.Tech 4th Semester – Computer Science & Engineering

S.No	Code	Course	L	T	P	Oth	C
1	16CS1401	Database Management Systems	3	1	0	0	3
2	16CS1402	OOPs through JAVA	3	1	0	0	3
3	16CS1403	Operating Systems	3	1	0	0	3
4	16CS1404	Computer Organization	3	0	0	0	3
5	16CS1405	Software Engineering	3	0	0	0	3
6	16CS1406	Formal Languages and Automata Theory	3	0	0	0	3
7	16CS2408	Database Management Systems Lab	0	0	3	0	2
8	16CS2409	OOPs through JAVA Lab	0	0	3	0	2
9	16CS2410	Operating Systems Lab	0	0	3	0	2
10	16AS3401	Technical Seminar	0	0	0	3	1
11	16AS3402	Soft Skills Practice	0	0	0	3	1
12	16AS3403	Professional Society Activities-II	0	0	0	3	1
		TOTAL	**18**	**3**	**9**	**9**	**27**

B.Tech 5th Semester – Computer Science & Engineering

S.No	Code	Course	L	T	P	Oth	C
1	16HS1501	Linear Algebra and Numerical Methods	3	1	0	0	3
2	16CS1501	Computer Networks	3	1	0	0	3
3	16CS1502	Advanced JAVA Programming	3	1	0	0	3
4	16CS1503	Compiler Design	3	1	0	0	3
5	16CS1504	Data Warehousing and Data Mining	3	0	0	0	3
6	16CS1505	Design and Analysis of Algorithms	3	0	0	0	3
7	16CS2506	Computer Networks	0	0	3	0	2
8	16CS2507	Advanced JAVA Programming	0	0	3	0	2
9	16CS2508	Compiler Design	0	0	3	0	2
10	16AS3501	Term Paper	0	0	0	3	2
11	16AS3502	Quantitative Aptitude	0	0	0	3	1
12	16AS3503	Professional Activities-III	0	0	0	3	1
		TOTAL	**18**	**4**	**9**	**9**	**28**

B.Tech 6th Semester – Computer Science & Engineering

S.No	Code	Course	L	T	P	Oth	C
1	16MB1411	Engineering Economics and Project Management	3	0	0	0	3
2	16CS1601	Web Technologies	3	1	0	0	3
3	16CS1602	Software Testing	3	1	0	0	3
4	16CS1603	Cryptography and Network Security	3	1	0	0	3
5	16CS1604	Object Oriented Analysis and Design	3	0	0	0	3
6	**ELECTIVE-I**						
	16CS1605	Artificial Intelligence	3	1	0	0	3
	16CS1606	Computer Graphics					
	16ME1703	Operations Research					
	16CS1607	Available Selected MOOCs					
7	16CS2608	Web Technologies Lab	0	0	3	0	2
8	16CS2609	Software Testing and Case Tools Lab	0	0	3	0	2
9	16CS2610	Cryptography and Network Security Lab	0	0	3	0	2
10	16CS2611	Mini Project	0	0	0	3	2
11	16AS3601	Technical Aptitude	0	0	0	3	1
12	16AS3602	Professional Society Activities-IV	0	0	0	3	1
		TOTAL	**18**	**4**	**9**	**9**	**28**

B.Tech 7th Semester – Computer Science & Engineering

S.No	Code	Course	L	T	P	Oth	C
1	16CS1701	Cloud Computing	3	1	0	0	3
2	16CS1702	Big Data Analysis	3	1	0	0	3
3	16CS1703	Mobile Application Development	3	1	0	0	3
4	**ELECTIVE-II (OPEN ELECTIVE)**		3	1	0	0	3
5	**ELECTIVE-III**						
	16CS1704	Software Project Management	3	1	0	0	3
	16CS1705	Advanced Computer Architecture					
	16CS1706	Design Patterns					
	16CS1707	Available Selected MOOCs					
6	16CS2710	Cloud Computing Lab	0	0	3	0	2
7	16CS2711	Big Data Analysis Lab	0	0	3	0	2
8	16CS2712	Mobile Application Development Lab	0	0	3	0	2
9	16AS3701	Internship	0	0	0	3	2
10	16AS3702	Professional Society Activities-V	0	0	0	3	1
		TOTAL	**15**	**5**	**9**	**6**	**24**

B.Tech 8th Semester – Computer Science & Engineering

S.No	Code	Course	L	T	P	Oth	C
1	**ELECTIVE-IV**						
	16CS1801	Advanced Computer Networks	3	1	0	0	3
	16CS1802	Soft Computing					
	16CS1803	Grid Computing					
	16CS1804	E-Commerce					
2	**ELECTIVE-V**						
	16CS1805	Model Driven Framework	3	1	0	0	3
	16CS1806	Object Oriented Software Engineering					
	16CS1807	Multimedia and Application Design					
	16CS1808	Available Selected MOOCs					
3	**ELECTIVE-VI**						
	16CS1809	Principles of Programming Languages	3	1	0	0	3
	16CS1810	TCP-IP					
	16CS1811	ICT in Education					
	16CS1812	Network Simulators					
4	16CS2813	Major Project and Comprehensive Viva-Voce	0	0	8	0	12
		TOTAL	**9**	**3**	**8**	**0**	**21**

ELECTIVE-II (OPEN ELECTIVE)

S.No	Code	Course
1	16CE1707	Disaster Management
2	16CE1708	Infrastructure Systems Planning
3	16EE1707	Renewable Energy Sources
4	16EE1708	Energy Auditing
5	16ME1708	Industrial Robotics
6	16ME1709	Nano Material Applications
7	16EC1707	Digital Image Processing (not for ECE)
8	16EC1708	Electronic Product Design and Packaging
9	16EC1709	Bio-Medical Instrumentation
10	16CS1708	Internet of Things
11	16CS1709	Open System Software
12	16MB1302	Entrepreneurship Development

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B.Tech 1st Semester – CSE	L	T	P	Oth	C
	3	0	0	0	3

16HS1101 PROFESSIONAL ENGLISH-I

COURSE OUTCOMES:

At the end of the course students able to

1 Developed functional skills for Professional practice through English.
2 Gained the ability to effectively communicate with members of society in general and engineering community in particular.
3 Inculcated an attitude to upgrade competence of English knowledge and communication.
4 Acquired fundamental and functional knowledge of English language, grammar and communication skills.
5 Identify and analyze productive skills and receptive skills.

UNIT-I

The Road Not Taken by **Robert Frost Communication**: Importance of Communication – Language as a tool of Communication – Communicative Skills (Listening, Speaking, Reading and Writing), vocabulary words, prefixes, suffixes, common errors, Verbal and Non-Verbal communication.

UNIT-II

Fare Well Party for Miss Pushpa T.S. by **Nissim Ezekiel**
Writing: Effective Sentence construction strategies – Grammaticality, removing ambiguity in sentences.

UNIT-III

No Men are Foreign by **James Kirkup Reading**: Reading – Intensive and Extensive, Skimming, Scanning, paragraph writing, unity of theme, coherence, pattern of paragraph development.

UNIT-IV

Exercises on Letter Writing and Technical Report Writing
Remedial Grammar: Tenses**,** Use of Articles and Prepositions, Voice, Reported Speech.

TEXT BOOKS:

1 Text: Vibrant English 2014 Orient Black Swan
2 Meenakshi Raman and Sangeetha Sharma, Technical Communication, Oxford University Press, New Delhi, 2012.

REFERENCE BOOKS:

1 M. Ashraf Rizvi, Effective Technical Communication, Tata McGraw–Hill, Publishing Company Limited, First Edition, 2005.
2 Martin Hewings, Advanced English Grammar: A Self Study Reference and Practice Book for Advanced South Asian Students, Cambridge University press, First South Asian Edition, New Delhi, 1999.

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B.Tech 1st Semester – CSE

L	T	P	Oth	C
3	1	0	0	3

16HS1102 CALCULUS AND DIFFERENTIAL EQUATIONS

COURSE OUTCOMES:

At the end of the course students able to

1. Find the solutions for maxima and minima problems which appear in engineering problems.
2. Understand the concepts of curvature and use them in various engineering disciplines
3. Evaluate areas and volumes using multiple integrals.
4. Gain the knowledge of vector differentiation and solve the problems of various engineering disciplines acquire the knowledge of differential equations.
5. Summarize and utilize them in various Engineering Problems.
6. Form and solve various PDEs.

UNIT-I

Functions of Several variables: Functions of two or more variables – Partial Derivatives – Total derivative – Jacobians – Taylor's theorem for functions of two variables (without proof) – Maxima and Minima of functions of two variables and Lagrange's method of undetermined multipliers.

UNIT-II

Curvature and Multiple Integrals: Curvature – Radius of Curvature for Cartesian and Polar Curves - Radius of Curvature at the origin - Evaluation of Double Integrals – Change of Order of Integration - Change of Variables - Evaluation of Triple Integrals Areas and Volumes using multiple integrals.

UNIT-III

Vector Calculus: Differentiation of vectors – Gradient – Divergence – Curl – Line Integral - Gauss's Divergence Theorem, Green's theorem in a plane , Stoke's Theorem (without proofs).

UNIT-IV

Differential Equations (0DE & PDE): Differential equations of first order - Exact, linear and Bernoulli equations - Orthogonal trajectories, Newton's cooling, law of growth and decay- Illustrations. Differential equations of second and higher order- with RHS terms e^{ax}, Sin ax / Cos ax, x^n (n is +ve integer), e^{ax} V [V is sin ax or cos ax or polynomial in x], x^n V [V is sin ax/ cos ax] - Variation of parameters - Applications to Oscillatory Electrical Circuits – Formation of PDEs by the elimination of arbitrary constants and arbitrary functions-Method of separation of variables

TEXT BOOKS:

1 Higher Engineering Mathematics - Dr. B.S. Grewal – 42nd Edition - Khanna Publications
2 A Text Book of Engineering Mathematics – I - T.K.V. Iyengar, B. Krishna Gandhi and Others - S. Chand & Company – Revised edition 2013

REFERENCE BOOKS:

1 Advanced Engineering Mathematics – E. Kreyzig – 10th Edition – Wiley Publications.
2 A Text Book of Engineering Mathematics, B.V. Ramana - Tata McGraw Hill Publications.
3 Advanced Engineering Mathematics – RK Jain & SRK Iyengar – Revised edition – Taylor & Fransis - 2002.
4 E.Rukmangadachari & E. Keshava Reddy ,Engineering Mathematics , Volume-I, 2nd Edition-Pearson publishers.
5 Websites: www.wolframalpha.com www.mathforum.org www.math.duke.edu.

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B.Tech 1st Semester – CSE	**L**	**T**	**P**	**Oth**	**C**
	3	1	0	0	3

16HS1103 APPLIED PHYSICS

COURSE OUTCOMES:

At the end of the course students able to

1. Understand the super position effects like Interference, Diffraction and Polarization and to list the types of optical fibers and using optical fibers in modern communication system and medical field.
2. Interpret the different crystal systems, crystal structure determination by X-rays.
3. Summarize the concepts of LASERS, different types of LASERS and its applications.
4. Study Quantum Mechanics and how Quantum Mechanics is carried out in the fields like medicine and industry.
5. Understand the concepts of Superconductivity and to understand properties of Magnetic and Dielectric Materials and its applications.
6. Analyze various types of Nanomaterials, significance of low dimensional materials, useful applications of Nanotechnology in various field like medicine, biological, chemical, industrial and many important areas in science and technology.

UNIT-I

OPTICS

Interference: Introduction – Interference in thin film by reflection –Newton's rings.

Diffraction: Introduction - Fraunhoffer diffraction due to single slit, Diffraction grating.

Polarization: Types of polarization-Nicol's prism-production and detection of different polarizations.

UNIT-II

FIBER OPTICS & LASERS

Fiber optics: Construction of optical fiber-Principle of optical fiber- Acceptance angle and acceptance cone - Numerical aperture- Types of optical fibers – Optical fiber communication system and its advantages - Applications of optical fibers.

Lasers*:* Introduction-Characteristics of laser – Spontaneous and stimulated emission of radiation – Population inversion - pumping methods -Ruby laser- He-Ne laser - Applications of lasers.

UNIT-III

PRINCIPLES OF QUANTUM MECHANICS AND SEMICONDUCTORS

Principles of Quantum Mechanics*:* Waves and particles – de-Broglie hypothesis- Matter waves-Heisenberg uncertainty principle - Schrodinger's time independent wave equation – Physical significance of wave function - Particle in one dimensional infinite potential box.

Semiconductors: Introduction-Fermi level in Intrinsic and Extrinsic semiconductors-law of mass action – Drift & diffusion currents - Einstein's equation – Hall Effect.

UNIT-IV

CRYSTALLOGRAPHY, SUPERCONDUCTORS AND NANO MATERIALS

Crystallography and X-Ray Diffraction: Introduction – Space lattice-Basis –Unit cell – Lattice parameters –Bravais lattices – Crystal systems- Expression for lattice constant–Packing fractions of SC, BCC and FCC – Miller indices – Expression for Inter planar spacing in cubic crystals – X-ray diffraction - Bragg's law.

Superconductors*:* Introduction - properties of super conductors - Meissner effect – Type I and Type II superconductors – BCS theory- Applications of superconductors.

Magnetic Materials: Basic Definitions-classification of magnetic materials-hysteresis-soft and hard magnetic materials.

Dielectric Materials: Basic Definitions-Internal Field-Clausius-Mossitti Equation-Dielectric Loss-Applications.

