Scheme of Examination B.E. Semester-I

Subject	Credits				Marks				
					Theory		Practical		Total Marks
	L	P	T	Total	Sessional	Univ.	Sessional	Univ.	
Applied Mathematics-I	4	-	1	5	20	80	-	-	100
Engineering Physics	2	1	1	4	10	40	25	25	100
Engineering Chemistry	2	1	1	4	10	40	25	25	100
Basic Electrical Engineering	2	1	1	4	10	40	25	25	100
Basic Civil Engineering	2	-	1	3	10	40	-	-	50
Engineering Graphics-I	2	1	1	4	10	40	25	25	100
Communication Skills	-	2	-	2	-	-	25	25	50
Computational Skills	-	2	-	2	-	-	25	-	25
TOTAL	14	8	6	28	70	280	150	125	625

B.E. First Semester (C.B.S.)

Applied Mathematics – I (Theory)
(BESI-1)

Course Outcomes

On successful completion of course, student will be able to

i. Find higher order derivatives and use them to find series approximation to the function of one variable and find radius of curvature & evaluate limits having indeterminate forms.
ii. Find partial derivatives and use them to find extreme values of the functions of two variables, series approximation of the function of two variables and find functional relationship.
iii. Test the consistency of the system of non- homogeneous equations and also find non-trivial solution of homogeneous systems, if exists.
iv. Find analytical solutions of 1st order ordinary differential equations & obtain mathematical model of simple electrical circuits and mechanical systems
v. Find analytical solutions of higher order ordinary differential equations & obtain mathematical model of simple electrical circuits and mechanical systems.
vi. Find the complex roots using De Moivre's theorem.

Syllabus

Unit- I: Differential Calculus: (12 Hrs)
Successive Differentiation, Taylor's & Maclaurin's series for one variable, indeterminate forms, Curvature and Radius of curvature, Circle of Curvature.
Unit- II: Partial Differentiation: **(12 Hrs)**
Functions of several variables, First and Higher order derivatives, Euler's theorem , Chain rule and total differential coefficient, Jaccobians, Taylor's & Maclaurin's series for two variables, Maxima & Minima of functions of two variables, Langrage's method of undetermined multipliers.
Unit - III: Matrices (06 Hrs)
Matrix, Inverse of Matrix by adjoint method, Inverse by Partitioning method, Solution of system of linear equations, Rank of Matrix, Consistency of linear system of equations
Unit - IV: First Order Differential Equations (10 Hrs)
First order& first degree differential equations: Linear, Reducible to linear & Exact differential equations (excluding the case of I. F.).
First order& higher degree differential equations
Application of First order& first degree differential equations to simple electrical circuits

Unit - V: Higher Order Differential Equations (14 Hrs)

Higher order differential equations with constant coefficients, P. I. by method of Variation of parameters, Cauchy's & Legendres's homogeneous differential equations, Simultaneous differential equations, Differential equations of the type $\frac{d^2y}{dx^2} = f(x)$ and $\frac{d^2y}{dx^2} = f(y)$.

Applications of differential equations to Oscillations of a spring, Oscillatory Electrical Circuits, Deflection of Beams.

Unit - VI: Complex Numbers (06 Hrs)

Cartesian & Polar forms of Complex Numbers, Geometrical representation of fundamental operations on complex numbers, De Moivre's theorem, Hyperbolic functions and their inverse, Logarithm of complex number, Separation of real and imaginary parts.

Books Recommended:

1. Higher Engineering Mathematics by B. S. Grewal
2. Applied Mathematics Volume I & II, by J. N. Wartikar
3. Textbook of Engineering Mathematics by Bali, Iyenger (Laxmi Prakashan)

B.E. First Semester (C.B.S.)

