G. PULLA REDDY ENGINEERING COLLEGE (Autonomous): KURNOOL
Accredited by NBA of AICTE and NAAC of UGC
An ISO 9001:2008 Certified Institution
Affiliated to JNTUA, Anantapur

First B.Tech Syllabus- Scheme 2010
(Common to all branches)

FOUR YEAR B.Tech DEGREE COURSE

SCHEME OF INSTRUCTION AND EXAMINATION

I B.Tech (Year wise) **COMMON FOR ALL BRANCHES** **(Effective from 2010-11)**
Scheme 2010

S. No	Subject	Abbreviation	Credits	Scheme of Instruction periods/week			Scheme of Examination			
				L	T / D	P	Duration of End Exam (Hours)	End Exam Marks	Internal assessment marks	Total Marks
Theory/Drawing										
1	English and Communication skills	ECS	4	2	-	-	3	70	30	100
2	Computer Programming	CP	6	2	1	-	3	70	30	100
3	Engineering Mathematics – I	EM1	6	2	1	-	3	70	30	100
4	Engineering Mathematics – II	EM2	6	2	1	-	3	70	30	100
5	Physical Sciences	PS	8	4	-		3	70	30	100
6	Environmental Sciences	ESC	4	2	-		3	70	30	100
7	Basic Electrical and Electronics Engineering	BEE	8	4	-	-	3	70	30	100
8	Engineering Graphics (ECE,CSE&CSIT) / Engineering Drawing (CE,ME &EEE)	EG/ ED	8	1	3	-	3	70	30	100
Practical										
9	Phonetics & Communication Skills Lab	PCP	2	-	-	2	2	70	30	100
10	Computer Programming Lab	CPP	4	-	-	3	3	70	30	100
11	Physical Sciences Lab	PSP	2	-	-	2	2	70	30	100
12	Engineering Workshop Practice	EWP	4	-	-	3	3	70	30	100
			62	19	6	10		840	360	1200

ENGLISH AND COMMUNICATION SKILLS (ECS)
(Common to all branches of I B.Tech)

Scheme : 2010   **Internal Assessment Marks : 30**
Contact Periods : 2 L/Week   **End Exam Marks : 70**
Credits : 4   **End Exam : 3 Hours**

This course aims at reinforcing the communicative competence of engineering students. It is designed to enable the students to become effective communicators: in formal and informal situations: academic, professional and social environments. The course enables the students to use English for the purpose of

- Reading technical and general content
- Developing reading skills like skimming, scanning and extensive and intensive reading
- Developing adequate vocabulary to express themselves effectively
- Writing descriptive, narrative and persuasive essays
- Effective written communication in professional contexts: Technical Reports
- Writing informal and formal letters
- E-correspondence

Course Work

To achieve the objectives, instruction will be imparted through a Text Book, relevant ESP materials, and articles from news papers. Students will be given holistic practice in LSRW skills.

Contents

- Reading with a purpose: reading for understanding, skimming, scanning, note taking and note making
- Reading Comprehension
- Vocabulary: synonyms, antonyms, one-word substitutes, idioms and idiomatic phrases, prefixes and suffixes and words often confused
- Common Errors: articles, prepositions, tenses, concord, modals, conditionals, etc. (Remedial Grammar)
- Essay writing
- Precis writing
- Technical Report Writing: Factual Reports and Feasibility Reports.
- E-correspondence: e-mail etiquette
- Reference Skills: Use of dictionary, thesaurus, library and internet for material

Books Prescribed

Text Book :
Selections from LEARNING ENGLISH: A COMMUNICATIVE APPROACH, Hyderabad: Orient Longman, 2005.

Selected Topics :
1. Our Picture of the Universe
2. The Climb to Annapurna
3. The Gold Frame
4. Water: The Elixir of Life
5. Reaching for the Stars.

References :
1. Practical English Usage by Michael Swan, Oxford University Press.

2. English Grammar, Composition and Correspondence by M.A.Pink and S.E Thomas, S.Chand & Co.,
3. Innovate with English: A Course for Engineering Students, edited by T.Samson, Foundation Books.
4. Study Reading – A Course in Reading Skills for Academic Purposes, Foundation Books.
5. Effective Technical Communication by M.Ashraf Rizvi, Tata Mc Graw-Hill.

COMPUTER PROGRAMMING (CP)
(Common to all branches of I B.Tech)

Scheme : 2010	**Internal Assessment Marks : 30**
Contact Periods : 3 L/Week	**End Exam Marks : 70**
Credits : 6	**End Exam : 3 Hours**

UNIT-I
Computer Concepts and Evolution of Languages:
Computer and its organization, Input and Output Devices, Storage information in a computer, Types of Programming languages, Algorithm, Characteristics of an algorithm, Flow charts and Examples.

UNIT-II
Problem Solving:
C fundamental-Syntax, Identifiers and Key words, Data Types, Constants and Variable declarations, Arithmetic operators, Relational and Logical operators-Conditional and Boolean Expressions, Assignment statements, Header files.
Data Input/Output, *printf, scanf, getchar, putchar, gets, puts*, Type conversion: implicit, explicit.