Nano materials: Basic principles of nanomaterials – properties of nanomaterials: Physical, optical, thermal, mechanical and magnetic properties–Applications of nanomaterials.

TEXT BOOKS:

1 K.Thyagarajan, Engineering Physics, I Edition 2013, Tata Macgraw Hill.
2 P.K.Palanisamy, Engineering Physics, II Edition 2010 Scitech Publishers.

REFERENCE BOOKS:

1 A.J. Dekkar , Solid State Physics , Latest edition, 2012. McMillan Publishers.
2 M. Arumugam , Engineering Physics II Edition, 1997 , Anuradha Publications.
3 S. ManiNaidu ,Engineering Physics, I Edition, 2012. Pearson Education.
4 Gaur and Gupta Dhanapati , Engineering Physics, 7th Edition, 1992 Rai Publishers.
5 B S Murthy, P.Shankar, Baldev Raj B BRath, James Murday , I Edition, 2012.
6 Text book of Nanoscience and Nanotechnology, University Press.
7 Solid State Physics-S.O.Pillai.
8 Nanotechnology Principles and Practices-Sulabh k. Kulkarni.

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B.Tech 1st Semester – CSE	**L**	**T**	**P**	**Oth**	**C**
	3	0	0	0	3

16HS1105 ENVIRONMENTAL STUDIES

COURSE OUTCOMES:

At the end of the course students able to

1 Apply their knowledge in biology, chemistry, physics, earth science and economics for better understanding of earth's environment.
2 Understanding the importance of natural resources.
3 Comprehend the environmental problems from multiple perspectives with emphasis on human modern lifestyle and developmental activities.
4 Recognize the inter connectedness of human dependence on the earth's ecosystems.
5 Understanding the value of biodiversity and the conservation of biodiversity.
6 Influence his society in proper utilization of goods and services.
7 Able to apply waste water treatment.
8 Demonstrate knowledge relating to the biological systems involved in the major global environmental problems of the 21st century.

UNIT-I

Introduction to Environmental Studies & Natural Resources

Environment: Definition, scope, need for public awareness.

Natural Resources: Renewable & Non renewable resources.

Forest Resources: Use, Deforestation-Case Studies.

Water Resources: Use, Over-exploitation of surface and ground water, Environmental impacts of Dams, Floods and Droughts.

Food Resources: Changes caused by agriculture, over grazing; Effects of modern agriculture-fertilizer, pesticide problems, water - logging and salinity.

Energy Resources: Renewable & non renewable energy resources, Use of alternate energy sources.

UNIT-II

Ecosystems & Biodiversity

Ecosystems: Definition, Structure of an ecosystem, Functions of ecosystem- Food chains, Food web, Energy flow, Ecological pyramids.

Types of Ecosystems: Forest Ecosystem, Aquatic Ecosystem.

Biodiversity: Definition, levels of biodiversity, Value of biodiversity, Hotspots of biodiversity, India as mega biodiversity nation, Threats to biodiversity- Poaching, Habitat loss, Endangered & endemic species of India, Conservation of biodiversity: In-situ & Ex-situ conservation.

UNIT-III

Environmental Pollution

Pollution: Definition, Causes & Control measures of Air pollution, Water pollution, Soil pollution, noise pollution, Solid waste management - Causes, effects and control measures
Role of an individual in preventing pollution.

UNIT-IV

Social Issues & Environment

From unsustainable to sustainable development, water conservation, rain water harvesting, watershed management, environmental ethics & issues, possible solutions, ozone layer depletion, global warming, consumerism & waste products.
Environment protection acts: Air (Prevention and Control of Pollution) Act – Water (Prevention and Control of Pollution) Act - Wild life Protection Act- Forest Conservation Act, Issues involved in enforcement of environmental legislation, Public awareness.

TEXT BOOKS:

1 Text book of Environmental Studies for Undergraduate Courses by Erach.Bharucha for University Grants Commission, Universities Press.
2 Environmental Studies by R. Rajagopalan, Oxford University Press.
3 Environmental Studies by Benny Joseph, Mc. Graw Hill Publications.

REFERENCE BOOKS:

1 Kaushik A, Kaushik C.P, Perspectives in Environmental Studies, 3rd ed., New International Publishers.
2 Text book of Environmental Sciences and Technology by M.Anji Reddy, BS Publication.
3 Environmental Studies by Anindita Basak-Pearson Education.
4 Comprehensive Environmental Studies by J P Sharma, Laxmi Publications.

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B.Tech 1st Semester – CSE	**L**	**T**	**P**	**Oth**	**C**
	3	1	0	0	3

16EE1101 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE OUTCOMES:

At the end of the course students able to

1. Identify the type of electrical machines for a given application.
2. Know the importance induced emf due to relative motion between conductor and magnetic field.
3. Know the constructional features of induction motor, dc machines and transformers.
4. Study the behaviour of the diodes, transistors and to study how rectifier will gives output through the waveforms.

UNIT-I

Introduction to Electrical Engineering: Electric current, potential and potential difference, electromotive force, electric power, ohm's law, basic circuit components, classification of network elements, Kirchhoff's laws, simple problems.

Network Analysis: Basic definitions, types of elements, types of sources, resistive networks, inductive networks, capacitive networks, and series parallel circuits, star delta and delta star transformation, Superposition, Thevenin's, Norton's, Maximum power transfer theorems and simple problems.

UNIT-II

DC Generator: Principle of operation of dc generator, Types of DC generators, EMF equation of a dc generator, OCC of a DC Generator-simple problems.

DC Motor: Principle of operation of DC motor, Types of DC Motors, back emf, Torque equation, losses & efficiency calculation, Swinburne's test-applications.

UNIT-III

Transformers: Principle of operation, Constructional Details, Ideal Transformer and Practical Transformer, EMF equation, Losses, Transformer tests- OC and SC test, efficiency and regulation calculations-simple problems.

Three phase induction motor: Construction and principle of operation, slip and rotor frequency, simple problems.

UNIT-IV

Semiconductor Devices: Intrinsic semiconductors-Electron-Hole Pair Generation, Conduction in Intrinsic Semiconductors, Extrinsic Semiconductors-N-Type and P-Type Semiconductors, Comparison of N-Type and P-Type Semiconductors. Basics of semiconductors-The p-n Junction – drift and diffusion currents**,** .The p-n Junction diode-forward bias, reverse bias, Volt-Ampere characteristics- diode specifications, applications of diode, Diode as a Switch.

Diode as a Rectifier-Half-wave Rectifier, Full-Wave Rectifier, Full-Wave Bridge Rectifier, Zener diode and SCR.

BJT and FET: Bipolar Junction Transistor (BJT) – Types of Transistors, Operation of NPN and PNP Transistors, Input-Output Characteristics of BJT-CB, CE and CC Configurations, Relation between I_C, I_B and I_E.

TEXT BOOKS:

1 T K Nagasarkar, and M.S. Sukhija, Basic Electrical Engineering, Oxford University Press. 2nd Edition 2007.
2 M.S.Naidu and S. Kamakshiah, Basic Electrical Engineering. TMH.3rd Edition 2009.
3 Basic Electrical and Electronics Engineering, S.K Bhattacharya, Pearson Education, 2012.

REFERENCE BOOKS:

1 D P Kothari and I.J. Nagrath, Theory and solutions of Basic Electrical Engineering. PHI.2010.
2 B.L Theraja & A.K.Theraja, "A Text Book of Electrical Technology", 3rd Revised Edition, S.Chand & Company Ltd., New Delhi, 2005.
3 H Cotton, "Advanced Electrical Technology", AH Wheeler & Co., 1990. Eugene C Lister, "Electric Circuits and Machines", New York, McGraw-Hill, 1975.

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B.Tech 1st Semester – CSE	**L**	**T**	**P**	**Oth**	**C**
	0	0	3	0	2

16HS2106 PROFESSIONAL ENGLISH LAB

COURSE OUTCOMES:

At the end of the course students able to

1 Gained practical knowledge in English Speech Sounds.
2 Developed ability on various language functions to fulfill the purpose of speaking and writing in academic and professional context.
3 Ability to communicate effectively in different formal and informal situations.
4 Demonstrate various language functions.

UNIT-I

Phonetics: Vowels, Diphthongs and Consonants, Received Pronunciation, Transcription.

UNIT-II

Stress (Word Stress & Sentence Stress), Intonation, Listening to various accents, Just A Minute (Prepared & Extempore) & Situational Dialogues.

UNIT-III

Listening to Telephone Conversations and Telephone Etiquette.

UNIT-IV

Effective Group Discussion, Strategies for developing G.D.content, Maintaining direction, effective conclusion, - towards consensus- Audio and video lesions for exposure to and comprehension of spoken English.

REFERENCE BOOKS:

1 Daniel Jones, English Pronouncing Dictionary, Current Edition with CD.
2 R. K. Bansal and J. B. Harrison, Spoken English, Orient Longman 2006 Edn.
3 Krishna Mohan & NP Singh, Speaking English Effectively, (Macmillan).
4 J. Sethi, Kamlesh Sadanand & D.V. Jindal, A Practical Course in English Pronunciation, (with two Audio cassettes), Prentice-Hall of India Pvt. Ltd., New Delhi.
5 Dr Shalini Verma , Body Language- Your Success Mantra , S.Chand & Co, 2008.
6 English Dictionary for Advanced Learners, (with CD) International edn. Macmillan 2009.

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B.Tech 1st Semester – CSE	**L**	**T**	**P**	**Oth**	**C**
	0	0	3	0	2

16HS2107 APPLIED PHYSICS LAB

COURSE OUTCOMES:

At the end of the course students able to

1 Understand principle, concept, working and application of new technology and comparison of results with theoretical calculations.
2 Develop procedures and observational skills as data is taken and gain a fundamental understanding of simple and complex apparatus used in the experiment.
3 Apply physics concepts to the research and development of new or improved technologies.
4 Students will learn how to effectively work in a team environment when solving Engineering Physics related problems.
5 Obtain and analyze scientific data from laboratory or field instruments.

LIST OF EXPERIMENTS

1 Determination of radius of curvature of Plano convex lens- Newton's rings.
2 Dispersive power of the prism-Spectrometer.
3 Determination of wavelength of Spectral line of mercury spectrum using Diffraction grating -Normal Incidence.
4 Determination of wave length of a laser source-Diffraction grating.
5 Determination of particle size by using laser source.
6 Numerical Aperture of an optical fiber.
7 Magnetic field along the axis of a current carrying coil-Stewart and Gee's method.
8 Determination of Energy gap of a material of a p-n junction.
9 Determination of Rigidity modulus of a wire material-Torsional pendulum.
10 Determination of thickness of a thin wire by using parallel fringes.
11 Determination of frequency of an electrically vibrating tuning fork- Melde's method.
12 Determination of Planck's Constant.
13 Determination of Hall Coefficient of semi conductor.

TEXT BOOKS:

1 Manual cum Record for Engineering Physics Lab-1&2, by Prof. Sri M. Rama Rao, Acme Learning.
2 Physics lab Manual-Department of H&S, ASCET (Autonomous).

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B.Tech 1st Semester – CSE	**L**	**T**	**P**	**Oth**	**C**
	0	0	3	0	2

16ME2104 ENGINEERING WORKSHOP AND IT WORKSHOP

ENGINEERING WORKSHOP

COURSE OUTCOMES:

At the end of the course students able to

1 Utilize workshop tools for engineering practice.
2 Analyze and find out suitable method of fabrication of a given simple component.
3 Employ skills acquired to provide quick fixes for routine domestic and/or industrial problems.
4 Appreciate the hard work and intuitive knowledge of the manual workers.

Trades for Exercises

A Carpentry Shop
1 Cross Lap Joint.
2 Mortise and Tenon Joint.

B Fitting Shop
1 Square Fitting.
2 V- Fitting.

C Sheet Metal Shop
1 3-Sided Tray (Trapezoidal Tray).
2 Cylinder (Circular Tin).

D House Wiring
1 Wiring for two lamps (bulbs) with independent switch controls with or without looping.
2 Wiring for stair case lamp.

E Foundry
1 Single Piece Pattern.
2 Double Piece Pattern.

F Welding
1 Lap Joint.
2 T – Joint.

Trades for Demonstration
1 Machine Shop (Lathe Machine, Grinding Machine and Drilling Machine).
2 Metal Cutting.
3 Plumbing.

REFERENCE BOOKS:

1 Engineering Work shop practice, V. Ramesh Babu, VRB Publishers Private Limited, 2009.
2 Work shop Manual, P.Kannaiah and K.L.Narayana, SciTech Publishers, 2009.
3 Workshop Practice Manual, K. Venkata Reddy, BS Publications.

IT WORKSHOP

COURSE OUTCOMES:

At the end of the course students able to

1 Understand the need of PC Hardware, internet & World Wide Web and office suites.
2 Learn how to install different software.
3 Install and use different software like Windows XP, Linux, and MSOffice suite component.
4 Understand the troubleshooting techniques.

LIST OF EXPERIMENTS:

PC Hardware:

Exercise 1: Identify the peripherals of a computer, components in a CPU and its functions. Draw the block diagram of the CPU along with the configuration of each peripheral and submit to your instructor.

Exercise 2: Every student should disassemble and assemble the PC back to working condition. Lab instructors should verify the work and follow it up with a Viva. Also students need to go through the video which shows the process of assembling a PC. A video would be given as part of the course content.

Exercise 3: Every student should individually install MS windows on the personal computer. Lab instructor should verify the installation and follow it up with a Viva.