Engineering Physics (Theory)
(BESI-2T)

Course Outcomes

On successful completion of course, student will be able to

i. Identify and apply the kinds of experimental results which are incompatible with classical physics and which required the development of a quantum theory of matter and light.
ii. Demonstrate the role of uncertainty in quantum physics and interpret the wave function and apply it to obtain information about a particle's physical properties such as energy
iii. To apply the knowledge of Unit cells and crystal planes to determine crystal structure
iv. Identify semiconductor materials, devices and its application.

Syllabus

Unit - I: Quantum Mechanics (10 Hrs)
Plank‟s Hypothesis, Properties of Photons, Compton Effect ,Wave – particle duality, De-Broglie Hypothesis, Matter Waves ,Davisson - Germer Experiment; Bohr‟s Quantization condition.

Unit - II: Wave Packet & Wave Equations (10 Hrs)
Concept of Group and phase velocities, Wave packet, Heisenberg's uncertainty principle, Thought experiment on single slit electron diffraction, Wave function and its probability interpretation, Schrödinger's Time dependent & time independent equations, Solution of Schrodinger's equation for one dimensional infinite potential well, Barrier Tunneling.

Unit - III: Crystal Structure (08 Hrs)
Crystal structure, Meaning of lattice and basis, Unit cell: primitive and non primitive unit cell; Cubic crystal structure: Body and Face centered cubic structures, SC, BCC and FCC unit cells. Unit cell characteristics: Effective number of atoms per unit cell, atomic radius, nearest neighbor distance, coordination number, atomic packing fraction, void space, density; Crystal planes and Miller indices, Inter-planar distance between adjacent planes, Bragg‟s law of X-ray diffraction, Tetrahedral and octahedral voids.

Unit - IV: Semiconductor Physics (12 Hrs)
Qualitative idea on the formation of electron energy bands in solids, Band-theory based classification of solids into insulators, semiconductors and conductors, Fermi-Dirac distribution Function, Intrinsic semiconductors: Germanium and silicon; Fermi- energy, Typical energy band diagram of an intrinsic semi-conductor, Doping and Extrinsic semiconductors, Current conduction in semiconductors.
PN- junction diode; Unbiased, Forward biased & Reverse biased mode with Energy band diagram reference, Diode rectifier equation, Bipolar Transistor action, Hall effect, Hall coefficient & Hall Angle, V-I characteristics of i) Tunnel diode, ii) Zener diode iii) LED.

Books Recommended:

Text Books

- Fundamentals of Physics: David Halliday, Robert Resnick and Jerle Walker, (John-Wiley India, 8e, extended)
- Electronic Engineering Materials and Devices: John Allision, (TMH edition, 10th reprint)
- Engineering Physics:M. N. Avadhanulu, (S. Chand & Co.)
- Concepts of Modern Physics: Baiser (Tata McGraw Hill)

Reference Books

- University Physics: Young and Freedman(Pearson Education)
- Solid State Physics: C. Kittel
- Solid State Physics: R.L. Singhal
- Quantum Mechanics: Schiff

Engineering Physics (Practical)
(BESI-2P)

Course Outcomes

On successful completion of course, student will be able to

i. Differentiate semiconductor through band gap and charge carriers
ii. Characterize different transistor configurations
iii. Identify and Characterize various types of diodes

List of Experiments

1. Elementary analytical techniques: Method of linear least squares fit to the experimental data, Error estimation, calculations involving idea of significant figures.
2. Determination of band gap (A thermistor or p-n junction diode may be used.)
3. V-I characteristics of Semiconductor diodes.
4. V-I characteristics of Zener diodes.
5. Input, output and current transfer characteristics of PNP/NPN transistor in CB and CE mode.
6. Study of Hall Effect.
7. Variation of Hall coefficient (R_H) with temperature.
8. V-I Characteristics of Tunnel Diode.
9. Study of LED.
10. Study of Diode as a rectifier.

B. E. First Semester (C. B. S.)
Engineering Chemistry (Theory)
(BESI-3T)

Course Outcomes

On successful completion of course, students will be able to

i. Asses the quality of water based on analysis in terms of hardness, alkalinity to obtain soft water for industrial and domestic applications.
ii. Understand types of corrosion and will be able to apply different preventive technique.
iii. Identify appropriate cement for various application on the basis of properties and manufacturing process
iv. Understand the need of green chemistry for environmental, societal, global, and ethical issues for chemical processes.

