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AIM:
To help students specialising in the field of Engineering and Technology develop their proficiency in oral and written communication in Technical English.

OBJECTIVES:
- To enable students improve their vocabulary and employ the words appropriately in different academic and professional contexts.
- To make students comprehend classroom lectures and technically oriented passages.
- To enable students develop suitable reading strategies that could be adopted while reading science related texts.
- To enable students acquire the ability to speak effectively in English in real life situations and work-related situations.
- To train students in academic and professional writing.

UNIT I
Vocabulary - using words in context - use of suffixes to form nouns from verbs and adjectives – adjectives, adverbs - matching words with meanings - Active and passive voices – tenses - simple present, present continuous - comparative adjectives – adverbial forms - Reading text: skimming for general information - specific details - note making - cloze reading – Listening and transferring of information from text to graphic forms - bar charts, flow-charts - Paragraph writing - descriptions using descriptive words and phrases - organising information - Role play - conversational techniques – discussions - oral reporting.

UNIT II
Vocabulary items - words with prefixes (“multi-“, “under-“) - Asking and answering questions, error correction - spelling and punctuation - Reading Comprehension - scanning for information – inferring meaning from context - Listening and guided note-taking - paragraph writing - using notes – giving suitable headings / subheadings for paragraphs – Comparing and contrasting using expressions of comparison - Discussion using creative ideas

UNIT III
Compound nouns - negative prefixes – antonyms – Use of modal verbs – making sentences using phrases – tenses – simple past and present perfect - Reading and guessing meanings in context - Listening and note taking - Channel conversion from text to chart - Writing comparisons - making recommendations - coherence using discourse markers - Discussion - role-play (explaining and convincing)

UNIT IV
Expanding nominal compounds – words with multiple meanings – Error correction - prepositions - use of the prefix “trans-“ - compound adjectives - modal verbs to express probability - simple past and present prefect - Reading – prediction of content - understanding advertisements - scanning the text and comprehension check - Listening
for details - Writing definitions – expression of use and purpose - Role-play – discussion - speculating about the future

UNIT V
9+3
Formation of nouns, verbs and adjectives from root words – some useful phrases and expressions - cloze exercises - 'If' conditional clauses – gerunds (verbal nouns) - Reading for comprehension - intensive reading - Accuracy in listening – listening to discussion on specific issues - Group discussion - role-play (stating, discussing problems and proposing solutions) - Planning a tour - Writing an itinerary - Writing formal letters - letter to the editor

LECTURE – 45  TUTORIAL – 15  TOTAL – 60 PERIODS

TEXT BOOKS

REFERENCES
3. Website: www.uefap.co.uk

MA 9111  MATHEMATICS – I  L  T  P  C
(Common to all branches of B.E. / B.Tech. Programmes) 3  1  0  4

AIM:
To make available the basic concepts of engineering mathematics, to prepare the student for new concepts to be introduced in the subsequent semesters and to provide the necessary mathematical skills that are needed in modeling physical processes by an engineer.

OBJECTIVES:
• To develop the use of matrix algebra techniques this is needed by engineers for practical applications.
• To make the student knowledgeable in the area of infinite series and their convergence so that he/ she will be familiar with limitations of using infinite series approximations for solutions arising in mathematical modeling
• To familiarize the student with functions of several variables which is needed in many branches of engineering
• To introduce the concepts of improper integrals, Gamma, Beta and Error functions which are needed in engineering applications
• To acquaint the student with mathematical tools needed in evaluating multiple integrals and their usage
UNIT I  MATRICES  9+3

UNIT II  INFINITE SERIES  9+3

UNIT III  FUNCTIONS OF SEVERAL VARIABLES  9+3

UNIT IV  IMPROPER INTEGRALS  9+3

UNIT V  MULTIPLE INTEGRALS  9+3

L: 45, T: 15, TOTAL : 60 PERIODS

TEXT BOOKS

REFERENCES
OBJECTIVE:
To introduce the basic physics concepts relevant to different branches of Engineering and Technology

UNIT I PROPERTIES OF MATTER
9

UNIT II ACOUSTICS AND ULTRASONICS
9

UNIT III THERMAL PHYSICS
9

UNIT IV APPLIED OPTICS
9

UNIT V SOLID STATE PHYSICS
9
Nature of bonding – growth of single crystals (qualitative) - crystal systems - crystal planes and directions – expressions for interplanar distance – coordination number and packing factor for simple structures: SC, BCC, FCC and HCP – structure and significance of NaCl, ZnS, diamond and graphite – crystal imperfections: point defects, dislocations and stacking faults.

TOTAL : 45 PERIODS
TEXT BOOKS:

REFERENCES:

CY9111 ENGINEERING CHEMISTRY  L  T  P  C
(Common to all branches of Engineering and Technology)  3  0  0  3

AIM:
To gain a sound knowledge of thermodynamics, phase rule, surface chemistry and catalysis, basic organic reaction mechanisms and principles and applications of spectroscopy and nanochemistry.