UNIT-III
Flow Control:
Selection: if, if-else, nested if statements, switch statement, goto statement. Looping: conditional loops, counted loops. While, do-while, for loops, break, continue, nested loops. Examples & problems to find terms and sum of series.

UNIT-IV
Arrays:
Defining an array- One dimensional arrays-Multidimensional arrays – Processing an array-Character strings and Character arrays- String handling functions: *strlen, strcpy, strcmp, strcat*. Examples – Searching: Linear search, Binary search- Sorting: Selection Sort, Bubble Sort methods- Matrix operations

UNIT-V
Functions:
Definition, Accessing a function, passing arguments to a function, Argument data types. Local and global variable declarations, storage classes: automatic, external, static, register. Recursion. Passing arrays to a function.

UNIT-VI
Pointers:
Concept of pointers, Pointer declarations, Operations on pointers – Pointer and one-dimensional arrays, Pointers and multidimensional arrays – Passing pointers to a function.
Dynamic Memory Allocation.

UNIT-VII

Structures and Unions:

Defining a structure, processing a structure, User-defined data types (typedef), Enumerated data types (enum), structures and pointers, passing structures to a function, self-referential structures, Unions.

UNIT-VIII
Data Files:
Files, Types of files, Defining and Opening a file, Reading and Writing files, Opening a File, Writing to a File,, Closing a File, Appending to a file, Single Character I/O, Strings I/O, Formatted I/O, Testing for the End of File, Random access of Files, High Level Files, Low level Files.

Text Books

1) COMPUTER CONCEPTS AND C PROGRAMMING: A Holistic Approach to Learning C Basavaraj S.Anami, Shanmukhappa A. Angadi, and Sunilkumar S.Manvi (PHI).

2) 'C' Programming Essentials – Kashinath Dey, Samir Bandupadhay Pearson Education

3) Magnifying C: Arpita Gopal (PHI)

Reference Books:

1) Programming in C – E.Balaguruswamy (TMH)

2) Let US C, Seven Edition By Yashavanth P.Kanetkar (BPB Publications).

3) The C Programming Language, Kernighan Brain/ W.Ritchi Dennis M 2nd Edition (PHI) 2003.

4) C Programming Test Your Skills – AN. Kamthane Pearson Education.

ENGINEERING MATHEMATICS – I (EM1)
(Common to all branches of I B.Tech.)

Scheme : 2010 **Internal Assessment Marks : 30**
Contact Periods : 3L/Week **End Exam Marks : 70**
Credits : 6 **End Exam : 3 Hours**

UNIT-I
Differential Equations of first order and first degree – Exact, Non-exact equation Linear and Bernoulli's euation..Applications : Newton's law of cooling, law of natural growth and decay, L-R , C-R circuits.

UNIT-II
Homogeneous linear differential equations of second and higher order with constant coefficients with RHS term of the type   , sinax or cosax, polynomials in x, x v(x),   , L-C-R circuits.

UNIT-III
Rolle's Theorem, Lagrange's mean value theorem, Simple examples of Taylor's and Maclaurin's series. Functions of several variables. Jacobian. Maxima and Minima of functions of two variables, Lagrnagian method of Multipliers with three variables only.

UNIT-IV
Multiple integrals: Double integrals, Change of order of integration, Change to polar coordinates, Area and Volumes by double integration. Triple integrals: Volume by triple integration

UNIT-V
Laplace Transform of standard functions, First shifting theorem, Second shifting theorem, Laplace Transform of periodic function, Transforms of derivatives and integrals. Multiplication by   , Division by t. Inverse Laplace Transforms.

UNIT-VI
Convolution theorem. Application of Laplace transforms to ordinary differential equations of first and second order. Application to simultaneous differential equations. .

UNIT-VII
Vector Differentiation : Scalar and Vector point functions, Normal, Directional Derivative, Irrotational and Solenoidal fields. Divergent. Gradient, Curl. Properties of divergent and curl, repeated operation by del.

UNIT-VIII
Vector Integration : Green's theorem, Stoke's theorem, Gauss - Divergence theorem and applications. Verification of Green's, Stoke's and Gauss - Divergence theorem.

Text Books:

1) Higher Engineering Mathematics- B.S.Grewal (Khanna Publishers)
2) A Text Book of Engineering Mathematics Vol 1 - T.K.V. Iyengar, B.Krishna Gandhi and others (S.Chand & Company)
3) Higher Engineering Mathematics - B.V.Ramana (TMH Publishers)
4) Engineering Mathematics – N.P.Bali and others (Lakshmi Publishers)

Note : The Question Paper shall consist of *Eight* questions with *One* question in each unit.
The student shall answer any *Five* questions.

ENGINEERING MATHEMATICS – II (EM2)
(Common to all branches of I B.Tech.)