Syllabus

Unit – I: Water Technology (12 Hrs)

Hardness of water and types of hardness

Domestic water treatment: Brief discussion of coagulation and sterilization using UV. Ozone,chlorine, Break point chlorination.
Softening of water-principle, reactions, advantages, limitations and Comparison of – Lime-Soda process, Zeolite process, and de-mineralization process.

Boiler Troubles-(causes, effect on boiler operation and methods of prevention) – Carry over-priming and foaming; Scales and sludges, caustic embrittlement, boiler corrosion; internal conditioning-phosphate, carbonate, calgon conditioning.

Numericals based on lime-soda and Zeolite process. Desalination-using electro dialysis and reverse osmosis processes.

Waste water treatment (introduction and importance)–Brief idea about tertiary treatmentmethods.

Unit – II: Corrosion Science (10 Hrs)

Introduction**,** Causes and Consequence of corrosion, brief idea about electrochemical & galvanic series, Factors influencing corrosion) Nature of metal b) Nature of environment, Chemical and electrochemical corrosion, Mechanisms of electrochemical corrosion; Pilling Bed worth rule; Differential aeration theory of corrosion.

Types of Corrosion – Pitting, inter granular, stress, waterline and galvanic corrosion.

Corrosion Prevention – a) Design and material selection b) Cathodic and anodic protection, c) Protective surface coatings- tinning, galvanizing and powder coating, metal cladding and electroplating.

Unit – III: Construction Materials (**08 Hrs)**

Cement: Portland cement–Raw material, Dry and wet process of manufacture, Proportion and roleof microscopic constituents, Additives of cement ,Setting and hardening of cement; heat of hydration, soundness; Types of cement (characteristics & applications) – White, High alumina, Low heat ,Rapid hardening cement, Ready Mix Concrete, fly ash as cementing material(properties, advantages, limitations & application)

Unit – IV: Green Chemistry and Battery Technology (10 Hrs)

Green Chemistry: Introduction, Principles and significance, industrial application (supercriticalfluids as Solvents, Example-super critical CO_2), Biocatalysis and concept of carbon credits.

Battery Technology: Types of batteries, primary, secondary and reverse batteries, importantdefinition-energy density, power density.

a) Secondary Battery: Lithium ion, Nickel-Cadmium b) Fuel cell application, advantages and limitation (Example: Alkaline fuel Cell).

Books Recommended:

Text Books:

1. Text Book of Engineering Chemistry: S.S. Dara, S. Chand and Company Ltd. New Delhi.
2. Engineering Chemistry: Arty Dixit Dr. Kirtiwardhan Dixit, HarivanshPrakashan, Chandrapur.
3. Textbook of Engineering Chemistry: P.C. Jain and Monica Jain, DhanpatRai and Sons, New Delhi.
4. Textbook of Engineering Chemistry: S.N. Narkhede, R.T. Jadhav, AB. Bhake, A.U. Zadgaonkar, Das GanuPrakashan, Nagpur.
5. Applied Chemistry: A.V. Bharati and Walekar, Tech Max Publications, Pune.

Reference Books:

1. A Text book of Engineering Chemistry :Shashi Chawla; DhanpatRai& Sons, New Delhi.
2. A textbook of Polymer Science : Fred, Billmeyer Jr. ,Wiley India Third edition.
3. Applied Chemistry by N. Krishnamurthy:P. Vallinavagam. And K. Jeysubramanian TMH
4. Applied Chemistry for Engineers : T.S. Gyngell.
5. Chemistry of Advanced Materials : CNR Rao, Rsc Publication.
6. Chemistry of Engineering Materials: Robert B LeighouMcGraw – Hill Book Company, Inc New York
7. Engineering Materials: Kenneth G Budinski (Prentice – Hall of India)
8. Fuels and Combustion by Amir Circar, Orient Longmans
9. Fundamentals of Engineering Chemistry (Theory and Practice) :S. K. Singh (New Age Materials