Exercise 4: Every student should install Linux on the computer. This computer should have windows installed. The system should be configured as dual boot with both windows and Linux. Lab instructors should verify the installation and follow it up with a Viva.

Exercise 5: Hardware Troubleshooting: Students have to be given a PC which does not boot due to improper assembly or defective peripherals. They should identify the problem and fix it to get the computer back to working condition. The work done should be verified by the instructor and followed up with a Viva.

Exercise 6: Software Troubleshooting: Students have to be given a malfunctioning CPU due to system software problems. They should identify the problem and fix it to get the computer back to working condition. The work done should be verified by the instructor and followed up with a Viva.

Internet & World Wide Web:

Exercise 7: Orientation & Connectivity Boot Camp: Students should get connected to their Local Area Network and access the Internet. In the process they configure the TCP/IP setting. Finally students should demonstrate, to the instructor, how to access the websites and email. If there is no internet connectivity preparations need to be made by the instructors to simulate the WWW on the LAN.

Exercise 8: Search Engines & Netiquette: Students should know what search engines are and how to use the search engines. A few topics would be given to the students for which they need to search on Google. This should be demonstrated to the instructors by the student.

MS Word:

Exercise 9&10: The mentor needs to give an overview of Microsoft (MS) word 2007: Accessing, overview of toolbars, saving files, Using help and resources, rulers, format painter in word. Give a task covering to create project certificate. Features to be covered:-Formatting Fonts in word, Drop Cap in word, Applying Text effects, Using Character Spacing, Borders and Colors, Inserting Header and Footer, Inserting table, using Drawing toolbar in word.

MS Excel:

Exercise 11&12: The mentor needs to tell the importance of MS office 2007 Excel as a Spreadsheet tool covering Accessing, overview of toolbars, saving excel files, Using help and resources., Also give a task that is covering the features like Gridlines, Format Cells, Summation, auto fill, Formatting Text.

MS Power Point:

Exercise 13&14: Students will be working on MS power point that helps them create basic power point presentation. Topics covered during this Exercise include :- PPT Orientation, Slide Layouts, Inserting Text, Word Art, Formatting Text, Bullets and Numbering, Auto Shapes, Lines and Arrows in Power point. Students shall be given a model power point presentation which needs to be replicated (exactly how it's asked).

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16HS1201 PROFESSIONAL ENGLISH-II

COURSE OUTCOMES:

At the end of the course students able to

1 Use English language skills at basic level.
2 Recognize the personal enrichment to be gained from a love of English, literature and learning.
3 Acquired ability to interact politely and cooperate with others.
4 Identify and compare different kinds of Resume styles.
5 Design and develop functional skills in Professional contexts.

UNIT-I

Text: The Eyes are Not Here by **Ruskin Bond**

Communication: Short oral presentation, Group Discussion- definition, types, structure, practice, Dynamics of group, clarity in thought and expression, Dos and Don'ts of GD.

UNIT-II

Text: The Open Window by **Saki**

Communication: Resume Writing, format of Cover Letter.

UNIT-III

Text: The Romance of a Busy Broker by **O Henry**

Communication: Interview Skills, Types of Interviews, Pre Interview Techniques, Types of Questions and Answering Strategies.

UNIT-IV

Exercises on Common Errors in English, If- Clauses', One Word Substitutions, Idioms and Phrases, Words often Confused, Pre-fixes and Suffixes.

Text: Vibrant English 2014 Orient Black Swan

REFERENCE BOOKS:

1 Meenakshi Raman and Sangeetha Sharma, **Technical Communication**, Oxford University Press, New Delhi, 2012.
2 M. Ashraf Rizvi, **Effective Technical Communication**, Tata McGraw–Hill, Publishing Company Limited, First Edition, 2005.
3 Practical English Usage by Michael Swan, 3rd Edition, OUP.
4 Intermediate English Grammar by Raymond Murphy, CUP.
5 Study: Reading by Eric H .Glendinning, 2nd Edition CUP.
6 Business Correspondence and Report writing by R.C Sharma, Tata McGraw-Hill.

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16HS1202 INTEGRAL TRANSFORMS

COURSE OUTCOMES:

At the end of the course students able to

1 Gain the concepts of Laplace and inverse Laplace transforms.
2 Solve the ordinary differential equations with initial conditions using Laplace transforms.
3 Expand various algebraic, trigonometric and hyperbolic functions in Fourier series in different intervals.
4 Solve the various boundary value problems using Fourier transforms.
5 Obtain the knowledge of Z and inverse Z - transforms.
6 Compute the solutions of difference equations using Z - transforms.

UNIT-I

Laplace Transforms (LTs)

Laplace transforms of elementary functions – Properties - Transforms of derivatives, integrals –Unit step function-Dirac delta function- Periodic function. Inverse Laplace transforms by Partial fractions – Properties - Convolution theorem – Application of Laplace transforms to ordinary differential equations of first and second order.

UNIT-II

Fourier series (FS)

Euler formulae (without proof) – Expansion of functions as a Fourier series –Change of Interval – Even and odd functions – Half range series – Complex form of Fourier series.

UNIT-III

Fourier Transformations (FTs)

Fourier Integral theorem (without proof) – Fourier transformations – Properties - Sine and Cosine transformations - Inverse Fourier transformations – Convolution – Parseval's Identity.

UNIT-IV

Z - Transformations (ZTs)

Z – transforms of elementary functions – Properties – Shifting theorems – Initial and Final value theorems - Inverse Z – transforms by convolution and partial fractions – Applications to first and second order difference equations.

TEXT BOOKS:

1 Higher Engineering Mathematics – 42nd Edition - Dr. B.S. Grewal - Khanna publications.

REFERENCE BOOKS:

1 Advanced Engineering Mathematics – E. Kreyzig – 10th Edition – Wiley Publications.
2 A Text Book of Engineering Mathematics – I - T.K.V. Iyengar, B. Krishna Gandhi and Others - S. Chand & Company – Revised edition 2013.
3 A Text Book of Engineering Mathematics – II - T.K.V. Iyengar, B. Krishna Gandhi and Others - S. Chand & Company – Revised edition 2013.
4 E.Rukmangadachari & E. Keshava Reddy ,Engineering Mathematics , Volume-I&II, 2nd Edition-Pearson publishers.
5 Advanced Engineering Mathematics – RK Jain & SRK Iyengar – Revised edition – Taylor & Fransis - 2002.
6 Websites: www.wolframalpha.com, www.mathforum.org, www.math.duke.edu.

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16HS1104 APPLIED CHEMISTRY

COURSE OUTCOMES:

At the end of the course students able to

1 Apply the knowledge of working principle of batteries in engineering areas.
2 Apply the corrosion technology methods in various fields.
3 Implement various water purification methods in industries.
4 Describe the boiler troubles and estimations of hardness.
5 Know the application and manufacture of new polymers for industrial demand.
6 Know the knowledge of advanced polymer for different application.
7 Finding the lubricants for engineering applications.
8 Understand the processing of cementing in construction engineering.

UNIT-I

ELECTROCHEMISTRY AND CORROSION SCIENCE

Conductance, Equivalent conductance, Molecular conductance, application of conductance, Conductometric Titration –acid vs. base, Electrochemical cell and its applications. Numerical calculation conductivity and electrochemical cell.

Batteries: Ni-Cad cell, Lithium Cells, Fuel Cells, Hydrogen – Oxygen fuel cell, Methanol Fuel cell. Corrosion-definition, examples, effects- Mechanism of Dry corrosion and wet corrosion. Factor Influencing corrosion, corrosion control methods-sacrificial anode, impressed current, inhibitors, Electroplating(Ni&Cr) and Electro less plating (Cu and Ni).

UNIT-II

WATER TECHNOLOGY-I: Sources and impurities of water, water treatment for drinking purpose-disinfection and concept of break –point chlorination –Desalination of brakish water-Principle and process of electro-dialysis and reverse osmosis.

WATER TECHNOLOGY-II: Boiler troubles –Scales, sludges, caustic embrittlement and boiler corrosion-causes, disadvantages and prevention, internal conditioning methods-phosphate, calgon and sodium aluminate-External treatment methods- ion-exchange methods. Estimation of Hardness, Dissolved oxygen, Alkalinity and chlorides.

UNIT-III

POLYMER TECHNOLOGY: Polymerization-addition, condensation. Thermoplastics and thermosetting, preparation properties and application of Bakelite, Nylon, Teflon. Synthetic rubber, Buna S, Buna N, Poly-urethane, Thiokol rubbers. Conducting polymers-examples classification intrinsically conducting polymers and extrinsically conducting polymer, doping conducting polymers. Liquid Crystals-definition, properties and classification application. Natural rubber, Vulcanization, compounding of rubber. Inorgaic polymer-Silicones.

UNIT-IV

ENGINEERING MATERIALS AND FUEL TECHNOLOGY

Cement-types-Portland cement-composition, setting and hardening of Portland cement.
Lubricants: classification with examples, properties of lubricants –viscosity, flash point, fire point, cloud point, pour point.
Fuel Technology: Introduction, classification, solid fuel-Otto-Hoffmann's process, liquid fuel-Fischer-Tropsch Process. Calorific value, units of calorific value, Determination of calorific value of solid fuel by Bomb calorimeter. Numerical calculation for calculating of calorific values.

TEXT BOOKS:

1 Engineering Chemistry by Jain and Jain, DhanpatRai Publishing Company, New Delhi.
2 A Text book of Engineering Chemistry by S.S.Dara, S. Chand and Company Limited, New Delhi.
3 Engineering Chemistry by K.N. Jayaveera,G.V.Subba Reddy, C. Ramachandraiah, McGraw Hill(Pvt), New Delhi.

REFERENCE BOOKS:

1 A Text book of Engineering Chemistry by Shashi Chawla, DhanpatRai &Co (Pvt) Ltd, New Delhi.
2 Text book of Engineering Chemistry, C.Parameswara Murthy, C.V. Agarwal, Andra Naidu, B.S. Publications, Hyderabad.

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16CS1101 COMPUTER PROGRAMMING

COURSE OUTCOMES:

At the end of the course students able to

1 Ability to design algorithmic solution to problems.
2 Acquire knowledge about the basic concept of writing a program.
3 Understand the role of constants, variables, identifiers, operators, and type conversions of C Language.
4 Ability to design programs Decision making and utilizing repetition.
5 Ability to design modular programs using functions.
6 Concept of Array and pointers dealing with memory management.
7 Structures and unions through which derived data types can be formed.

UNIT-I

Introduction to Computers and Programming:

Definition, Block diagram along with computer components, Characteristics & classification of computers, Types of programming languages.

Problem solving: top-down design, implementation of algorithms, Flow charts.

Introduction to C Language – History of C, features of C , General form of a C Program, character set in C, C-Tokens, Data types, Expression Evaluation, Operators and Expressions, Type Conversions, Formatted Input and Output

UNIT-II

Control Statements and Functions:

Decision Statements: If, if-else, nested if and switch Statements, Loop Control Statements - while, for, do-while Statements, Nested Loops, and Other Related Statements - break, continue, go to.

Functions: Function prototype, definition and accessing, passing arguments to a function, Library Functions, Scope of a function, Storage Classes - Auto, Register, Static, Extern, Scope rules, Type qualifiers, Recursion - Recursive functions, C Preprocessor, header files

UNIT-III

Arrays, Pointers and Strings:

Arrays: introduction, 1-Dimensional, 2-dimensional array, Declaration, Initialization and Accessing, Multidimensional Arrays.

Pointers: Introduction, Features of Pointers, Pointer Declaration, Arithmetic Operations with Pointers, Pointers and Arrays, Array of Pointers, Pointers to Pointers, Void Pointers, Memory Allocation Functions, Pointer to Functions, Command- Line Arguments.

Strings: String Basics, String Handling Functions

UNIT-IV

Structure and Union:

Structure and Union: Introduction, Features of structure, Declaration and Initialization of Structure, Structure within Structure, Array of Structures, Pointer to Structure, self referential Structures, Structures and Functions, type def and Enumerated data types, Unions, Bit fields.

Files: Introduction, Streams and file types, file operations

TEXT BOOKS:

1 Byron S Gottfried, Jitender Kumar Chabra, Programming with C, Third Edition, McGraHill Pvt. Ltd.
2 Jeri R Hanly, Elliot B. Koffman, Ashok Kamthane, A. Ananda Rao, Programming in C and data structures, Pearson Education.

REFERENCE BOOKS:

1 R. G. Dromey, How to Solve it by Computer, Person Education,2008.
2 B.A.Forouzan and R.F. Gilberg, C Programming & Data Structures, Third Edition, Cengage Learning,2000.
3 Stephen G. Kochan,Programming in C –III Edition, Pearson Educataion,2004.
4 J.A. Jones & K. Harrow ,C Programming with problem solving, Dreamtech Press.
5 Harry H. Cheng,C for engineers and scientists an interpretive approach, , McGraHill International Pvt. Ltd.
6 E.Balagurusamy, C Programming & Data Structures, TMH,2009.

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16ME1102 BASIC MECHANICAL AND CIVIL ENGINEERING

COURSE OUTCOMES:

At the end of the course students able to

1 Develop capacity to predict the effect of force and motion in the course of carrying out the design functions of engineering.
2 Apply knowledge of trigonometry, calculus, and algebra to obtain solutions of elementary problems in engineering mechanics.
3 Provide preliminary information useful in design of components in a multi-body system under constraints.
4 Train the students to apply fundamental knowledge of basic science for selection and processing of material for engineering applications.
5 The students will be able to illustrate the fundamental aspects of Civil Engineering.
6 Students will be able to explain the concepts of surveying for making horizontal and vertical measurements.
7 They will able to illustrate the uses of various building materials and explain the method of construction of different components of a building.
8 Students will be able to discuss about various services in a building.