Scheme : 2010   **Internal Assessment Marks : 30**
Contact Periods : 3L/Week   **End Exam Marks : 70**
Credits : 6   **End Exam : 3 Hours**

UNIT-I
Matrices : Rank of a matrix, Normal form. Solution of linear system of Homogeneous and Non-homogeneous equations. Inverse of a matrix by Gauss-Jordan method. Eigen values and Eigen vectors, Properties. Cayley–Hamilton theorem, inverse of a matrix by Cayley-Hamilton theorem.

UNIT-II
Real matrices : Symmetric, Skew-Symmetric, Orthogonal matrices, Linear Transformation. Orthogonal transformation. Diagonolization of a matrix. Complex matrices : Hermitian, Skew-Hermitian matrices and Unitary matrices. Eigen values and Eigen vectors and their properties. Quadratic forms – reduction of quadratic form to Canonical form.

UNIT-III
Solution of Algebraic and Transcendental equations – Introduction, The method of False Position , Iteration method, Newton-Raphson mettod. Solution of simultaneous equations :
Gauss Elimination method, Gauss-Crout's method, Gauss-Seidel method. Finite diffences : Forward differences, Backward differences. Operators , Relation between operators.

Unit-IV
Fourier integral theorem – Fourier sine and cosine integrals. Fourier Transform – Fourier sine and cosine transforms – properties – Inverse transforms – Finite and Infinite Fourier transforms – relation between Fourier and Laplace Transforms – solutions of boundary value problems by using integral transforms.

Unit-V
z-transforms – inverse z-transforms – Properties – Damping rule – Shifting rule – Initial and final value theorems. Convolution theorem – solutions of differential equations by z-transforms.

Unit-VI
Fourier series: Determination of Fourier coefficients, Dirichlet's conditions. Fourier series of Even and Odd functions. Functions having points of discontinuity. Change of interval. .Half -Range Fourier Sine and Cosine series. Practical Harmonic Analysis.

Unit-VII
Formation of Partial Differential Equations by eliminating arbitrary constants and arbitrary functions. Linear equations of first order : Lagranges linear equation. Non – Linear Equations of first order. Second and Higher order homogeneous equations with constant coefficients.

Unit-VIII
Method of separation of variables.. One dimensional wave equation, One dimensional heat equation and Two dimensional Laplace's equation under initial and boundary conditions.

Text Books:
1) Higher Engineering Mathematics - B.S.Grewal (Khanna Publishers)
2) Mathematical Methods - T.K.V. Iyengar, B.Krishna Gandhi and others (S.Chand & Company)
3) Higher Engineering Mathematics - B.V.Ramana (TMH Publishers)
4) Engineering Mathematics – N.P.Bali and others (Lakshmi Publishers)

Note : The Question Paper shall consist of *Eight* questions with *One* question in each unit.
The student shall answer any *Five* questions.

PHYSICAL SCIENCES (PS)
(Common to All Branches of I. B.Tech)

Scheme : 2010	**Internal Assessment Marks : 30**
Contact Periods: (4L/week)	**End Exam Marks : 70**
Credits : 8	**End Exam : 3 Hours**

Part-A Physics

UNIT – I
Force and Motion: Types of force systems, triangle law of forces, Lami's theorem parallelogram law of forces, polygon law of forces , resolution of forces, simple applications Equilibrium conditions.

Centroid and Moment of Inertia: Centroid of simple objects, Moment of inertia and its significance, radius of gyration , expression for moment of inertia, parallel axis and perpendicular axis theorems, applications to thin uniform rod, rectangular lamina, triangular lamina, circular lamina, solid cylinder and hollow cylinder, laws of rotary motion, kinetic energy due to rotation, total kinetic energy of a body.

UNIT- II
Friction : Definition , limiting friction , laws of friction , angle of friction and coefficient of friction , types of friction , tension in suspended bodies , bodies connected and moving horizontally, vertical motion of bodies , horizontal and vertical motion of bodies, motion along an inclined plane, Belt friction.

UNIT-III
Dielectrics: Introduction –Basic Definitions, Polar and Non-Polar dielectrics, the local field , expression for local field , Clausius Mosotti equation, polarization of dielectrics-Ionic, Orientation and Electronic polarizability , frequency dependence of dielectric constant(qualitative), ferroelectric and piezoelectric crystals and their applications, characteristics of good insulating materials, important insulating materials.

UNIT -IV
Material Science: Classification of materials , important properties of engineering materials, Magnetic materials dia , para , ferro, ferri and anti ferro matereials ,Magnetic Hysteresis, Magnetostriction, soft and hard magnetic materials, ferrites.

UNIT -V
Superconductors: Superconductivity, properties, Meissner Effect, Type I and Type II superconductors-applications of superconductors.

Nanomaterials : Introduction – Synthesis techniques of Nanomaterials, Carbon nanotubes, applications -Properties of Nanomaterials and applications .