OBJECTIVES:
To make the student conversant with the
- Applications of second law of thermodynamics.
- Phase rule and various types of alloys
- Surface chemistry and its importance in adsorption and catalysis.
- Basic principles in organic reaction mechanisms and principles and applications of spectroscopy
- Nanochemistry and its applications

UNIT I THERMODYNAMICS  9

UNIT II PHASE RULE  9
UNIT III SURFACE CHEMISTRY AND CATALYSIS

UNIT IV ORGANIC REACTIONS AND SPECTROSCOPY

UNIT V NANOCHEMISTRY

TOTAL : 45 PERIODS

TEXT BOOKS:

REFERENCES

GE 9111 ENGINEERING GRAPHICS (Common to All branches of B.E. / B.Tech. Programmes) 2 0 3 4

OBJECTIVES:
To develop in students the graphic skills that would enable them to communicate the concepts, ideas and design of engineering products
To provide an exposure to the national/international standards related to technical drawings
INTRODUCTION
Importance of graphics in engineering applications – use of drafting instruments – BIS specifications and conventions – size, layout and folding of drawing sheets – lettering and dimensioning

UNIT I FREE HAND SKETCHING OF ENGG OBJECTS AND CONSTRUCTION OF PLANE CURVE 3+9=12
Pictorial representation of engineering objects – representation of three dimensional objects in two dimensional media – need for multiple views – developing visualization skills through free hand sketching of three dimensional objects.

Polygons & curves used in engineering practice– methods of construction– construction of ellipse, parabola and hyperbola by eccentricity method – Cycloidal and involute curves- construction - drawing of tangents to the above curves.

UNIT II ORTHOGRAPHIC PROJECTION: PROJECTION OF POINTS, LINES AND PLANE SURFACES 6+9=15
General principles of orthographic projection – first angle projection – layout of views – projections of points, straight lines located in the first quadrant – determination of true lengths of lines and their inclinations to the planes of projection – traces – projection of polygonal surfaces and circular lamina inclined to both the planes of projection

UNIT-III ORTHOGRAPHIC PROJECTION: PROJECTION OF SOLIDS AND SECTIONS OF SOLIDS 6+9=15
Projection of simple solids like prism, pyramid, cylinder and cone when the axis is inclined to one plane of projection – change of position & auxiliary projection methods– sectioning of above solids in simple vertical positions by cutting plane inclined to one reference plane and perpendicular to the other and above solids in inclined position with cutting planes parallel to one reference plane – true shapes of sections

UNIT IV DEVELOPMENT OF SURFACES AND INTERSECTION OF SOLIDS 6+9=15
Need for development of surfaces – development of lateral surfaces of simple and truncated solids – prisms, pyramids, cylinders and cones – development of lateral surfaces of the above solids with square and circular cutouts perpendicular to their axes. Intersection of solids and curves of intersection – prism with cylinder, cylinder & cylinder, cone & cylinder with normal intersection of axes and with no offset.

UNIT V ISOMETRIC AND PERSPECTIVE PROJECTIONS 4+9=13
Principles of isometric projection – isometric scale – isometric projections of simple solids, truncated prisms, pyramids, cylinders and cones – principles of perspective projections – projection of prisms, pyramids and cylinders by visual ray and vanishing point methods.

COMPUTER AIDED DRAFTING (DEMONSTRATION ONLY) 3
Introduction to computer aided drafting software packages and demonstration of their use.

L=30   P=45 TOTAL: 75 PERIODS
TEXT BOOKS


REFERENCES


Codes from Bureau of Indian Standards

2. IS 9609 (Parts 0 & 1) - 2001: Technical Products Documentation – Lettering
3. IS 10714 (Part 20) - 2001 & SP 46 - 2003: Lines for Technical Drawings
4. IS 11669-1986 & SP 46-2003: Dimensioning of Technical Drawings
   IS 15021 (Parts 1 to 4) - 2001: Technical Drawings - Projection Methods

Special points applicable to University Examinations on Engineering Graphics:

1. There will be five questions one from each unit covering all units of the syllabus
2. All questions will carry equal marks of 20 each making a total of 100
3. Answer paper shall consist of drawing sheets of A3 size only. The students will be permitted to use appropriate scale to fit solutions within A3 size
4. The examination will be conducted in appropriate sessions on the same day

GE 9112 FUNDAMENTALS OF COMPUTING
(Common to all branches of B.E. / B.Tech. Programmes) 3 0 0 3

AIM:
To introduce the basics of computing and the fundamentals of C programming.

OBJECTIVES:

- To introduce the fundamentals of computing systems.
- To introduce the concepts of internet and WWW.
- To teach programming in C.