UNIT-I

Basics of Engineering Mechanics:

Basic Concepts of Engineering Mechanics: Characteristics of a force – various types of force systems – Resultant – Composition and resolution of forces –Principles of moments of force – Couples.

Resultants of Force System: Resultants of different types of force systems.

Centroid and Centers of Gravity: Definition – Centroid and centers of gravity simple bodies.

UNIT-II

Moments of Inertia: Definition – Parallel axis theorem for areas – Second moments of areas by integration – Radius of gyration of areas – Moments of inertia of simple areas.

Simple Stresses and Strains: Elasticity and plasticity – Types of stresses & strains – Hooke's law – stress & strain diagram for mild steel – Working stress – Factor of safety – Lateral strain, Poisson's ratio & volumetric strain – Elastic module & the relationship between them.

Composite Materials: Classification of composites, various methods of component manufacture of composites, particle – reinforced materials, fiber reinforced materials, polymer composites.

UNIT-III

General Introduction to Civil Engineering - Various disciplines of Civil engineering,

Relevance of Civil engineering in the overall infrastructural development of the country. Introduction to types of buildings as per NBC; Selection of site for buildings. Components of a residential building and their functions. Introduction to industrial buildings – office / factory / software development office / power house /electronic equipment service centre (any one related to the branch of study).

Note: Students have to visit one such building and submit an assignment about the features of any one of the listed building related to their branch (Not included for exam).

Building materials - Bricks, cement blocks - Properties and specifications. Cement – OPC, properties, grades; other types of cement and its uses (in brief).Cement mortar – constituents, preparation. Concrete – PCC and RCC – grades. Steel - Use of steel in building construction, types and market forms.

UNIT-IV

Surveying - Principles and objectives of surveying; Horizontal measurements – instruments used – tape, types of tapes; Ranging (direct ranging only) – instruments used for ranging. Leveling - Definitions, principles, Instruments (brief discussion only) -Level field book - Reduction of levels - problems on leveling (height of collimation only).Modern surveying instruments – Electronic distance meter, digital level, total station, GPS (Brief discussion only).

TEXT BOOKS:

1 B. Bhattacharya, Engineering Mechanics- Oxford University Publications, 2009.
2 S.S. Bhavikatti, Engineering Mechanics, New Age Internationals, 2nd edition, 2010.
3 S.S.BHAVIKATTI, Basic Civil Engineering, New age international publishers.
4 Rangwala, Essentials of Civil Engineering, Charotar Publishing House.

REFERENCE BOOKS:

1 Material Science and Metallurgy/kodgire.
2 Science of Engineering Materials / Agarwal.
3 A. K. Tayal, "Engineering Mechanics", Umesh Publications, 2005.
4 Ferdinand.L.Singer, Engineering Mechanics (Statics and Dynamics), Harper RowPublishers, 2007.
5 Anurag A. Kandya, Elements of Civil Engineering, Charotar Publishing house.
6 Rangwala S C and Ketki B Dalal, Engineering Materials, Charotar Publishing house.
7 Rangwala S C and Ketki B Dalal, Building Construction, Charotar Publishing house.
8 Michael S Mamlouk and John P Zaniewski, Materials for Civil and Construction Engineering,29 Pearson Publishers.

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16HS2108 APPLIED CHEMISTRY LAB

COURSE OUTCOMES:

At the end of the course students able to

1 Handle different glassware and apparatus and learn the skill in executing volumetric type experimental procedure.
2 Prepare some simple polymers.
3 Know the characteristics of lubricants and be able to modify lubricants according to purpose.
4 Take care of pollution control measures in industry.
5 Learn the desirable limits of various constituents in water analysis and its importance.

LIST OF EXPERIMENTS

1 Estimation of dissolved oxygen in water samples.
2 Preparation of standard EDTA solution and estimation of hardness of water.
3 Corrosion of mild steel in acid and influence of an inhibiter thiourea.
4 Preparation of standard potassium dichromate solution and estimation of ferrous ion.
5 Determination of calorific value of solid fuel by using Bomb Calorimeter.
6 Determination of strength of given strong acid and strong base solution by conductometric titrations.
7 Estimation of chloride ion in water sample by Mohr's method.
8 Determination of viscosity of the oil through redwood viscometer.
9 Determination of alkalinity of water.
10 Preparation of Phenol-Formaldehyde Resin (Bakelite).

TEXT BOOKS:

1 Quantitative Analysis by A.I. Vogel.
2 Engineering Chemistry Lab Manual by K.Gouru Naidu.
3 Laboratory Manual on Engineering Chemistry, S.K.Bhasin and Sudha Rani, 2nd Edition, Dhanpat Rai Publishing Company, New Delhi.

REFERENCE BOOKS:

1 Text Book of Engineering Chemistry by R.N. Goyal and Harrmendra Goel.
2 A Text book on experiments and calculations-Engineering Chemistry. S.S. Dara.

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	0	0	3	0	2

16CS2102 COMPUTER PROGRAMMING LAB

COURSE OUTCOMES:

At the end of the course students able to

1 Understand the basic concept of C Programming, and its different modules that include conditional and looping expressions, Arrays, Strings, Functions, Pointers, Structures and File programming.
2 Role of constants, variables, identifiers, operators, type conversion and other building blocks of C Language.
3 Use of conditional expressions and looping statements to solve problems associated with conditions and repetitions.
4 Structures and unions through which derived data types can be formed.
5 File Handling for permanent storage of data or record.

LIST OF EXPERIMENTS

Exercise-1
Programs on Expressions.
Exercise-2
Programs on decision control statements.
Exercise -3
Programs on loop statements.
Exercise -4
Programs to implement on functions.
Exercise -5
Programs to implement on parameter passing techniques.
Exercise -6
Programs using recursion.
Exercise-7
Programs using arrays.
Exercise -8
Programs to implement string handling functions.
Exercise -9
Programs to implement on pointers.
Exercise -10
Programs to implement on structures.
Exercise -11
Programs on files.
Exercise -12
Programs on command line arguments.

TEXT BOOKS:

1 Byron S Gottfried, Jitender Kumar Chabra, Programming with C, , Third Edition, McGraHill Pvt. Ltd
2 Jeri R Hanly, Elliot B. Koffman, Ashok Kamthane, A. Ananda Rao, Programming in C and data structures, Pearson Education

REFERENCE BOOKS:

1 R. G. Dromey, How to Solve it by Computer, Person Education,2008
2 B.A.Forouzan and R.F. Gilberg, C Programming & Data Structures, Third Edition, Cengage Learning,2000
3 Stephen G. Kochan,Programming in C –III Edition, Pearson Educataion,2004
4 J.A. Jones & K. Harrow ,C Programming with problem solving, Dreamtech Press
5 Harry H. Cheng,C for engineers and scientists an interpretive approach, , McGraHill International Pvt. Ltd
6 E.Balagurusamy, C Programming & Data Structures, TMH,2009

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16ME2103 ENGINEERING DRAWING PRACTICE

COURSE OUTCOMES:

At the end of the course students able to

1. Convey visual perception information regarding relative locations of objects through an orthographic/isometric view
2. Analyze a drawing and bring out any inconsistencies to put forth inferences graphically
3. Create feasible designs of simple objects with drawing tools and/or free-hand
4. Get training in the transformation of the imagined data to present as drawings so that the communication skill will be increased especially in technical subjects
5. Impart the training in multi-view representations and its conversion into pictorial views and the reverse also
6. Ability to understand the different standards in technical drawing and to help in reaching future engineering positions especially in research and design
7. Generate solids and isometric projections in Auto-CAD

UNIT-I

Introduction to Engineering Drawing: Geometrical Constructions-Construction of Polygons.

Conic Sections

Ellipse: Eccentricity method, Oblong method, Parallelogram method, Arc's of Circles method and Concentric Circles method.

Parabola: Eccentricity method, Rectangle method, Tangent method, Parallelogram method.

Hyperbola: Eccentricity method, Rectangular hyperbola, Asymptotes method, two branches of Hyperbola (Arc's of Circles method), Abscissa- Ordinate- method.

Cycloids: General Cycloid, Epi -Cycloid, Hypo-Cycloid.

UNIT-II

Projections of Points, Straight Lines, Planes:

Points: Introduction to Orthographic Projections, Describing of quadrants, First and Third angle projection – Position of points in 4 quadrants.

Straight Lines: Lines parallel to both the principal planes, perpendicular to one plane and parallel to another plane, lines inclined to one plane, lines inclined to both the planes, finding true lengths, true inclinations.

Planes: Projection of regular plane surfaces, planes parallel to one plane, planes inclined to one plane and inclined to both the planes.

UNIT-III

Projection of Solids, Sections and Development of Solids with Auto -CAD

Solids: Positions of regular solids(prism, cylinder, pyramid and cone) – Projection of Solids – Axis perpendicular to one plane and parallel to another plane, inclined to one plane and inclined to both the planes, Axis parallel to both the Principal planes.

Section of Solids: Section Planes and Sectional views of Right Regular Solids–Prism, Cylinder, Pyramid and Cone. True shapes of the sections.

Development of Solids: Development of Surfaces of Right Regular Solids – Prisms, Cylinder, Pyramid, Cone and their Sectional parts.

UNIT-IV

Isometric and Orthographic Projections with AUTO-CAD

Isometric Projections: Principles of Isometric Projection – Isometric Scale – Isometric Views– Conventions – Isometric Views of Lines, Plane Figures, Simple and Compound Solids – Isometric Projection of objects having non- isometric lines.

Orthographic Projections – Conversion of pictorial views into orthographic views.

TEXT BOOKS:

1 N.D. Bhat, Engineering Drawing, Charotar Publishers, 52nd Revised and Enlarged: 2013.
2 K.L. Narayana, P. Kanniah, Engineering Drawing, Publisher, Scitech.

REFERENCE BOOKS:

1 Venugopal, K., A Textbook of Engineering Graphics , New age Publishers,2009.
2 Venkata Reddy, Engineering Drawing, B.S.Publishers ,2009.
3 Basant Agrawal, C M Agrawal ,Engineering Drawing, 2013.
4 V.Ramesh Babu, Engineering Drawing .2009.
5 www.design-technology.info/IndProd/drawingswww.asce.org, nptel.ac.in/courses/112103019.

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16HS1302 PROBABILITY AND STSTISTICS

COURSE OUTCOMES:

At the end of the course students able to

1 Gain the concepts of normal distributions estimation, and sampling distribution.
2 Apply the knowledge of normal and sampling distribution to various practical situations using normal tables.
3 Test the hypothesis of various engineering problems.
4 Investigate the small samples using χ^2-and *t* – tests.
5 Get the concept of F – test.
6 Analyze various industrial applications using Analysis of variance.

UNIT-I

Distributions

Binomial, Poisson and normal distributions – Properties of normal distribution – Areas under normal curve – Population and Sample - Sampling distributions of means (with and without replacement).

UNIT-II

Test of Hypothesis and Large Sample Tests

Statistical Hypothesis – Tests of Significance - Null and Alternative hypotheses –Types of errors - Level of Significance – Critical values and region – One and two tailed tests – Procedure for hypothesis testing - Testing of significance of means and proportions.

UNIT-III

Small samples tests

Degrees of freedom - Chi – square test - χ^2- test for goodness of fit - 2×2 contingency table - Student's *t* – distribution – testing of single mean and difference of means.

UNIT-IV

F – test and ANOVA

F – test - AN0VA - One and Two – way classifications.

TEXT BOOKS:

1 Fundamentals of Statistics – S. C. Gupta –Himalaya Publications (6th revised and enlarged edition).
2 Probability and statistics by Dr.T.K.V.Iyengar - S Chand &Co.-Revised edition.

REFERENCE BOOKS:

1 Miller's and Freund's "Probability and Statistics for Engineers" – Johnson Richard A – 2011 Edition – Prentice Hall of India.
2 Advanced Engineering Mathematics - Erwin Kreyzig – John Wiley & sons Inc. - 10th edition.
3 Higher Engineering Mathematics - Dr. B.S. Grewal - Khanna Publication.(42nd edition).
4 **Websites:** www.wolframalpha.com, www.mathforum.org, www.math.duke.edu.

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16EC1301 ELECTRONIC DEVICES AND CIRCUITS

COURSE OUTCOMES:

At the end of the course students able to

1 Acquire knowledge in the field of solid state materials.
2 Analyze the structure of different types of semiconductor crystal structures.
3 Know the intrinsic property of semiconductor materials.
4 Understand and Analyse the different types of diodes, operation and its characteristics.
5 Design biasing circuits using diodes and transistors.
6 Analyze and design diode application circuits.
7 Design and analyse the DC bias circuitry of BJT.
8 Design and analyse the DC bias circuitry of FET

UNIT-I

Semiconductor Physics &P-N Junction Diode: Semiconductor Materials ,Intrinsic & Extrinsic Materials ,Doping Concentrations ,Continuity equation, Drift &diffusion velocity , Hall effect, P-N junction Manufacturing types, diode equation, V-I characteristics , Temperature dependence, Static & Dynamic resistance, Diode equivalent Circuit, Break down mechanism, Zener diode and its characteristic. Study of Photo Diode, Varactor diode, and Schottky diode.