Text Books
1. Engineering Physics –R.K.Gaur & S.L. Gupta (Dhanapat Rai)
2. Applied Physics- P.K.Mittal (I.K.International)

Reference Books:
1. Engineering Physics –Hitendra K Malik & A.K. Singh (Tata McGrawHill)
2. Solid State Physics –K.Vijaya Kumar & T.Sreenath (S.Chand)

Part – B   Chemistry

Unit - VI

Thermodynamics: System-isolated, closed and open systems, State of system. Homogeneous and heterogeneous systems, Extensive and intensive properties, Reversible and irreversible processes, Isothermal and adiabatic processes, First law of Thermodynamics, Internal energy, Enthalpy. Application of first law equation to isothermal and adiabatic expansions of an ideal gas. Significance of entropy.

Unit - VII

Electrochemistry & Corrosion: Electrode potentials, Nernst equation, Electrochemical series, Theories of Corrosion, Galvanic and Concentration cells, methods of minimizing corrosion
(i) Cathodic protection and (ii) Metal coatings – Hot dipping and Electroplating**.**

Unit - VIII

Water Technology: Nature of impurities in water, Hardness of water and its determination by EDTA method, Boiler troubles- Sludge and scale formation, Priming & foaming , Caustic embrittlement, Boiler feed water treatment by ion-exchange process. Treatment of water for domestic purpose, Sedimentation, Coagulation, Filtration, Sterilization and Disinfections (Basic principles only).

Unit - IX

Fuels and Combustion: Classification of fuels, Characteristics of a good fuel, Calorific value – units, Gross and net calorific values, determination of calorific value by using Bomb calorimeter. Petrol – Knocking and octane number, Diesel – Ignition and cetane number. Lubricants- Definition & classification, Characteristic properties of liquid lubricants, Viscosity Index-determination, Flash & Fire point – definition, Aniline point – significance. Manufacture, composition and uses of producer gas. Combustion calculations, Flue gas analysis by Orsat's apparatus.

Unit - X

Polymers: Definitions, Addition and condensation polymerization (without mechanisms), Plastics –Thermosetting and Thermoplastic resins, compounding of plastics, preparation and engineering uses of (i) Teflon (ii) Nylon and (iii) Bakelite. Natural Rubber – Preparation and processing of latex, Compounding of rubber, Vulcanization. Preparation and engineering uses of (i) Buna-S and (ii) Silicon rubber

Text Books:

Engineering Chemistry – P.C.Jain and Monica Jain (Dhanpat Rai Publishing Company, New Delhi)

Reference Books:

1. Chemistry of Engineering Materials – C.V.Agarwal (Tara Publishers, Varanasi)
2. Chemistry of Engineering & Technology (Vol. I & II) – J.C.Kuriacose and T.Rajaram (Tata McGraw-Hill Pub. Co., New Delhi).

Note:
1. Answer Part-A and Part-B in separate answer books.
2. The question Paper consists of **TEN** questions (**FIVE** in each **Part**). The student should answer **THREE** questions form each part.

ENVIRONMENTAL SCIENCES (ESC)
(Common to all branches)

Scheme : 2010   **Internal Assessment Marks : 30**
Contact Periods : 2L/Week   **End Exam Marks : 70**
Credits : 4   **End Exam : 3 Hours**

Unit - I

Multidisciplinary nature of Environmental science.
Definition, scope and importance.
Need for public awareness

Unit - II

Natural Resources:

Forest resources-use and over-exploitation of forests, deforestation, timber extraction, mining, dams and their effects on forests and tribal people.
Food Resources-world food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer- pesticide problems.
Water resources: use and over utilization of surface and ground ate, floods, drought, conflicts over water, Dams-benefits and problems.
Energy resources: Growing energy needs, renewable and non-renewable energy sources, alternate energy sources, needs for the conservation of energy.

Unit - III

Ecosystems: Concepts of an ecosystem, structure and function of an ecosystem, Energy and nutrient flow in an ecosystem, relation between producers, consumers and decomposers. Ecological succession. Food chains, food webs and ecological pyramids.

Introduction, characteristic features and functions of   (i) Forest ecosystem (ii) Grass land ecosystem (iii) Desert ecosystem (iv) Pond ecosystem (v) Ocean ecosystem and (vi) River ecosystem.

Unit - IV

Biodiversity and its Conservation : Definition, genetic, species and ecosystem diversity. Biogeographical classification of India. Value of biodiversity-consumptive use, productive use, social, ethical, aesthetic and optional values. Threats to biodiversity-habitat loss, poaching of wild-life, man-wildlife conflicts. Endangered and endemic species of India. Conservation of biodiversity.

Unit - V

Environmental Pollution: Causes, effects and control measures of air pollution, water pollution, soil pollution, noise pollution, thermal pollution and nuclear hazards. Role of individual in prevention of pollution.

Unit - VI

Solid waster management: Municipal soiled waste management, wealth from waste, e-waste management and radioactive waster management.

Unit - VII

Social issues and Environment : Consumerism and waste products, from unsustainable to sustainable development. Climate change, global warming, acid rain, ozone layer depletion.
Environment Protection Act: Air, Water, forest and wild life acts, enforcement of environmental legislation.

Unit -VIII

Human population and environment : Population explosion-Family welfare programme. Environment and human health epidemics. Women and child welfare. Role of information Technology in environment and human health.