10. Materials Science and Engineering an Introduction, William D. Callister, (Jr. Wiley publisher).
11. Fundamentals of Corrosion : Michael Henthorne, Chemical Engineering.
12. Water Treatment : F. I. Bilane, Mir publisher

Engineering Chemistry (Practical)
(BESI-3P)

Course Outcomes

On successful completion of course, students will be able to

i. Distinguish different types of titrations in the volumetric analysis.
ii. Asses the quality of water based on analysis impurities in terms of hardness, alkalinity and other metals to obtain soft water for industrial and domestic applications.
iii. Design and conduct experiments as well as to analyze and interpret data.
iv. Take chemistry related topics as part of their project works during their higher semesters.

List of Experiments

1. Determination of temporary and permanent hardness of water by complexometry method.
2. To estimate the amount of Ni^{+2} ions in a given solution by complexometric method.
3. Estimation of Free chlorine in the water by iodometry.
4. Type and extent of alkalinity by Warder's method.
5. Estimation of dissolved oxygen in a water sample.
6. Determination of capacity of anion exchange resin.
7. Determination of capacity of cation exchange resin.
8. Determination of Copper by lodometry
9. To estimate the amount of ferrous and ferric ions present in the given solution or from ore.
10. Determination of hardness of water due to calcium and magnesium ions separately.
11. Determination of heat of neutralization.
12. Determination on rate of corrosion by weight loss by corrossometer.
13. Study of charging of lead acetate battery by measuring density of sulphuric acid electrolyte.
14. Determination of pH of waste water.
15. Verification of Beers Law.
16. Determination COD in waste water.

Laboratory Manual:

1. Applied Chemistry theory and practical O.P. Virmani and A.K.Narular (New Age International).

2. Laboratory Manual on Engineering Chemistry by Dr. Subdharani (DhanpatRai Publishing)

3. A Textbook on experiment and calculation in engineering chemistry by S.S. Dara S.Chand
4. Inorganic quantitative analysis, Vogel. (Prentice Hall).

B.E. First Semester (C.B.S.)

Basic Electrical Engineering (Theory)
(BESI-4T)

Course Outcomes

On successful completion of course, student will be able to

i. Understand the laws of science and their applications for solving the electric and magnetic circuits.

ii. Understand and analyze the basic concepts of single phase and three phase ac systems.

iii. To identify the type of transformer used for particular application.

Syllabus

Unit – I: Electric Circuits (10 Hrs)

EMF, Potential difference, current, power, Energy (Definition & Units SI), Ohms Law, types of sources (Current & Voltage), Ideal and Practical Sources (Independent Sources only), Source Conversion, Superposition theorem with DC source.

Circuit element resistance, factors affecting resistance, series & parallel combination of resistances, Kirchhoff‟s Laws (KVL, KCL) statement & Numerical, star Delta transformation, Circuit Element Inductance, Self and Mutual Inductance, Circuit Element Capacitance.

Unit – II: Magnetic Circuits (8 Hrs)

Types of Magnetic Materials, flux, flux density, flux intensity, MMF, reluctance, permanence, permeability, analogous electric circuit, calculation for composite magnetic circuit, concept of leakage flux and fringing, B-H curve, phenomena of magnetic hysteresis.

Unit - III: AC Circuits (12 Hrs)

Generation of single phase voltage, average and RMS value for sinusoidal waveform, periodic function, phasor representation of sinusoidal electrical quantities, steady state behavior of RLC circuit with excitation, reactance, impedance, power and energy in AC circuit, simple numerical on series and parallel AC circuit, concept and importance of power factor, resonance in series circuits.

Principal of Generation of three phase voltage, Phase sequence, Star & Delta Connected three phase system, Voltage, Current & Power relations for Balanced three phase system only (With numericals).