UNIT-II

Rectifiers and Filters: P-N junction as rectifier ,Half wave ,Full wave (center tap, Bridge) rectifiers, Average current, RMS current, Rectifiers efficiency, Ripple factor ,Form Factor, Percentage of regulation, Peak inverse voltage, Problems on rectifiers.
Filters: Capacitor, Inductor Filters-section filter, π-Section filter, Problems on filters, Zener diode as voltage regulator.

UNIT-III

BJT, Transistor Biasing & Stabilization:
Transistor construction, Operation and Configurations, V-I Characteristics, Relation between Transistor Parameters(α,β,γ),Comparison between BJT Configurations ,Analysis of Q-points and Load Lines(AC,DC), Need for Biasing, Types of Biasing Techniques and their stabilization factors (I_{CEO},V_{BE}, β &S) , Thermal runaway ,Problems on Biasing , BJT as Switch and Amplifier.

UNIT-IV

Field Effect Transistor: Introduction to FET, Types of FETs, Construction, Operations and

Characteristics of JFET and MOSFET, FET Configurations, Comparison of JFET &MOSFET, Comparison between BJT and FET. Biasing of JFET and MOSFET, Problems on biasing. Principal of operation and Characteristics of UJT.

TEXT BOOKS:

1 Jacob Millman, Christos C Halkias & Satyabratajit, Electronic Devices and Circuits, TMH, 2nd edition, 2008.
2 Robert L Boylested and Louis Nashelsky, Electronic Devices and Circuit Theory, Pearson India, 9th edition, 2007.

REFERENCE BOOKS:

1 NN Bhargava, DC Kulshrestha and SC Gupta , Basic Electronics and Linear Circuits, TMH, 1 edition 2003.
2 Millman and Grabel , Microelectronics, Tata McGraw Hill, 2 edition, 1988.

AUDISANKARA COLLEGE OF ENGINEERING & TECHNOLOGY: GUDUR (AUTONOMOUS)

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16CS1301 DATA STRUCTURES

COURSE OUTCOMES:

At the end of the course students able to

1 Apply Concepts of Stacks, Queues, Linked lists.
2 Develop Programs for Searching and Sorting.
3 Interpret concepts of Trees, Graphs.
4 Choose searching algorithms.

UNIT-I

Introduction to data structures, Types, Operations.
Stacks: Introduction, Stack Operations, Applications.
Queues: Introduction, Operations on queues, Circular queues, Priority queues, Applications.

UNIT-II

Linked lists: Introduction, Singly linked lists, Circular linked lists, Doubly linked lists, Multiply linked lists, Applications. Implementation of Stack and Queue using linked list.

UNIT-III

Sorting: Introduction, Selection sort, Bubble sort, Insertion sort, Merge sort, Quick sort, Heap Sort.
Searching: Introduction, Linear search, Binary search, Fibonacci search.
Trees: Introduction, Definition and basic terminologies, Representation of trees.

UNIT-IV

Binary Trees: Basic Terminologies and Types, Binary Tree Traversals, Applications. Binary Search Trees, AVL Trees, Red-Black Trees, Splay Trees.

TEXT BOOKS:

1 G.A.V PAI, Data Structures and Algorithms, Concepts, Techniques and Applications, Volume1, 1stEdition, Tata McGraw-Hill, 2008.
2 Richard F. Gilberg & Behrouz A. Forouzan, Data Structures, Pseudo code Approach with C, 2ndEdition, Cengage Learning India Edition, 2007.

REFERENCE BOOKS:

1 Langsam,M. J. Augenstein, A. M. Tanenbaum, Datastructures using C and C++, 2nd Edition, PHI Education, 2008.
2 Sartaj Sahni, Ellis Horowitz, Fundamentals of at Structures in C, 2nd Edition, Orientblackswan, 2010.

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16CS1302 PROGRAMMING THROUGH C++

COURSE OUTCOMES:

At the end of the course students able to

1 Understand the complexities of the real world by Object orientation.
2 Implement the various concept of object orientation practically.
3 Analyze the problems in a better way giving high reliability, adaptability and extensibility to the applications by object orientation.
4 Understand Concepts of Templates and there functions.
5 Analyze the Concepts of Constructors and destructors.
6 Understand how to handling the Exceptions.

UNIT-I

Programming Paradigms: Disadvantages Of Conventional Programming, Object-Oriented Programming, Key Concepts Of Object Oriented Programming, Advantages Of OOP, Object-Oriented Languages, Object Based Languages. Evolution Of C++.

C++ Declarations: Parts Of A C++ Program, Tokens, Data Types – Basic, Derived, User Defined, Void. Variable Declaration And Initialization, Dynamic Initialization Of Variables, Reference Variables, Constants, Operators, Memory Management Operators, Cin And Cout Statements.

Control Structures- If-Else, Nested If-Else, Jump, Goto, Break, Continue, While, Do-While, For, Switch-Case.

Unit-II

Functions: Introduction, Main() Function, Parts Of Functions, Passing Parameters, Return By Reference, Default Arguments, Inline Functions, Function Overloading, Precautions With Overloading.

Class Overview: Structures In C And C++, Classes In C++, Class Declaration, Access Specifiers, Defining, Member Functions, Object Creation, Memory Allocation To Class Members, Accessing Of Class Members. Static Class Members: Static Member Variables, Static Member Functions, Static Objects. Passing Objects as Arguments, Returning Objects, Friend Functions.

Unit-III

Generic Programming With Templates: Need Of Templates, Function Templates, Function Templates With More Arguments, Overloading Of Template Functions, Class Templates, Class Templates With More Arguments, Guidelines For Templates.

Constructor And Destructor: Characteristics, Constructors With Arguments, Constructors

With Default Arguments, Copy Constructor, Constructor Overloading, Destructors, Dynamic Initialization Using Constructors, Recursive Constructor.

Operator Overloading: Operator Overloading Fundamentals, Operator Function, Overloading Unary And Binary Operators, Type Conversions, Rules For Overloading Operators.

Unit-IV

Inheritance: Base Class & Derived Class, Access Specifiers And Simple Inheritance, Types Of Inheritance- Single, Multi Level, Multiple, Hierarchical, Hybrid, Multipath, Virtual Base Classes, Constructor And Destructor In Derived Class. Advantages And Disadvantages Of Inheritance.

Polymorphism: Binding In C++, Pointer To Derived Class Objects, Virtual Functions – Runtime Polymorphism Using Virtual Functions, Pure Virtual Functions, And Abstract Classes.

Exception Handling: Principles, Keywords. Exception Handling Mechanism.

I/O Streams: Console I/O-Unformatted I/O, And Formatted I/O. File I/O-Opening And Closing A File.

TEXT BOOKS:

1 Ashok N. Kamthane, Object Oriented Programming with C++, Pearson Education,India, 2003.
2 Herbert Schildt, C++ the Complete Reference, Third edition, Tata McGraw Hill, 1999.

REFERENCE BOOKS:

1 Barkakatin, objects oriented programming in C++, PHI, 1995.
2 Lafore, Object Oriented Programming in C++, Fourth Edition, Pearson Education.
3 Herbert Schildt , C++: The Complete Reference, Forth Edition, Tata McGraw Hill.

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16CS1303 DIGITAL LOGIC DESIGN

COURSE OUTCOMES:

At the end of the course students able to

1. Define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation.
2. Understand the different switching algebra theorems and apply them for logic functions.
3. Define the Karnaugh map for a few variables and perform an algorithmic reduction of logic functions.
4. Define the following combinational circuits: buses, encoders/decoders, (de)multiplexers, exclusive-ORs, comparators, arithmetic-logic units; and to be able to build simple applications.
5. Understand the bi-stable element and the different latches and flip-flops.
6. Derive the state-machine analysis or synthesis and to perform simple projects with a few Flip-Flops.
7. Understand Sequential circuits, like counters and shift registers, and to perform simple projects with them.

UNIT-I

Binary Systems: Digital Systems, Binary Numbers, Number base conversions, Octal and Hexadecimal Numbers, Complements, Signed binary numbers, Binary codes.

Boolean algebra and Logic Gates: Basic Definitions, Axiomatic Definition of Boolean Algebra, Basic Theorems and Properties Of Boolean Algebra, Boolean Functions Canonical and Standard Forms, Digital Logic Gates.

UNIT-II

Gate – Level Minimization: The Map method, Two-variable and Three variable Map, Four-variable, Tabular Method, SOP & POS simplifications, Don't-care conditions, NAND and NOR implementation.

Combinational Logic: Combinational Circuits, Analysis Procedure, Design Procedure, Adders, Subtractors, Comparators, Decoders, Encoders, Multiplexer & Demultiplexer.

UNIT-III

Synchronous Sequential Logic: Sequential Circuits, Flip-Flops, State Tables and State Diagrams, State Reduction and Assignment, Flip-Flop Excitation Tables, Design Procedure**.**

Asynchronous Sequential Logic: Introduction, Primitive flow & Transition tables, Reduction of State and Flow Tables, Types of Hazards.

UNIT-IV

Registers and Counters: Registers, shift Registers, Ripple counters, synchronous counters, other counters.

Memories and Programmable Logic: Introduction, ROM, RAM, Error Detection and Correction, Programmable logic Array(PLA), Programmable Array logic(PAL), Sequential Programmable Devices.

TEXT BOOKS:

1 M. Morris Mano & Michael D. Ciletti, DIGITAL LOGIC DESIGN, Fourth Edition, Pearson Education / PHI.
2 R.P.Jain , Modern Digital Electronics – 3rd edition TMH.

REFERENCE BOOKS:

1 Fundamentals of Logic Design, Roth, 5th Edition, Donald D.Givone, Digital Principles and Design, Tata Mcgraw Hill, Edition.

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16CS1304 MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE

COURSE OUTCOMES:

At the end of the course students able to

1. Understand the foundations of many basic computer related concepts and provide a coherent development to the students.
2. Create the students' ability to think logically and mathematically.
3. Understand logic expressions for a variety of applications; convert a logic expression into a Boolean circuit, and vice versa.
4. Design relational databases.
5. Analyze the running time of non-recursive algorithms with loops by means of counting.
6. Design network applications using Prim's and Kruskal's algorithms.
7. Apply the concepts of graph theory, permutation, combinations, counting principle and graph theory in solving real-time problems.

UNIT-I

Mathematical Logic: Statements And Notations, Connectives, Well Formed Formulas, Truth Tables, Tautology, Equivalence Implication, Normal Forms, Theory of Inference For The Statement Calculus. Rules of Inference, Consistency of Premises And Indirect Method of Proof.

Predicate Calculus: Predicates, Statement Functions, Variables And Quantifiers, Predicate Formulas, Free & Bound Variables, Universe of Discourse, Inference Theory of Predicate Calculus.

UNIT-II

Set theory & Relations: Introduction, Relations and ordering, Properties of binary Relations, Equivalence, Compatibility Relations, Partial ordering, Hasse diagram.

Functions & Algebraic structures: composition of functions, Inverse Function, Recursive Functions, Lattice and its Properties, Pigeon hole Principle. Algebraic systems, Examples and general properties, Semi groups and monoids, groups, sub groups, Definitions, Examples, homomorphism, Isomorphism and related problems.

UNIT-III

Elementary Combinatorics: Basis of counting, Enumeration of Combinations & Permutations, Enumerating of Combinations & Permutations with repetitions and constrained repetitions.

Recurrence Relations: Generating Function of Sequences, Calculating Coefficient of generating functions, Recurrence relations, Solving recurrence relation by substitution and Generating functions, The method of Characteristic roots, Solution of Inhomogeneous Recurrence Relation.

UNIT-IV

Graph Theory: Representation of Graph, Spanning Trees, BFS, DFS, Kruskal's Algorithm, Prim's Algorithm, and Planar Graphs.
Isomorphism and Sub graphs, Multi graphs and Euler circuits, Hamiltonian graphs, Graph Coloring.

TEXT BOOKS:

1 Discrete Mathematical Structures with Applications to computer science J.P Tremblery, R.Manohar, TMH.
2 Discrete Mathematical for computer Scientists & Mathematicians "J.L. Mott, A.Kandel, T.P.Baker, PHI.

REFERENCE BOOKS:

1 Discrete Mathematics, Schaum's Outlines, Lipschutz, Lipson TMH.
2 Discrete Mathematical Structures, Kolman, Busby, Ross, 6th ed., PHI, 2009.

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16EC2305 ELECTRONIC DEVICES AND CIRCUITS LAB

COURSE OUTCOMES:

At the end of the course students able to

1 Measure voltage, frequency and phase of any waveform using CRO.
2 Generate sine, square and triangular waveforms with required frequency and amplitude using function generator.
3 Lean the operation of Components & instruments used.
4 Analyze the characteristics of different electronic devices such as diodes, transistors etc., and simple circuits like rectifiers & regulators etc.
5 Analyze the characteristics of UJT.

LIST OF EXPERIMENTS

1 PN Junction diode characteristics A. Forward bias B. Reverse bias.
2 Zener diode characteristics.
3 Transistor CB characteristics (Input and Output).
4 Transistor CE characteristics (Input and Output).
5 Half wave rectifier, Half wave rectifier with capacitor filter.
6 Full wave center tapped rectifier with and without capacitor filter.
7 FET characteristics.
8 Design of self bias for CE configuration.
9 Design of Zener regulator.
10 Design of series voltage regulator.
11 Design of shunt voltage regulator.
12 UJT characteristics.