Text Books:

1) Anbha Kaushik and C.P. Kaushik [2004], "Environmental studies" New Age International (p) Ltd., Publishers, New Delhi
2) Benny Joseph [2005], *"Environmental Studies*," Tata Graw-Hill, New Delhi.
3) Gilbert M. Masters [1994], *Introduction to "Environmental Engi neering and Science*," Pearson Education, New Delhi.

Reference Books:

1) E.P. Odum [1996], *Fundamentals of Ecology*, W.B. Sunders Publishers, USA.
2) M.N. Rao and A.K. Datta [1981], *Waste Water Treatment*, Oxford and IBH Publishers, New Delhi.
3) Bharucha Erach [2002], "The Biodiversity of India", Mapin publishing pvt. Ltd.
4) Santosh Kumar Garg, Rajeshwari Garg and Ranjni Garg [2006], *"Ecological and Environmental Studies*", Khanna Publishers, New Delhi.
5) Anjaneyulu Y. [2004], *Introduction to Environmental Science*, B.S. Publications, Hyderabad.

NOTE:

1) No in-depth knowledge should be expected from the student. It is only to give the student an over view of Environmental Science.
2) The question paper shall consists of **EIGHT** questions and **ONE** form each unit. The student shall answer **FIVE** questions out of **EIGHT** questions.

BASIC ELECTRICAL & ELECTRONICS ENGINEERING (BEE)
(Common to all Branches)

Scheme : 2010   **Internal Assessment Marks : 30**
Contact Periods : 4L/Week   **End Exam Marks : 70**
Credits : 8   **End Exam : 3 Hours**

Unit – I

Definition of current, potential, resistance, power, and energy, symbol and units, Ohm's law, Kirchhoff's laws, solution of series, parallel and series parallel circuits. Electromagnetic induction, Faraday's Laws, Lenz's Law and Fleming's rules.

Principles of a.c. Circuits: Instantaneous, average, r.m.s and maximum value of sinusoidal wave. Concept of phase and phase difference. Concept of inductance and capacitance, R-L-C in simple a.c. circuit. Power factor and improvement of power factor by use of capacitors. Concept of three phase system; star and delta connections; voltage and current relationship (no derivation)

Unit – II

DC Machines: Construction and working principle of DC machine, production of EMF in a generator, Types of excitation, production of torque in a DC motor, losses and efficiency. Characteristics of DC motors.

Transformers: Working, principle and construction of single phase transformer, transformer ratio, emf equation, losses and efficiency, cooling of transformers, isolation transformer, auto-transformer (brief idea), applications.

Unit – III

Induction Motor: production of rotating magnetic field, construction and principle of induction motor, slip, slip-torque characteristics. Basic idea of 1-phase induction motor.

Synchronous Machines: Principle of operation of an Alternator, synchronous impedance, voltage regulation (synchronous impedance method only), principle of operation of synchronous motor.

Unit – IV

Illumination: Units and laws of illumination, Simple lighting calculation, Types of lamps.

Domestic Installation: Various accessories and parts of domestic electrical installation, identification of wiring systems, common safety measures and earthing.

Electrical Safety: Electrical shock and precautions against shock, treatment of electric shock, concept of fuses and their classification, selection and application, concept of earthing and various types of earthing, applications of MCBs.

Batteries: Construction, charging and maintenance of lead acid batteries, maintenance free batteries.

Unit – V

Semiconductor physics and Diode: Classification of materials based on energy band diagram, semiconductor materials, intrinsic and extrinsic semiconductors, conductivity of semiconductors, p-n junction diode, Forward and reverse bias, volt-ampere characteristics, diode resistance, rectifiers, half-wave and full-wave rectifiers, capacitive and inductance filters, breakdown diodes- Zener Diode as Regulator, LED.

Unit – VI

Introduction to Bipolar Junction Transistor: Junction transistor fundamentals, structure, types, symbols, current components and simple current relations, definitions of α, β and γ, CB,CE configurations and Characteristics, CC configuration, transistor as an amplifier, Introduction to transistor biasing, fixed, collector to base and self bias circuits.
Introduction to SCR: Construction, working principle, double transistor analogy and characteristics.

Unit – VII

Digital Electronics : Number systems, conversions, Boolean algebra, DeMorgan's Theorems, Logic gates and truth tables, universal gates, Implementation of Boolean expressions using logic gates, Flip Flops and the truth tables ; R-S, J-K, D and T flipflops, basic applications of FF's (shift register and asynchronous counter), Introduction to IC fabrication- monolithic techniques.

Unit – VIII

Operational Amplifiers: Op Amp fundamentals, ideal characteristics, ideal and practical Op Amp, negative feedback circuits (inverting and non-inverting amplifiers), basic Op Amp circuits (summing, difference, instrumentation amplifiers).