Unit – IV : Single Phase Transformer (10Hrs)

Basic construction of Transformer (core & shell type), Principle of operation, EMF equation, Transformer ratings, No load & On load operation with leakage reactance, losses, efficiency, Definition & formula for voltage regulation, OC & SC test, equivalent circuit of the Transformer.

Books Recommended:

1) Basic Electrical Engineering: D.C. Kulshreshtha,Revised 1st edition, Tata Mc-Graw Hill Education Pvt. Ltd.

2) A Text Book of Electrical Technology: B. L. Thareja and A. K. Thareja, S. Chand Publication (Volume I, II & III).

3) Generation of Electrical Energy:B. R. Gupta 4th Edition, S Chand Publication

4) Art & Science of Utilization of Electrical Energy: H. Pratab, Third Edition, Dhanpat Rai and Sons.

5) Electric Circuits & Network: K. Suresh Kumar, Pearson Publication.

B.E.First Semester (C.B.S)

Basics of Civil Engineering (Theory)
(BESI-5T)

Course Outcomes

On successful completion of this course the students will be able to:

i. Get acquainted with various branches & scope of civil engineering, Use various materials in construction according to the requirement of the field & familiar with building bye-laws.

ii. Interpret the data collected and able to prepare a map of construction site using modern survey techniques and instruments.

iii. Apply the knowledge of transportation engineering in the social, economical and industrial development of country.

iv. Effect of human activity on environment and the measures to control the hazards at the same time to use the environmental sources effectively without harming the environment and keeping the future needs in mind.

v. Process the plants and can monitor the process from distance, can able to use a proper equipment to carry out a specific work using SCADA and Telemetry.

vi. Develop the sustainable and eco friendly environment.

Syllabus

Unit –I: (10 Hrs)

Introduction to Civil Engineering

Introduction and scope of Civil Engineering. Role of Engineers in the infrastructure development.

General concepts related to building.

Selection of site, basic functions of buildings, types of buildings – Residential, Public, Commercial, and Industrial. Principles of planning, orientation of buildings, introduction to bye-laws regarding building line, Height of building, open space requirement, F.S.I., Carpet area, built up area, setbacks, ventilation.

Components of Buildings

Introduction to Types of loads on buildings. Substructure – Types of soils; rocks and foundation strata, concept of bearing capacity, Types of foundation and their suitability. Superstructure – Types of construction: Load Bearing, Framed, and Composite.

Building Materials

Introduction to basic construction materials; cement, bricks, stone, aggregates, reinforcing steel, Structural glazing, structural steel; Concrete types: PCC, RCC, Prestressed, Precast and Ready Mix Concrete. Use of various eco- friendly materials in construction.

Unit – II: (10 Hrs)

Surveying

Various types of maps and their uses; Introduction to digital mapping; Principles of survey. Introduction to various survey instruments such as EDM, Lasers, Total Station, and digital planimeter. Modern survey methods. Introduction to GIS, GPS and their applications.

Transportation Engineering

Role of transportation in national development; various modes of Transportation.

Classification of Highways: Expressways, NH, SH, MDR, ODR, VR; Types of Pavements, Traffic Signs, signals, Parking system, and Causes of Accidents.

Unit –III: (10 Hrs)

Environment and Natural Resource Management

Water supply - Sources, drinking water requirements, impurities in water and their effects;

Purification of water, modern purification processes; Standards of purified water.

Waste Management: Collection and Disposal methods of Liquid, solid and gaseous wastes.

Water Resources Engineering

Introduction to Hydraulic structures of storage; water conveyance systems; Watershed management: Definition, Necessity and methods; Roof top rain water harvesting and Ground water recharge: relevance and methods.

Unit –IV: (10 Hrs)

Instrumentation in Civil Engineering Structures:

Various Instruments used in construction, water resources, Environmental Engineering, Foundation Engineering, Thermocouples, condition monitoring equipments, Half Cell Potentiometers, Strain Gauges. Management of Utilities using telemetry & SCADA System.