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16CS2306 DATA STRUCTURES LAB

COURSE OUTCOMES:

At the end of the course students able to

1 Develop Programs Using Recursive Functions.
2 Implement Stacks and Queues Using Arrays.
3 Develop Programs for Searching and Sorting Algorithms.
4 Develop Programs Using Concepts of Trees.
5 Apply Concepts of Graphs.

LIST OF EXPERIMENTS

1 Write C programs to implement the stack using arrays.
2 Write C programs to implement the Queue using arrays.
3 Write a C Program to solve the towers of Hanoi problem.
4 Write C programs to implement the following Stack applications
i) Infix to post fix ii) Evaluations of postfix expression.
5 Write C program to implement the following types of queues
i) Priority Queue ii) Circular Queue.
6 Write C programs to implement the Singly linked list.
7 Write C programs to implement the doubly linked list.
8 Write C programs to implement the following search algorithms
i) Linear Search ii) Binary Search iii) Fibonacci Search.
9 Write C programs to implement the following sorting algorithms
i) Bubble Sort ii) Insertion Sort.
10 Write C programs to implement the following sorting algorithms
i) Merge Sort ii) Quick Sort.
11 Write C programs to implement the following sorting algorithms
i) Selection Sort. ii) Heap Sort.
12 Write a C program to implement binary tree using arrays and to perform binary tree traversals i) inorder ii) preorder, iii) postorder.

TEXT BOOKS:

1 G.A.V PAI, Data Structures and Algorithms, Concepts, Techniques and Applications, Volume1, 1stEdition, Tata McGraw-Hill, 2008.
2 Richard F. Gilberg & Behrouz A. Forouzan, Data Structures, Pseudo code Approach with C, 2ndEdition, Cengage Learning India Edition, 2007.

REFERENCE BOOKS:

1 Langsam,M. J. Augenstein, A. M. Tanenbaum, Datastructures using C and C++, 2nd Edition, PHI Education, 2008.
2 Sartaj Sahni, Ellis Horowitz, Fundamentals of at Structures in C, 2nd Edition, Orientblackswan, 2010.

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16CS2307 PROGRAMMING THROUGH C++ LAB

COURSE OUTCOMES:

At the end of the course students able to

1 Apply Abstraction to create models based on the real world.
2 Understand several techniques from previously established paradigms, including modularity, encapsulation and Polymorphism.
3 Apply greater flexibility and maintainability in programming.
4 Improve the knowledge on Objects and class.
5 Apply Abstraction to create models based on the real world.

LIST OF EXPERIMENTS

1 Programs on Tokens.
2 Programs on Dynamic Initialization of variables.
3 Programs on control statements (if-else, Nested if-else, jump, goto, break, continue, while, do-while, for, switch-case).
4 Programs on Memory management operators.
5 Programs to implement on parameter passing techniques.
6 Programs using inline functions.
7 Programs using function overloading.
8 Programs to implement Access specifiers.
9 Programs on Friend functions.
10 Programs on Copy Constructor.
11 Programs on Constructors with default arguments.
12 Programs on types of inheritance.

TEXT BOOKS:

1 Ashok N. Kamthane, Object Oriented Programming with C++, Pearson Education,India, 2003.
2 Herbert Schildt, C++ the Complete Reference, Third edition, Tata McGraw Hill, 1999.

REFERENCE BOOKS:

1 Barkakatin, objects oriented programming in C++, PHI, 1995.
2 Lafore, Object Oriented Programming in C++, Fourth Edition, Pearson Education.
3 Herbert Schildt , C++: The Complete Reference, Forth Edition, Tata McGraw Hill.

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16AS3301 COMMUNICATION SKILLS PRACTICE

COURSE OUTCOMES:

At the end of the course students able to

1 In this strand, students develop learning and thinking skills and strategies to become self-directed, lifelong learners.
2 They discover how to manage their own learning and acquire knowledge and skills that they can transfer to a variety of situations related to learning, work, and daily life.

- **Development of Proficiency in Concepts of effective communication:**

Practice on Oral and spoken communication skill & testing– Communication process and voice & accent, voice clarity, handling them voice modulation & intonation,
KISS (Keep it short and sweet) in word stress etc.
Composing Feedback and questioning effective messages.
Non–Verbal Communication: Objectiveness in Argument its importance and nuances:
Development etiquettes and Facial Expression,
Posture, manners Gesture , Eye contact, appearance Study of different pictorial (dress code).

- **Art of Speaking**

Introduction – What makes communication important? – Defining communication – special feature of communication – communication process – channels of communication – Formal communications network – Informal communications network (Grapevine Communication) – Importance of Communication – Barriers to communication – Tips for effective communication – conversation tips – what is presentation? – Tips for powerful presentation – Art of public speaking – Importance of public speaking – Benefits of public speaking – Public speaking tips – overcoming fear of public speaking.
Activity : Conservation; Presentation; Pubic Speaking

- **Art of Writing**

Introduction – Importance of Writing – Writing tips – Drawbacks of written communications.

- **Art of Writing E-Mail**

Introduction – The Mail Magic – use appropriate salutations – Make the subject matter significant – keep a dictionary close by – use commas – use smileys – when I doubt, preface – include previous message – shorten the file attachments – Reread before pressing 'Send' button – Be polite, and reciprocate good deeds – Anticipate, empathize, understand – what netiquette?

- **Etiquette and Manners**

Etiquette
Introduction – Modern etiquette – Benefits of etiquette – classification of etiquette – accompanying women – Taboo topics – proposing the toast.
Manners
Introduction – Poor Manners noticed in youth – why should you practice good manners ? – Practicing good manners – Manners at the wheel driving – Manners in the flight – Respecting the sacred – visiting holy places – Dealing with the challenged – Attending the funeral – Professional

manners – social skills (manners) – getting along with people – Manners to get respect from others – To sum up : corporate grooming tips – Mind your mobile manners – Annoying office habits.

Activity : 1. Test your Etiquette; 2. Test your Manners

- **Preparing CV / Resume**

Introduction – Meaning – Differences among Bio-data, CV and Resume – The terms – The purpose of CV writing – Types of Resumes – Interesting facts about Resumes – CV writing tips – CV/Resume preparation – the do's – Resume checkup – Electronic Resume tips – References – Power words – Common Resume builders – Key skills that can be mentioned in the Resume – Cover letters – Cover letter tips

Expression of non-verbal communication and its analysis

- **Written Communication Skill**:
  Practice for:
  - Correction of errors
  - Making of Sentences
  - Paragraph Writing
  - Leave Application and simple letter writing

- **Presentation Skill practice**
  - Preparing in presentation
  - Delivery of presentation
- **Telecommunication Skills**
  - Tele – etiquette
  - Receiving Calls
  - Transferring calls
  - Taking Message/ Voice Mails
  - Making Outgoing Calls
- **Computer and Internet operational**
  - Key boarding skills
  - Practice on computer using MS office XP
  - Practice on sending & receiving e-mail

REFERENCE BOOKS:

1 Soft skills Training – A workbook to develop ski lls for employment by Fredrick H. Wentz

2 Personality Development and Soft skills, Oxford University Press by Barun K. Mitra 3. The Time Trap : the Classic book on Time Management by R. Alec Mackenzine

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B.Tech 3rd Semester – CSE

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16AS3302 PROFESSIONAL SOCIETY ACTIVITIES-I

Professional Society Activities (PSA) course is aimed at enhancing the self learning, communication, managerial skills of the students by engaging them in various Co & Extra Curricular activities activities during their course of study. Activities in each of the department shall be designed and conducted by the Professional Society Executive Committee whose composition is:

1. Faculty Mentors- 2 No.
2. Student Chairman: 1 No.- Final year Student
3. Student General Secretary: 1 No.- Third year Student
4. Treasurer: 1 No.- Third year Student

Student Members: 2 No.s from each class

PSA related activities would be of the following nature but not limited to:

Activity#0 : Constitution of Student Body at respective departments & Inaugural Function

Activity#1 : Just A Minute

Activity#2 : Technical Quiz

Activity#3 : Open House- Lab Demo

Activity#4 : Technical Paper Presentation- Preliminary

Activity#5 : Technical Paper Presentation- Final

Activity#6 : Poster Presentation

Activity#7 : Collage- A theme based event

Activity#8 : Debate Competition

Activity#9 : Group Discussion Competition

Activity#10 : Mock Interviews

Activity#11 : Model Exhibition

Activity#12 : Valedictory Function

Composition of Professional Society Executive Committee:

1. Faculty Mentors- 2 No.
2. Student Chairman: 1 No.- Final year Student
3. Student General Secretary: 1 No.- Third year Student
4. Treasurer: 1 No.- Third year Student
5. Student Members: 2 No.s from each class

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16CS1401 DATABASE MANAGEMENT SYSTEM

COURSE OUTCOMES:

At the end of the course students able to

1 Identify and define the data models needed to design a database.
2 Create conceptual and logical database design for large enterprises.
3 Apply Integrity constrains over the relations.
4 Understand normalization process on existing database for eliminating redundancy.
5 Apply the recovery techniques for managing the database effectively to avoid the data lose.

UNIT-I

Data base System Applications, File Systems vs. DBMS, View of Data, Data Abstraction, Instances and Schemas, Data Models, Database Languages, Data base Architecture.

Structured Query Language (SQL): The Form of a Basic SQL Query, UNION, INTERSECT and EXCEPT, Nested Queries, Aggregate Operators, Null Values, Logical Connectivity's-AND, OR and NOT, impact on SQL Constructs, outer joins, Disallowing NULL Values, Complex Integrity Constraints in SQL, Triggers and Active Data Bases.

UNIT-II

The Entity Relationship Model: Database Design and ER diagrams, Entities, Attributes, and Entity sets, Relationships and Relationships Sets, Additional Features of the ER Model, Conceptual Design with the ER Model, Conceptual Design for Large Enterprises.

The Relational Model: Introduction to the Relational Model, Integrity Constraints over Relations, Enforcing Integrity Constraints, Querying Relational Data. Logical Database Design: ER Model to Relational Model, Views.

UNIT-III

Schema refinement and Normal forms: Schema refinement, Problems Caused by redundancy, Decompositions, Problem related to decomposition, Functional Dependencies, Reasoning about FDS, Normal Forms, Properties of Decomposition, Normalization, Schema Refinement in Database Design, Other kinds of Dependencies.

Storage and indexing: The Memory Hierarchy, RAID, Disk Space Management, Buffer Management, Files of Records, Page Formats, Record formats. Index Data Structures, Hash Based indexing, Tree based Indexing, B+ Trees.

UNIT-IV

Transactions: Transaction Concept, Transaction State, Implementation of Atomicity and Durability, Concurrent Executions, Serializability - Recoverability – Implementation of

Isolation, Testing for serializability.

Concurrency control: Lock –Based Protocols, Timestamp Based Protocols- Validation-Based Protocols, and Multiple Granularity.

Recovery System: Failure types, Recovery and Atomicity, Log – Based Recovery, Recovery with Concurrent Transactions, Buffer Management, Advance Recovery systems- Remote Backup systems.

TEXT BOOKS:

1 Peter Rob, A.Ananda Rao, Carlos Coronel, Database Management Systems, 2011, Cengage Learning.
2 Raghurama Krishnan, Johannes Gehrke, Data base Management Systems, III Edition, TATA McGrawHill.
3 Silberschatz, Korth, Sudarshan Data base System Concepts, V Edition, McGraw hill.

REFERENCE BOOKS:

1 Ramez Elmasri, Shamkant B.Navrate Fundamentals of Database Systems, 5th Edition Pearson.
2 C.J.Date , Introduction to Database Systems, Pearson Education.

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B.Tech 4th Semester – CSE	**L**	**T**	**P**	**Oth**	**C**
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16CS1402 OOPS THROUGH JAVA

COURSE OUTCOMES:

At the end of the course students able to

1 Solve problems using object oriented approach and implement them using Java.
2 Write efficient programs with multitasking ability.
3 Understand the Thread life cycle and ability to write Multithreading programs.
4 Use Exception Handling Mechanisms to write efficient java programs.
5 Understand the Networking concepts in java.
6 Create user friendly interface using Applets, Event Handlers and Swings.

UNIT-I

Introduction: Need for OOP paradigm, History and Evolution of java, Java buzzwords, data types, variables, arrays, operators, control statements, simple Java program.

Introducing Classes: Class Fundamentals, Declaring objects, Introducing methods, constructors, this keyword, garbage collection, overloading methods and constructors, Using objects as parameters, Argument passing, Returning objects, recursion, Access Control, Understanding static, Introducing final keyword, Nested Classes, Exploring the String class, Using Command-Line Arguments.

UNIT-II

Inheritance: Inheritance basics, Using super, forms of inheritances, When constructors are called , method overriding, dynamic method dispatch Using abstract classes, using final with inheritance, the Object class.

Packages and Interfaces: Packages, Access Protection, Importing Packages, Interfaces.

The Applet Class: Two Types of Applets, Applet Basics, Applet Architecture, an Applet Skeleton, Simple Applet Display Methods.

UNIT-III

Exception Handling : Exception Handling Fundamentals, Exceptions Types, Uncaught Exceptions, Using try and catch, Multiple catch Clauses, Nested try Statements, throw, throws, finally keywords, Java Built-in Exceptions, creating own exception subclasses, Chained Exceptions, Using Exception.

Multithreading: The Main Thread, Creating a Thread, Creating Multiple Threads, Using is Alive () and join (), Thread priorities, Synchronization, Inter thread communication, deadlocks, Multithreading.