Text Books:

1) Joseph.A. Edminster, "Electrical Circuits", Schaums outline series, TMH Publishers.
2) B, L, Theraja & A.K. Theraja," A Text Book of Electrical Technology",
   Vol. I and II, S.Chand and Co. publishers.
3. SK Bhattacharya, "Electrical Machines" Tata McGraw Hill publishers, New Delhi.
4. Electronic Priciples, 7th edition by Albart Malvino & David J Bates, Tata McGraw Hill publishers
5 Electronic devices and circuits by S Salivahan, 2004, Tata McGraw Hill.
6. Principles of Electronics by V.K.Mehtha, 2003, S.Chand & Company

Reference Books:
1. Edward Huges,"Electrical and Electronics Technology" Pearson Education publishers.
2. H. Cotton,"Electrical technology", CBS Publishers.
3. Kothari D P and Nagrath I J," Basic Electrical Engineering", TMH Publishers.
4. Electronic devices and circuits by Jacob Miliman & Cristos Halkias, 2006, Tata McGraw Hill
5. Electronic devices and circuits by David A. Bell , 5th edition Oxford University Press.
6. Electronics devices and circuits – I by Lal Kishore, 2003, B.S.Pulbications.

ENGINEERING GRAPHICS (EG)
(Common to ECE, CSE &CSIT branches of I B. Tech.)

Scheme : 2010   Internal Assessment Marks : 30
Contact Periods : (1L +3D)/Week   End Exam Marks : 70
Credits : 8   End Exam : 3 Hours

(First Angle Projection)
UNIT-I
General: Drawing instruments and their use, Types of Lines, Dimensioning, Title Block, Lettering, and Geometrical Constructions.
Scales: Scales used in Engineering   practice, Construction of plain and diagonal scales.

UNIT-II
Conics: Construction of Ellipse by eccentricity, foci, oblong and concentric circles methods; Construction of Parabola by eccentricity, rectangular and tangent methods; Construction of Hyperbola by eccentricity and foci methods.
Special Curves: Cycloid, Epicycloid, Hypocycloid, Involute.

UNIT-III
Projections: Principles of orthographic projections, projection of points and lines.

UNIT-IV
Projection of planes: Projection of horizontal, vertical and inclined planes.

UNIT-V
Projection of Solids: Projection of right regular solids – prism, pyramid, cylinder and cone.

UNIT-VI
Sections of Solids: Sectional views of right regular solids - prism, pyramid, cylinder and cone. True shapes of Sections. (Treatment is limited to simple problems only)

UNIT-VII
Orthographic Projection: Conversion of pictorial views into orthographic views. (Treatment is limited to simple objects only)

UNIT-VIII
Isometric Projection: Principles of Isometric projection, Isometric scales, Isometric projections of simple regular and compound solids. (Treatment is limited to simple objects only)

Computer Aided Drafting (Not for the End Exam) : Introduction Auto CAD - Drafting software, Utility Commands, Drawing Entity Commands – Point, Line, Pline, Rectangle, Circle, Ellipse, Arc, Polygon. Editing Commands – Erase, Undo ,Redo, Select, Change, Copy, Array, Offset, etc.. Drawing of simple figures by using above commands.

(For demonstration only and not to be included for drawing practice)
Text Books:
1. K.Venugopal, [2001]" Engineering Drawing and Graphics with Auto CAD" , Fourth Edition,2001, New Age International(P) Limited, Publishers, New Delhi.
2. K.L.Narayana and P.Kannaiah[2006] " Text book on Engineering Drawing," Second Edition Scitech Publications, Chennai.
3. Dhananjay A Jolhe, [2008] "Engineering Drawing with an introduction to Auto CAD", Tata Mc Graw-Hill Publishing Company Ltd, New Delhi.
4. M.B.Shaw & B.C.Rana [2009] " Engineering Drawing "Second Edition Pearson Education , New Delhi

NOTE: The Question paper shall consist of **EIGHT** questions, **ONE** question from each unit. The student shall answer any **FIVE** questions.

ENGINEERING DRAWING (ED)
(Common to CE, ME & EEE branches of I B. Tech)

Scheme : 2010   **Internal Assessment Marks : 30**
Contact Periods : (1L +3D)/Week   **End Exam Marks : 70**
Credits : 8   **End Exam : 3 Hours**

(First Angle Projection)

UNIT-I
General: Drawing instruments and their use, Types of Lines, Dimensioning, Title Block, Lettering, and Geometrical Constructions.
Scales: Scales used in Engineering   practice, Construction of plain and diagonal scales.

UNIT-II
Conics: Construction of Ellipse by eccentricity, foci, oblong and concentric circles methods; Construction of Parabola by eccentricity, rectangular and tangent methods; Construction of Hyperbola by eccentricity and foci methods.
Special Curves: Cycloid, Epicycloid, Hypocycloid, Involutes.

UNIT-III
Projections: Principles of orthographic projections, projection of points and lines.

UNIT-IV
Projection of planes: Projection of horizontal, vertical and inclined planes.
Projection of Solids: Projection of right regular solids – prism, pyramid, cylinder and cone.

UNIT- V
Sections of Solids: Sectional views of right regular solids - prism, pyramid, cylinder and cone. True shapes of Sections. (Treatment is limited to simple problems only)

UNIT-VI
Development of Surfaces: Development of surfaces of right regular solids and their sections - prism, pyramid, cylinder and cone.