Sustainable Development:

Role of Engineers in Sustainable Development. Concept of green buildings and LEED Certification.

[Note: Minimum 4 Assignments based on the Syllabus**]**

Books Recommended:

1. Elements of Civil Engineering: By S. S. Bhavikatti

2. Basic Civil Engineering: By Dr. B. C. Punmia, Ashok Kumar Jain, Arun Kumar Jain.

3. Concrete Technology: By M.S.Shetty

4. Surveying and Leveling: By Kanetkar and Kulkarni

5. Irrigation and Hydraulic Structures: By S.K.Garg

6. Water Supply and Sanitary Engineering: Including Environmental Engineering, Water And Air Pollution Laws And Ecology: By G. S. Birdie, J. S. Birdie

7. Building Construction: By Sushil Kumar

8. Transportation Engineering: By Khanna & Justo

9. Building Drawing Design: By Shah and Kale

10. Construction Planning, Equipments And Methods: Robert Peurifoy, Clifford J. Schexnayder, Aviad Shapira and Robert Schmitt.

B. E. First Semester (C. B. S.)

Engineering Graphics – I (Theory)

(BESI - 6T)

Course Outcome

On successful completion of course, student will be able to

i. Understand the basics of projection, and apply it for projecting points and line.

ii. Understand various engineering curves and will be able to trace the same.

iii. Apply the basics of projection, and solve problems on projection of planes.

iv. Apply the basics of projection, and solve problems on projection of solids, develop solid models.

v. Develop engineered drawing from solid object will be developed.

vi. Create 3D drawing will be developed and will be able to communicate more effectively.

Syllabus

Unit – I (08 Hrs)

Introduction to Engg. Drawing & Curves used in Engineering Practice

Introduction , Use of various drawing instruments, lettering, Layout of drawing sheets, sizes of drawing sheets, different types of lines used in drawing practice, Dimensioning – linear, angular, aligned system, unidirectional system, parallel dimensioning, chain dimensioning, location dimension and size dimension. Introduction to scales & scale factor (RF).

Conic sections - Ellipse, Parabola, Hyperbola, (No Directrix – Focus Method), Cycloid, Involute & Archimedean Spiral.

Basics of Orthographic Projections

Basic principles of orthographic projection, reference planes, concepts of four quadrants, methods of orthographic projections – First angle projections, Third angle projections, conventions used to represent methods of orthographic projection.

Projections of Points and Lines

Projections of points in all possible positions w.r.t. reference planes, projections of lines when it is perpendicular to one of the reference planes, when line is inclined to one & parallel to other reference plane, lines inclined to both reference planes. (Lines in First Quadrant Only), simple problems on straight lines.

Unit – II (08 Hrs)

Projections of Planes

Projection of planes when it is parallel to one of the reference planes, lying in reference plane, when it is perpendicular to one & inclined to other reference plane, when it is inclined to both reference planes. Use of Auxiliary Plane method for solving the problems.

Projections of Solids

Projections of solids when axis is perpendicular to one of the reference planes, when axis is inclined to one & parallel to other reference plane, when axis is inclined to both the reference planes, projections of cube, right regular prisms, right regular pyramids, right circular cylinder, right circular cone, tetrahedron.

Unit – III (07 Hrs)

Orthographic Projections

Conversion of pictorial view into orthographic views.

Unit – IV (07 Hrs)

Isometric Projections

Definition of Isometric view/projection, Isometric scale to draw Isometric projection, Non – Isometric lines, construction of Isometric view from given orthographic views and to construct Isometric view of combined two simple solids (axes vertical & coinciding) such as Cube, Pyramid, Prism, Cone, Cylinder & Sphere.