Event Handling: Two Event Handling Mechanisms, Delegation Event Model, Event Classes, Sources of Events, Event Listener Interfaces, Using the Delegation Event Model, Adapter classes.

UNIT-IV

Software Development Using JAVA

Introducing Swing: The Origins of Swing, Swing Is Built On The AWT, Two Key Swing Features, The MVC Connection, Components And Containers, The Swing Packages, A Simple Swing Application, Event Handling, Create A Swing Applet.

TEXT BOOKS:

1 Herbert Schildt, The Complete Reference Java J2SE 7th Edition, TMH Publishing Company Ltd, NewDelhi.
2 H.M.Dietel and P.J.Dietel, Java How to Program, Sixth Edition, Pearson Education/PHI.

REFERENCE BOOKS:

1 Cay.S.Horstmann and Gary Cornell, Core Java 2, Vol 1, Fundamentals, Seventh Edition, Pearson Education.

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16CS1403 OPERATING SYSTEMS

COURSE OUTCOMES:

At the end of the course students able to

1 Examine the efficiency of Scheduling algorithms.
2 Analyze about Inter process communication and their methods.
3 Understand the semaphore concepts.
4 Apply various methods to prevent Deadlock.
5 Understand various Memory Management concepts and Virtual memory.
6 Examine Structure of file system and Way of Accessing the file system.
7 Analyze about Protection and their Principles.

UNIT-I

Operating System Overview: Introduction to Operating System, Operating System Services, Operating system Structures, Distributed systems, Special purpose systems, System calls, Types of System Calls.

Process Management: Process Concepts, Process Scheduling Criteria, Scheduling algorithms and their evaluation, Inter process communication, Threads.

UNIT-II

Process Synchronization: Critical section problem, Peterson's Solution, Synchronization Hardware, Semaphores, Classic problems of Synchronization, Monitors.

Deadlocks: System model, Deadlock Characterization, Deadlock Prevention, Deadlock Avoidance , Deadlock Detection, Recovery from deadlock.

UNIT-III

Memory Management: Swapping, Contiguous memory allocation, Paging, Structure of the Page Table, Segmentation. Virtual Memory Management- Demand paging, Page Replacement algorithms.

File System: File Concept, Access methods, Directory Structure, File System mounting, File sharing and Protection. Implementing file Systems- Allocation methods, Free space management.

Secondary storage structure: Mass-Storage structure**,** Disk structure, Disk attachment, Disk scheduling.

UNIT-IV

I/O Systems: I/O Hardware, Application I/O interface, Kernel I/O sub systems, Transforming I/O requests to Hardware operations, Streams.

Protection: Protection, Goals of Protection, Principles of Protection, Domain of Protection, Access Matrix, Access Control, Revocation of Access Rights, Capability – Based Systems, Language – Based Protection.

TEXT BOOKS:

1 Abraham Silberschatz, Peter B. Galvin, Greg Gagne, Operating System Principles, Eighth Edition, John Wiley.
2 Stallings, Operating Systems: Internals and Design Principles, Sixth Edition, Pearson Education.

REFERENCE BOOKS:

1 Andrew S Tanenbaum, Modern Operating Systems, Second Edition, PHI.
2 A.S.Godbole, Operating Systems, Second Edition, TMH.
3 R.Elmasri, A, G.Carrick and D.Levine, Operating Systems, Mc Graw Hill.

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16CS1404 COMPUTER ORGANIZATION

COURSE OUTCOMES:

At the end of the course students able to

1 Acquire the knowledge about simplifying the circuits by different methods.
2 Understand the basic organization of Computer system and its Instructions.
3 Learn the instructions to write assembly language program.
4 Analyze the Pipeline processing and DMA Techniques.

UNIT-I

COMPUTER FUNCTION AND REGISTER TRANSFER LANGUAGES: Computer types, Functional units, Register transfer language. Register transfer, Bus and memory transfers.

MICRO-OPERATIONS: Arithmetic micro-operations, Logic micro-operations, Shift micro-operations, Arithmetic logic shift unit.

BASIC COMPUTER ORGANIZATION AND DESIGN: Instruction codes, Computer registers, Computer instructions, Timing and Control, Instruction cycle, Memory-Reference instructions, Register Reference instruction, Input-Output instruction and Interrupt, Design of basic computer.

UNIT-II

CENTRAL PROCESSING UNIT: Stack Organization, Instruction Formats, Addressing Modes, Data Transfer and Manipulation, Program Control, Complex Instruction Set Computer, Reduced Instruction Set Computer.

CONTROL UNIT DESIGN: Hardwired Control**,** Micro-Programmed Control. Control memory, Address sequencing.

UNIT-III

COMPUTER ARITHMETIC: Fixed point representation, Floating point representation, Addition and subtraction, Multiplication algorithms, Division algorithms, Floating point arithmetic operations.

THE MEMORY SYSTEM: Memory hierarchy, Cache memories, Main Memory, Secondary storage, Performance considerations, Virtual memories.

UNIT-IV

INPUT-OUTPUT ORGANIZATION: Peripheral devices, Input-Output interface, Asynchronous data transfer, Modes of transfer, Priority interrupt, Direct Memory Access, Input-Output Processor (IOP).

PIPELINING: introduction to Pipelining, Arithmetic pipeline, Instruction pipeline, pipeline hazards .

TEXT BOOKS:

1 Carl Hamacher, Zvonks Vranesic, Safea Zaky, Computer Organization 5thEdition, McGraw Hill.
2 M.Moris Mano, Computer Systems Architecture, 3rd Edition, Pearson/PHI.

REFERENCE BOOKS:

1 William Stallings, Computer Organization and Architecture, 6th Edition, Pearson/PHI.
2 Andrew S. Tanenbaum, Structured Computer Organization, 4thEdition PHI/Pearson.

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16CS1405 SOFTWARE ENGINEERING

COURSE OUTCOMES:

At the end of the course students able to

1 Understand ethics and professional issues of software engineering.
2 Examine how CMMI Levels will be assigned for organizations.
3 Apply various processes used for developing the software.
4 Understand various models used for representing the requirements.
5 Apply Golden Rules in User interface design.
6 Evaluate Software by different testing Techniques.
7 Analyze various types of risks in software.

UNIT-I

Introduction To Software Engineering: The Evolving Role of Software, Changing Nature Of Software, Legacy Software, Software Myths, Software Engineering-A Layered Technology, A Process Framework, The Capability Maturity Model Integration (CMMI), Process Assessment.
Process Models: The Waterfall Model, Incremental Process Models, Evolutionary Process Models, Specialized Process Models, the Unified Process, The Agile process.

UNIT-II

Understanding Requirements: Requirement Engineering, Eliciting Requirements, Developing Use cases, Negotiating Requirements, validating Requirements.
Requirements Modeling: Scenario-Based Modeling, Data Modeling Concepts, Class Based Modeling, Flow Oriented Modeling, Creating Behavioral Model.

UNIT-III

Design Engineering: Design Process And Design Quality, Design Concepts, Design Model, Pattern Based Software Design, Software Architecture, Architectural Styles and Patterns, Assessing Alternative Architectural Designs.
Modeling Component-Level Design: Designing Class-Based Components, Designing Traditional Components. User Interface Design- The Golden Rules, User Interface Analysis and Design, Design Evaluation.

UNIT-IV

Testing Strategies: A Strategic Approach to Software Testing, Test Strategies for Conventional Software, Black-Box and White-Box Testing, The Art Of Debugging.
Product Metrics: Software Quality, A Frame work for Product metrics, Metrics for Requirements Model, Metrics for Design Model, Metrics for source code, Metrics for testing, Metrics for maintenance.

TEXT BOOKS:

1 Software Engineering: A practitioner‘s Approach, Roger S. Pressman, Seventh Edition. McGraw-Hill International Edition, 2010.
2 Software Engineering, Ian Sommerville, Eighth Edition, Pearson Education, 2009.

REFERENCE BOOKS:

1 K.K. Agarwal & Yogesh Singh, Software Engineering, New Age International Publishers.

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16CS1406 FORMAL LANGUAGES AND AUTOMATA THEORY

COURSE OUTCOMES:

At the end of the course students able to

1 Apply the concepts of automata in modeling abstract devices.
2 Develop formal proofs for models of Computation.
3 Understand language recognition problems instead of general computational problems.
4 Understand how "the finite state machine" solves the problems in computing.
5 Gain Knowledge on Finite State Automaton, Regular Expression and Push Down Automaton.
6 Understand deterministic, nondeterministic FA and Turing machines.

UNIT-I

Automata: Alphabets, Strings, Language. Finite Automata: Definition of Deterministic finite automata, How a DFA processes strings, simpler notations for DFA's. Definition of Nondeterministic finite automata, the language of an NFA, Equivalence of NFA and DFA. FA with ϵ -transitions, the formal notation for an epsilon NFA, Extended transitions of DFA, NFA and epsilon NFA's, Epsilon closure, Eliminating epsilon transitions.

UNIT-II

Regular Expressions and Languages: Regular expressions- The Operators of regular expressions, Precedence of RE operators, Finite automata and regular expressions: Converting regular expressions to automata, Converting DFA's to regular expressions by eliminating states, Algebraic laws for regular expressions, Pumping lemma for regular languages.

Properties of Regular languages: Closure of regular languages under Boolean operations, Testing emptiness of regular languages, Testing membership in a regular language, Equivalence and minimization of automata, Minimization of DFA's.

UNIT-III

Context Free Grammars and Languages: Definition of context-free grammar, Derivation using grammar, The language of a grammar, Ambiguous grammar, simplification of CFG, Chomsky Normal Form, Greibach Normal Form (GNF), The Pumping lemma for context free languages, Properties of CFL.

Pushdown Automata: Definition of pushdown automata, the languages of a PDA, Equivalence of PDA's and CFG's, Deterministic pushdown automata.

UNIT-IV

Turing Machine: Turing Machine definition, Notation for the Turing machine, Transition diagram for Turing machines, Language of a Turing Machine, Multi tape Turing machines. **Undecidability**: A Language that is not recursively enumerable, The Church-Turing thesis, Chomsky hierarchy of languages, linear bounded automata and context sensitive language, Post's Correspondence problem, Classes of P and NP, NP-Complete and NP-Hard Problems.

TEXT BOOKS:

1 J.E. Hopcroft, Rajeev Motwani, and J.D. Ullman, "Introduction to Automata Theory Languages and Computation", Second Edition, Pearson Education, 2001.
2 Michael Sipser, "Theory of computation', 1st edition, 2008.

REFERENCE BOOKS:

1 K.L.P. Mishra and N. Chandrashekaran, "Theory of Computer Science-Automata Languages and Computation", 2nd edition, PHI, 2003.
2 John C Martin, "Introduction to Languages and the Theory of Computation", 3rd edition, Tata McGraw Hill, 2003.

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16CS2308 DATABASE MANAGEMENT SYSTEMS LAB

COURSE OUTCOMES:

At the end of the course students able to

1 Understand, analyze, and apply common SQL Statements including DDL, DML and DCL statements to perform different operations.
2 Apply Integrity constrains over the tables.
3 Understand, analyze, and apply PL/SQL blocks using Cursors and Triggers.

LIST OF EXPERIMENTS

1 Practice DDL Commands: Creation, altering and dropping of tables with out and with Integrity Constraints.
2 Practice DML Commands: Inserting, updating and deleting rows of a table and enforce Integrity Constraints.
3 Queries using DISTINCT, AND, OR, NOT, BETWEEN, LIKE, IS NULL, ORDER BY. Example:- Select the roll number and name of the student who secured fourth rank in the class.
4 Queries (along with sub Queries) using ANY, ALL, IN, NOT IN, EXISTS, NOTEXISTS, UNION, INTERSET, MINUS.
5 Queries using Aggregate functions (COUNT, SUM, AVG, MAX and MIN), GROUP BY, HAVING and Creation and dropping of Views.
6 Queries using Conversion functions, string functions, date functions.
7 i)Creation of simple PL/SQL program which includes declaration section, executable section and exception –Handling section (Ex. Student marks can be selected from the table and printed for those who secured first class and an exception can be raised if no records were found).
ii) Insert data into student table and use COMMIT, ROLLBACK and SAVEPOINT in PL/SQL block.
8 Program development using WHILE LOOPS, FOR LOOPS, nested loops.
9 Programs development using creation of procedures, passing parameters IN and OUT of PROCEDURES.
10 Program development using creation of stored functions, invoke functions in SQL Statements and write complex functions.
11 Develop programs using features parameters in a CURSOR, FOR UPDATE CURSOR, WHERE CURRENT of clause and CURSOR variables.
12 Develop Programs using BEFORE and AFTER Triggers, Row and Statement Triggers and INSTEAD OF Triggers.

TEXT BOOKS:

1 Peter Rob, A.Ananda Rao, Carlos Coronel, Database Management Systems, 2011, Cengage Learning.
2 Raghurama Krishnan, Johannes Gehrke, Data base Management Systems, III Edition, TATA McGrawHill.
3 Silberschatz, Korth, Sudarshan Data base System Concepts, V Edition, McGraw hill.

REFERENCE BOOKS:

1 Ramez Elmasri, Shamkant B.Navrate Fundamentals of Database Systems, 5th Edition Pearson.
2 C.J.Date , Introduction to Database Systems, Pearson Education.

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16CS2409 OOPS THROUGH JAVA LAB

COURSE OUTCOMES:

At the end of the course students able to

1 Understand how object-oriented concepts are incorporated into the Java programming language.
2 Develop problem-solving and programming skills using OOP concept.
3 Design efficient interactive programs in Java using Applets, Event Handlers and Swings.
4 Solve real-world problems through software development in java.