UNIT-VII
Orthographic Projection: Conversion of pictorial views into orthographic views. (Treatment is limited to simple objects only)

UNIT-VIII
Isometric Projection: Principles of Isometric projection, Isometric scales, Isometric projections of simple regular and compound solids. (Treatment is limited to simple objects only)

Text Books:

1. K.Venugopal, [2001]" Engineering Drawing and Graphics with Auto CAD" , Fourth Edition,2001, New Age International(P) Limited, Publishers, New Delhi.

2. N.D.Bhatt and V.M.Panchal, [2002] " Elementary Engineering Drawing ", 45 [th] Edition , Charotar Publishing house , Anand, India..

3. K.L.Narayana and P.Kannaiah[2006] " Text book on Engineering Drawing," Second Edition Scitech Publications, Chennai..

4. Dhananjay A Jolhe, [2008] " Engineering Drawing with an introduction to Auto CAD", Tata Mc Graw-Hill Publishing Company Ltd. , New Delhi.
5. M.B.Shaw & B.C.Rana [2009] " Engineering Drawing "Second Edition Pearson Education, New Delhi

NOTE: The Question paper shall consist of **EIGHT** questions, **ONE** question from each unit. The student shall answer any **FIVE** questions.

PHONETICS AND COMMUNICATION SKILLS LAB (PCP)
(Common to all branches of I B.Tech)

Scheme : 2010	**Internal Assessment Marks : 30**
Contact Periods : 2P Week	**End Exam Marks : 70**
Credits : 2	**End Exam : 2 Hours**

PHONETICS LABORATORY

Focus in the lab is on accent neutralization for international intelligibility

1. Introduction to English Phonetic Symbols and associated sounds.
2. Practice in Consonant Sounds
3. Practice in Vowels and Diphthongs
4. Practice in Accent, Rhythm and Intonation

COMMUNICATION SKILLS LABORATORY

Focus in the lab is more on fluency than on accuracy

1. Inter-personal Communication
   a) Self-introduction
   b) Introducing Others
   c) Non-Verbal Communication
   d) Posture, gait and body language.

2. Communication in Formal Situations
   a) Public speaking – Extempore, Prepared Speech
   b) Sell-out
   c) Role-play & Situational Dialogues
   d) Group Discussion
   e) Model Interviews

Books Recommended

1) Exercises in Spoken English Part – I, Part – II & Part – III Published by Central Institute of English and Foreign Languages, Hyderabad.
2) A.Text Book of English Phonetics for Indian Students by T. Balasubramanyam Published by Macmillan India Ltd.,
3) A Practical Course in English Pronunciation by J. Sethi, Kamalesh Sadanand and D.V.Jindal, Prentice – Hall of India Pvt. Ltd., New Delhi.
4) Spoken English – A Foundation Course, Parts 1 and 2, Kamalesh Sadanand and Susheela Punitha, Orient Longman.

5) Developing Communication Skills by Krishna Mohan and Meera Benerjee Published by Macmillan India Ltd.,

COMPUTER PROGRAMMING LAB (CPP)
(Common to all branches of I B.Tech)

Scheme : 2010
Contact Periods : 3P/Week
Credits : 4

Internal Assessment Marks : 30
End Exam Marks : 70
End Exam : 3 Hours

1.a. Write a Program to read 'n' values and find the largest and smallest of them with out using arrays.
  b. Write a program to read a number and print its mirror image (Digits in reverse order).
  c. Write a program to print the roots of a quadratic equation considering all cases.

2.a. Write a program to print the list of prime numbers less than or equal to a given number.
  b. Write a program to find sum of digits of a given number.
  c. Write a program to find whether the given number is Armstrong Number or not.

3.a. Write a program to read in two numbers x and n and then compute the sum of this geometric progression:

$$1+x+x^2+x^3+\text{-------}+x^n.$$

  b. Write a program to evaluate the sum of the following series up to 'n' terms or up to a term whose value is greater than 0.00001 which ever comes earlier $e^x=1+x+x^2/2!+x^3/3!+x^4/4!+\text{--------}$

4.a. Write a program to generate Pascal Triangle.

     1
     1 1
     1 2 1
     1 3 3 1
     1 4 6 4 1

  b. Write a program to generate Floyd's Triangle.

     1
     0 1
     1 0 1
     0 1 0 1
     1 0 1 0 1

  c. Write a program to read a number and print it in English Words.

5.a. Write a program to sort the elements of an array using Bubble Sort.
  b. Write a program to sort the elements of an array using Selection Sort.

6.a. Write a program to perform Linear Search on the elements of a given array.
  b. Write a program to perform Binary Search on the elements of a given array.

7.a. Write a program to read a string and check for palindrome (without using library functions).
  b. Write a program to accept a line of characters and print the count of the number of vowels, consonants,
     blank spaces, digits and special characters.
  c. Write a program to read a set of strings and sort them in alphabetical order.

8.a. Write a program to read two matrices and print their product in the matrix form.
  b. Write a program to read matrix and perform the following operations.
     i. Find the sum of Diagonal Elements of a matrix (use only one loop).

ii. Print Transpose of a matrix (Modify the same matrix).

iii. Write a program to print sum of even and odd numbers in a given matrix.