(Note – Only First Angle Method of Projections Should be used)

Text Books:

1. N.D. Bhatt: Elementary Engineering Drawing, Charotor Publishing house, Anand, India.
2. A. R. Bapat: Engineering Graphics, Allied Publishers, New Delhi
3. D. N. Johle: Engineering Drawing, Tata Mcgraw - hill Publishing Co. Ltd.
4. M.B. Shah: B.C. Rana, Engineering Drawing, Pearson

5. Pakhatkar: Engg. Drawing, Nirali Prakashan.
6. P J. Shah: Text Book of Engineering Drawing, S Chand & Publications

Reference Books:

1. P.S. Gill: Engineering Graphics.
2. Luzadder Warren J, Duff John: Fundamentals of Engineering Drawing, PHI Publications
3. N.D. Bhatt: Machine Drawing, Charotor Publishing house, Anand, India.

Engineering Graphics – I (Practical)

(BESI – 6P)

SIX A2 (594X420mm) (Half imperial) size drawing sheets as detailed below:

Sheet No. 1: Curves

To draw any four curves mentioned in the syllabus.

Sheet No. 2: Projection of Lines (Minimum four problems)

Sheet No. 3: Projection of Planes (Minimum four problems)

Sheet No. 4: Projections of solids (Minimum four problems)

Sheet No. 5: Orthographic Views

To draw orthographic views from given pictorial view (Minimum four problems. Two of which should be free hand sketching)

Sheet No. 6: Isometric Views/Projection

Two problems each on Isometric views & Isometric projections.

Text Books:

1. N.D. Bhatt: Elementary Engineering Drawing, Charotor Publishing house, Anand, India.
2. A. R. Bapat: Engineering Graphics, Allied Publishers, New Delhi
3. D. N. Johle: Engineering Drawing, Tata Mcgraw - hill Publishing Co. Ltd.
4. M.B. Shah: B.C. Rana, Engineering Drawing, Pearson
5. Pakhatkar: Engg. Drawing, Nirali Prakashan.
6. P J. Shah: Text Book of Engineering Drawing, S Chand & Publications.

Reference Books:

1. P.S. Gill: Engineering Graphics.
2. Luzadder Warren J, Duff John: Fundamentals of Engineering Drawing, PHI Publications
3. N.D. Bhatt: Machine Drawing, Charotor Publishing house, Anand, India.

B. E. First Semester (C.B.S.)

Communication Skill

(BESI-7)

Course Outcomes

By the end of Communication Skills course, students will be able to

i. Remove fear and hesitation in speaking English language.
ii. Communicate effectively.
iii. Know the importance of body language in their day to day life.
iv. Enhance spoken skills through various performance base activities.

List of Practicals

Sr. No.	Name of the practical	Activity to be taken	Medium of practical
1	Barrier To Communication	1. intro to various kind of barriers 2. Activity class on semantic barriers	PPT based, Activity Based
2	Reading Skills	1. Skimming, Scanning & Gist reading 2. Comprehending passages	PPT based, Activity Based
3	Development Of Word Power	1. IPA, Pronunciation techniques 2. Often wrongly pronounced words 3. Word Power, Homophones, Synonyms / antonyms	Software based PPT based, Activity Based
4	Non Verbal Communication	1. Kinesics in com/ interviews 2. Activities /role play	Software based PPT based, Activity Based
5	Speaking Skill	1. Intro of effective way of speaking 2. oral presentations Extempore / Debate / JAM	PPT based, Activity Based
6	Group Discussion	1. GD rules 2. GD of groups in 6	Software based PPT based, Activity Based
7	Interview questions	1. Various types of Interviews 2. Resume making 3. Mock Interviews(one to one)	Software based PPT based, Activity Based
8	Use Of Figurative Language	1. Intro phrases / Idioms/ Proverbs 2. Idioms related to Color/ Number/ Animals/ Part of body/ Misc.	PPT based, Activity Based
9	Listening Skill	Listening Barriers	PPT based, Activity Based

10	Presentation Skill	1. Preparing visual aids/ PPTs 2. Writing references	PPT based, Activity Based

Books Recommended:

1. Public Speaking and Influencing Men in Business: Dale Carnegie.
2. Professional Communication Skills: Bhatia and Sheikh.
3. Business Communication: K. K. Sinha.
4. Communication Skills: Dr. P. Prasad.
5. Technical Communication: Raman and Sharma.
6. High School Grammar and Composition: Wren and Martin.
7. Modern English Grammar Usage and Composition: N. Krishnaswami.