LIST OF EXPERIMENTS

1 Write a Java program:
   a. To prints all real solutions to the quadratic equation $ax^2 + bx + c = 0$. Read in a, b, c and use the quadratic formula. If the discriminant $b^2 - 4ac$ is negative, display a message stating that there are no real solutions.
   b. The Fibonacci sequence is defined by the following rule.
   c. To print the given number is Armstrong or not.
   d. To find simple Interest.
2 Write a Java program:
   a. To Checks whether a given string is a palindrome or not. Ex: MALAYALAM is a palindrome.
   b. To Sorting a given list of names in ascending order.
   c. To make frequency count of words in a given text.
3 Write a Java program:
   a. That prompts the user for an integer and then prints out all prime numbers up to that integer.
   b. To find the product of matrices.
   c. that reads a line of integers, and then displays each integer, and the sum of all the integers (Use StringTokenizer class of java.util).
4 Write a Java program:
   a. That reads a file name from the user, and then displays information about whether the file exists, whether the file is readable, whether the file is writable, the type of file and the length of the file in bytes.
   b. That reads a file and displays the file on the screen, with a line number before each line.
   c. That displays the number of characters, lines and words in a text file.
5 Write a Java program:
   a. To Implements stack ADT.
   b. To Converts infix expression into Postfix form.
   c. Evaluates the postfix expression.

6 Write a Java program:
   a. To develop an applet that displays a simple message.
   b. To develop an applet that receives an integer in one text field, and computes its factorial Value and returns it in another text field, when the button named "Compute" is clicked.
7 Write a Java program that works as a simple calculator. Use a grid layout to arrange buttons for the digits and for the +, -,*, % operations. Add a text field to display the result.
8 Write a Java program for handling mouse events.
9 Write a Java program
   a. To illustrate Multi-Threading.
   b. That correctly implements producer consumer problem using the concept of inter thread communication.
10 Write a program that creates a user interface to perform integer divisions. The user enters two numbers in the text fields, Num1 and Num2. The division of Num1 and Num2 is displayed in the Result field when the Divide button is clicked. If Num1 or Num2 were not an integer, the program would throw a Number Format Exception. If Num2 were Zero, the program would throw an Arithmetic Exception Display the exception in a message dialog box.
11 Write a Java program that implements a simple client/server application. The client sends data to a server. The server receives the data, uses it to produce a result, and then sends the result back to the client. The client displays the result on the console. For ex: The data sent from the client is the radius of a circle, and the result produced by the server is the area of the circle. (Use java.net).
12 Write a java program:
   a. That simulates a traffic light. The program lets the user select one of three lights: red, yellow, or green. When a radio button is selected, the light is turned on, and only one light can be on at a time No light is on when the program starts.
   b. That allows the user to draw lines, rectangles and ovals.

TEXT BOOKS:

1 Herbert Schildt, The Complete Reference Java J2SE 7th Edition, TMH Publishing Company Ltd, NewDelhi.
2 H.M.Dietel and P.J.Dietel, Java How to Program, Sixth Edition, Pearson Education/PHI.

REFERENCE BOOKS:

1 Cay.S.Horstmann and Gary Cornell, Core Java 2, Vol 1, Fundamentals, Seventh Edition, Pearson Education.

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16CS2410 OPERATING SYSTEMS LAB

COURSE OUTCOMES:

At the end of the course students able to

1 Create the programs on process scheduling Algorithms.
2 Implement the programs on Memory Management Techniques.
3 Create the programs on Deal Locks methods.
4 Implement the programs on Disk scheduling Algorithms.
5 Create the programs on Virtual Memory and paging methods.

LIST OF EXPERIMENTS

1 Write a C program to Implement
   a. FCFS (First Come First Served) CPU scheduling algorithm.
   b. SJF (Shortest Job First) CPU scheduling algorithm.
2 Write a C program to Implement
   a. Priority CPU Scheduling algorithm.
   b. Round Robin CPU Scheduling algorithm.
3 Write a C program to Implement MVT (Multiprogramming Variable Task).
4 Write a C program to Implement MFT (Multiprogramming Fixed Task).
5 Write a C program to implement the Banker's Algorithm for Deadlock Avoidance.
6 Write a C program to Implement Banker's Algorithm for Deadlock Prevention.
7 Write a C program to Implement Deadlock Detection.
8 Write a C Program for File Allocation Methods.
   a. Sequential File Allocation.
   b. Indexed File Allocation.
   c. Linked File Allocation.
9 Write a C Program for Page Replacement Policies.
   a. FIFO (First In First Out) Page Replacement.
   b. LRU (Least Recent Used) Page Replacement.
   c. Optimal Page Replacement (LFU).
10 Write a C program to Implement Paging Memory Allocation Technique.
11 Write a C program to Implement Segmentation Memory Allocation Technique.
12 Write a C program to Implement Shared Memory and IPC.

TEXT BOOKS:

1 Abraham Silberschatz, Peter B. Galvin, Greg Gagne, Operating System Principles, Eighth Edition, John Wiley.
2 Stallings, Operating Systems: Internals and Design Principles, Sixth Edition, Pearson Education.

REFERENCE BOOKS:

1 Andrew S Tanenbaum, Modern Operating Systems, Second Edition, PHI.
2 A.S.Godbole, Operating Systems, Second Edition, TMH.
3 R.Elmasri, A, G.Carrick and D.Levine, Operating Systems, Mc Graw Hill.

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16AS3401 **TECHNICAL SEMINAR**

A Technical Seminar shall have two components, one chosen by the student from the course work as an extension and approved by the faculty supervisor. The other component is suggested by the supervisor and can be a reproduction of the concept in any standard research paper or an extension of concept from earlier course work. A hard copy of the information on seminar topic in the form of a report is to be submitted for evaluation along with presentation. The presentation of the seminar topics shall be made before a committee consisting of Head of the department, seminar supervisor and a senior faculty member. Each Technical Seminar shall be evaluated for 100 marks. Technical Seminar component-I for 50 marks and component-II for 50 marks making total 100 marks. (**Distribution of marks for 50:** 10 marks for report, 10 marks for subject content, 20 marks for presentation and 10 marks for queries).

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16AS3402 SOFT SKILLS PRACTICE

COURSE OUTCOMES:

At the end of the course students able to

1 Receive the support they need to resolve issues and make decisions.
2 Explore their personal resources and aptitudes.
3 Understand new career prospects and strive for personal development.
4 Make a proper and informed decision for their career.

1. Introduction - What are Soft Skills?

Importance of Soft Skills – Selling your soft skills – Attributes regarded as Soft Skills – Soft skills – Social soft skills – Thinking soft skills – Negotiating – Exhibiting your soft skills – Identifying your soft skills – improving your soft skills – will formal training enhance your soft skills – soft skills training – Train yourself – practicing soft skill – Measuring Attitude.

Activity: Measure your Soft Skill.

2. Know Thyself / Self – Discovery

Introduction – Importance of knowing yourself – Process of knowing yourself – SWOT analysis – Benefits of SWOT analysis – using of SWOT analysis – SWOT analysis grid – Questions to complete the grid.

Activity: Know yourself.

3. Developing Positive Attitude

Introduction – Meaning – Features of Attitude – Attitude and behavior – Formation of attitudes – change of attitudes – what can you do to change attitude ? Ways of changing attitude in a person – Attitude in a work place – The power of positive attitude – Developing positive attitude – Obstacles in developing positive attitude – Staying positive – Examples of positive attitude – positive attitude and its result – staying negative – examples of negative attitude – Overcoming negative attitude – Negative attitude and its results.

Activity: Measure your attitude.

4. Forming Values

Introduction – Meaning – What is a value? – A core of Values – Values relating to educations – Values relating to self and others – Values relating to Civic responsibilities – Values and attitudes – Importance of values – Formation of values – Types of Values – Terminal and

Instrumental Values – Power of Values – Personal Values – Cultural Values – Values – some examples.

Activity: Identity your values.

5. Improving Perceptions

Introduction – Meaning – Factors influencing Perception – Perceptual process – Improving perception – Perception and its application in organizations.

Activity: Test your Perception.

6. Career Planning

Introduction – Benefits of career planning – Guidelines for choosing a career – Myths about choosing a career – Tips for successful career planning – Developing career goals – Final thoughts on career planning – Things one should know while starting career and during his career.

Activity: Test your career interests.

7. Art of Listening

Introduction –What is Listening? – Two ears, one mouth – Benefits of active listening – kinds of listening – Factors that hamper listening – Common poor listening habits – Advantages of active listening – Listening tips.

Activity: Test your listening skills.

8. Art of Reading

Introduction – Reading is a Cognitive process – Good readers are what they read – Benefits of reading – Different types of reading – Tips for effective reading – The SQ3R Technique – Different stages of reading – Rates of reading – Determining a students' reading rate – Adjusting reading rate – Activities for increasing reading rate – Problems with reading – Becoming an effective reader.

Activity: Test your reading skills.

9. Body Language

Introduction – Body talk – Voluntary and involuntary body language – Forms of body language – Parts of body language – Origin of body language in building interpersonal relations – Reasons to study body language – Body language in building industrial relations – Improving body language – Types of body language – Gender differences – Female interest and body language – shaking hands with Women – Interpreting body language – Developing confidence with correct body language.

10. Team Building and Teamwork

Introduction – Meaning – Aspects of Team building – Skills needed for Team work – A model of team building – Team vs Group – Characterizer of effective team – Role of a team leader – nine persons a successful team should have – inter – group collaboration – Advantages of Inter-group collaboration – Differences faced in intergroup collaboration.

Activity: Test your team work skills.

11. Group Discussion

Introduction – Meaning of GD – Why Group Discussion – Charaters tested in a GD – Tips of GD – skills required in a GD – consequences of GD – Behaviour in a GD – Essential elements of GD – Traits tested in a GD – GD etiquette – Areas to be concentrated while preparing for a GD – Initiating a GD – Non-verbal communication in GD – Movement and Gestures to be avoided in a GD – Topics for GD.

Activity: Group Discussion.

12. Interview Skills

Introduction – Why an interview – Type of interview – Interview panel – Types of Questions asked – Reason for selecting a candidate – Reasons for selecting a candidate – Reasons for rejecting a candidate – on the day of interview – on to the interview table – attending job fair – common mistakes that you wouldn't want to do – question the candidate should not ask during the interview – pot interview etiquette – How does one follow-up? – Telephonic interview – Dress code at interview – Typical questions asked – Interview mistakes – quick tips – How to present well in interview – Tips to make a good impression in an interview – Job interview – Basic tips – How to search for job effectively – Interview quotations.

13. Time Management

Introduction – The 80:20 rule – Take a good look at the people around you – Examine your work – sense of time management – Time is money – Features of Time – Three secrets of time management – Time management matrix – Analysis of time matrix – Effective scheduling – Group of activities – Five steps to successful time management – difficulties in time management – Evil of not planning – time management is a myth – overcoming procrastination – ways to find free time – Time Management tips for students – Interesting facts about time – Ideal way of spending a day – time wasters – time savers – realizing the valve of time – time circle planner.

Activity: Test your time management skills.

14. Stress Management

Introduction – Meaning – At one level stress may be a positive aid to performance – At one level stress may be a negative aid to performance – Effects of stress – Kinds of stress – sources of stress – Few other common sources of stress case study – behaviors identified with

stress – Assessing the existence of stress – What are signs of stress? – Spotting stress in you – stress management tips : Teenage stress – Make the mornings memorable.

REFERENCE BOOKS:

1 Soft Skills : Life skills, Communication Skills, Employability skills and Corporate skills.
Authors : S. Hariharan, N. Sundararajan and S.P. Shanmugapriya
Publishers : MJP Publishers
2 Soft Skills : Know yourself and know the world.
Authors : Alex
Publishers : S Chand & Co., New Delhi.
3 Making work for highly sensitive person.
Authors : Bevertly Jaeger, Ph.D.
Publishers : Tata Mcgraw hill Education

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16AS3403 PROFESSIONAL SOCIETY ACTIVITIES-II

Professional Society Activities (PSA) course is aimed at enhancing the self learning, communication, managerial skills of the students by engaging them in various Co & Extra Curricular activities activities during their course of study. Activities in each of the department shall be designed and conducted by the Professional Society Executive Committee whose composition is:

1. Faculty Mentors- 2 No.
2. Student Chairman: 1 No.- Final year Student
3. Student General Secretary: 1 No.- Third year Student
4. Treasurer: 1 No.- Third year Student

Student Members: 2 No.s from each class

PSA related activities would be of the following nature but not limited to:

Activity#0 : Constitution of Student Body at respective departments & Inaugural Function

Activity#1 : Just A Minute

Activity#2 : Technical Quiz

Activity#3 : Open House- Lab Demo

Activity#4 : Technical Paper Presentation- Preliminary

Activity#5 : Technical Paper Presentation- Final

Activity#6 : Poster Presentation

Activity#7 : Collage- A theme based event

Activity#8 : Debate Competition

Activity#9 : Group Discussion Competition

Activity#10 : Mock Interviews

Activity#11 : Model Exhibition

Activity#12 : Valedictory Function

Composition of Professional Society Executive Committee:

6. Faculty Mentors- 2 No.
7. Student Chairman: 1 No.- Final year Student
8. Student General Secretary: 1 No.- Third year Student
9. Treasurer: 1 No.- Third year Student
10. Student Members: 2 No.s from each class