9.a. Write a program to generate Fibonacci Series up to n terms using functions.

   b. Write a program to find the G.C.D (Greatest Common Divisor) of two given integers using Recursion.

   c. Write a program to read two strings and perform the following operations with out using standard string

      functions.

      i. String lengths.   ii .Compare Two Strings

      iii. Concatenate them, if they are not equal.

10.a.Write a function program to swap two values using Call By Reference concept.

    b. Write a function program using pointers to add two matrices and return the resultant matrix to the calling function.

11. Write a program to define a structure with the following members.

    Roll No : Name: Marks in Sub1: Marks in Sub2: Marks in Sub3.

    Read the 'n' students records and find the total marks of each student and print the result in the following format as per the regulations.

G. Pulla Reddy Engineering College (Autonomous): Kurnool

RollNo	Name	Sub-1	Marks in Sub-2	Sub-3	Total Marks	Result
20081001	xxxxx	80	81	82	243	Distinction
20081002	xxxxx	60	60	60	180	First Class
20081003	xxxxx	40	50	58	148	Second Class

12. Write a program using structures to read today's date and print tomorrow's date.

13. Write a program to perform following operation on files.

    a. Create a file by name *emp.dat* and store the information Name, Designation and Basic pay.

    b. Read the information from *emp.dat* and calculate D.A as 50% of Basic pay and H.R.A as 20% of Basic

       Pay and calculate Gross Salary and store the information in the following format in another file *emp.sal.*

G. Pulla Reddy Engineering College (Autonomous) : Kurnool

Name	Designation	Basic Pay	D.A	H.R.A	Gross Salary

PHYSICAL SCIENCES LAB (PSP)

Scheme : 2010   **Internal Assessment Marks : 30**
Contact Periods : 2P/Alternate Week   **End Exam Marks : 70**
Credits : 2   **End Exam : 2 Hours**

Cycle – I (Physics) :

1. Spectrometer –Diffraction Grating : Determination of wavelength of mercury spectrum by normal incidence method.

2. Newton's Rings : Determination of radius of curvature of the Plano-convex lens by forming Newton's Rings

3. Post Office Box : Determination of Specific Resistance of the material of the given wire .

4. Torsion Pendulum: Verification of Perpendicular axis theorem.

5. Compound Pendulum: Determination of radius of gyration of the given bar .

6. Faraday's Laws of Electromagnetic Induction : Verification of Faraday's of Electromagnetic Induction.

Cycle – II (Chemistry) :

1. Standardization of EDTA solution

2. Estimation of Total hardness of water sample

3. Estimation of Permanent hardness of water sample

4. Estimation of copper in brass.

5. Determination of viscosity of oil.

6. Determination of Calorific value using Bomb Calorimeter

ENGINEERING WORKSHOP PRACTICE (EWP)
(Common to all branches of I B.Tech)

Scheme : 2010   **Internal Assessment Marks : 30**
Contact Periods : 3P/Week   **End Exam Marks : 70**
Credits : 4   **End Exam : 3 Hours**

LIST OF EXPERIMENTS
Part – A (Mechanical Workshop)

Cycle – I (Carpentry)
1. Sawing & Grooving
2. Half Lap joint
3. Dovetail joint
4. Metred Briddle joint

Cycle – II (Fitting, Foundry & Blacksmiyhy)
1. V – fitting
2. Stepped fitting
3. Making of mould using split piece pattern
4. Making round to square cross section & eyebolt from a given M.S bar

Cycle – III (House wiring & Soldering)

1. a) One bulb control by one one-way switch
   b) One bulb controlled by two two-way switches.
2. a) Two bulbs in series
   b) Two bulbs in parallel
3. Soldering Practice
4. Soldering Resistances in Series and in Parallel.

Part – B (IT Workshop)

Cycle – IV (MS Office)

1. Studying various parts of computer system, assembling a computer system and loading a basic operating system with all the required drivers.
2. **MS Word :** Create documents with standard formatting commands, single/multi column, insert pictures/ objects, drawings, hyperlinks, header/footer with page numbers, tables.
3. **MS Excel:** Creating worksheets with various kinds of data, making charts, conditional formatting, awareness of the various functions - statistical, date/time, math's (use some functions like sum, average, standard deviation etc).
4.   **MS-Power Point & MS Access :** Create presentations with preset animations, using different layouts, back grounds, slide master, insert pictures/objects, drawings, hyper links etc and sound effects. Create a database file with required fields, enter the data, perform the basic operations and preparing the reports.

Reference:

1. P. Kannaiah and K.L. Narayana [2004] " Manual on Workshop Practice", Scitech Publication , Chennai.

2. Ron Mansfield [2004] " Working in Microsoft Office" , Tata Mc Graw Hill Publishing Company Ltd. New Delhi.
3. Vikas Gupta [2003] " Computer Knowledge Bank- Vol ! & 2 " , Dream Tech Press , New Delhi.