B. E. First Semester (C.B.S.)

Computational Skills
(BESI-8)

Practical Slot – 1:
Fundamentals of Computers and Operating System
Contents: 1) To demonstrate the internal structure of Computer, its assembly, use of each I/O device and ports.
2) To demonstrate the use of System Software like: Windows Operating System, Linux Operating System.
3) To explain about "C" language Complier options and C++ language overview.

Practical Slot – 2:
Fundamentals of "C" language
Contents:
1) To demonstrate all types of operators (Arithmetic, Logical and Relational) of "C" language.
2) To demonstrate different data types in "C" language.
3) To demonstrate the use of "printf" and "scanf" with all possible options.

Practical Slot – 3:
Fundamentals of Decision Control Structures
Contents:
1) To demonstrate the use of if-else structure, nested if structure.
2) To demonstrate the use of Conditional operators (? Operator).
3) To demonstrate the use of Switch.Case construct.

Practical Slot – 4:
Fundamentals of Loop Control Structures
Contents:
1) To demonstrate the use of "while" control structure.
2) To demonstrate the use of "do..while" control structure.
3) To demonstrate the use of "for" control structure.
4) To demonstrate the use of "break" and "continue" construct.

Practical Slot – 5 and 6:
Fundamentals of One Dimensional Arrays
Contents:
1) To demonstrate the creation of array, addition of an element, deletion of an element and displaying the elements from one dimensional array.
2) To demonstrate the implementation of bubble sort, selection sort and insertion sort.
3) To demonstrate the implementation of linear search and binary search.

Practical Slot – 7:
Fundamentals of Two Dimensional Arrays
Contents:
1) To demonstrate the matrix manipulation operations like addition, multiplication.

2) To demonstrate the operations on row and columns of two dimensional matrix.

Practical Slot – 8:
Fundamentals of Pointers
Contents:
1) To demonstrate the pointer declaration and its use.
2) To demonstrate the implementation of pointer on array.
3) To demonstrate the creation of dynamic arrays using pointer.

Practical Slot – 9:
Fundamentals of Strings
Contents:
1) To demonstrate the basic operations on string like "length", "copy", "reverse", "truncate".
2) To demonstrate the implementation of two dimensional array of characters.

Practical Slot – 10:
Fundamentals of Functions
Contents:
1) To demonstrate the implementation of functions.
2) To demonstrate the call by value parameter passing method.
3) To demonstrate the call by reference parameter passing method.

Practical Slot – 11:
Fundamentals of Functions
Contents:
1) To demonstrate the implementation of recursive function.
2) To demonstrate the use of library function (mathematical and string).
Method to conduct the practicals:
Out of the two hours allotted:
The faculty member will teach the basic concepts of practical to the students for 30 minutes.

The next 30 minutes will be on how to implement the problem definition of the practical, i.e., algorithm to implement the problem definition.

The next 1 hour, the students will implement the practical and execute it on computers.

For example:
Fundamentals of Loop Control Structures
Contents:
To demonstrate the use of "while" control structure.

To demonstrate the use of "do..while" control structure.

To demonstrate the use of "for" control structure.

To demonstrate the use of "break" and "continue" construct.

Cover the concepts of:
While loop, do..while loop, for loop and break & continue statement.

Explain the implementation of control structure on practical and LCD projector to students.

Give one problem definition containing all the concepts of practical and allow students to implement and execute on the computers.

Books Recommended:

1. Herbert Schildt - C Complete Reference (Tata-McGraw Hill)

2. Byron Gottfried," Programming with C", Schaum;s Outline Series .

3. R Venugopal & S R Prasad. "Mastering C" Tata-McGraw Hill-2207.