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V
Pointers – Dynamic memory allocation – linked list - Applications

TOTAL: 45 PERIODS

TEXT BOOKS

REFERENCES

PH 9112 PHYSICS LABORATORY
(Common to ALL Branches of B.E. / B.Tech. Programmes) 0 0 2 1

1. Torsional Pendulum- Determination of rigidity modulus of wire and moment of Inertia of disc.
2. Non-uniform bending - Determination of Young’s modulus.
3. Lees’ disc- Determination of thermal conductivity of a bad conductor.
4. Potentiometer - Determination of thermo e.m.f of thermocouple
5. Air wedge- Determination of thickness of a thin sheet of paper.
6. i. Optical fibre - Determination of Numerical Aperture and acceptance angle
   ii. Compact disc - Determination of width of the groove using laser.
7. Acoustic grating - Determination of velocity of ultrasonic waves in liquids.
8. Post office box - Determination of Band gap
9. Spectrometer - Determination of wavelength using grating
10. Viscosity of liquid - Determination of co-efficient of viscosity of a liquid by Poiseuille’s flow.

TOTAL: 30 PERIODS

CY9112 CHEMISTRY LABORATORY
(Common to all branches of Engineering and Technology) 0 0 2 1

I. WEIGHING AND PREPARATION OF STANDARD SOLUTIONS
   i) Preparation of molar and normal solutions of the following substances oxalic acid, sodium carbonate, sodium hydroxide, and hydrochloric acid.
   ii) Preparation of buffer solutions: borate buffer, phosphate buffer using Henderson equation.

2. WATER ANALYSIS
   i) Determination of total hardness, temporary & permanent hardness of water by EDTA method.
   ii) Determination of DO content by Winkler’s method.
   iii) Determination of alkalinity in a water sample.
   iv) Determination of chloride content of water sample by argentometric method.

3. PH-METRY
   To find out the strength of given hydrochloric acid by sodium hydroxide.

4. CONDUCTOMETRY
   i) Conductometric titration of mixture of acids
   ii) Conductometric precipitation titration using BaCl₂- Na₂SO₄

5. POTENTIOMETRY
   i) Redox titration – Iron Vs. dichromate

6. SPECTROPHOTOMETRY
   i) To determine λ max of a colored solution such as potassium permanganate.
   ii) To determine the iron content of an unknown solution (1,10- phenanthroline/thiocyanate method)

7. FLAME PHOTOMETRY
   i) To determine sodium and potassium in water.

8. VISCOMETRY
   i) Determination of molecular weight of a polymer

9. WATER POLLUTION
   i) COD analysis of a waste water by dichromate method.
10. **KINETICS**
   i) Determination of reaction rate constant of acid catalyzed hydrolysis of ester.

11. **ADSORPTION**
   i) Adsorption of acetic acid on activated charcoal.

**TOTAL: 30 PERIODS**

**REFERENCE BOOKS**


**GE 9113 ENGINEERING PRACTICES LABORATORY**

**OBJECTIVE**
To provide exposure to the students with hands-on experience on various basic engineering practices in Civil, Mechanical, Electrical and Electronics Engineering.

**GROUP – A (CIVIL & ELECTRICAL)**

**1. CIVIL ENGINEERING PRACTICE**

**Plumbing**
Basic pipe connections involving the fittings like valves, taps, coupling, unions, reducers, elbows and other components used in household fittings. Preparation of plumbing line sketches.

Laying pipe connection to the suction side of a pump – inlet.

Laying pipe connection to the delivery side of a pump – outlet.

Practice in mixed pipe connections: Metal, plastic and flexible pipes used in household appliances.

**Wood Work**
Sawing, planning and making common joints: T-Joint, Mortise and Tennon joint, Dovetail joint.

**Study**
Study of joints in door panels, wooden furniture
Study of common industrial trusses using models.

2. **ELECTRICAL ENGINEERING PRACTICE**

Basic household wiring using switches, fuse, indicator – lamp etc.,
Preparation of wiring diagrams
Stair case light wiring
Tube – light wiring
Study of iron-box, fan with regulator, emergency lamp

**GROUP – B (MECHANICAL AND ELECTRONICS)**

3. **MECHANICAL ENGINEERING PRACTICE**

**Welding**
Arc welding of butt joints, lap joints, tee joints
Gas welding Practice.

**Basic Machining**
Simple turning, drilling and tapping operations.
Machine assembly Practice.
Study and assembling the following:
Centrifugal pump, mixies and air conditioners.
Demonstration on
(a) Smithy operations like the production of hexagonal bolt.
(b) Foundry operation like mould preparation for grooved pulley.

4. **ELECTRONIC ENGINEERING PRACTICE**

Soldering simple electronic circuits and checking continuity.
Assembling electronic components on a small PCB and testing.
Study of Telephone, FM radio, low-voltage power supplies.

TOTAL: 45 PERIODS

GE 9114 COMPUTER PRACTICE LABORATORY L T P C
(Common to all branches of B.E. / B.Tech. Programmes) 0 0 3 2

AIM:
The aim is to teach the use of computer applications related to office automation and to teach implementation of C programs.

OBJECTIVES:

- To introduce office automation software packages.
- To teach the fundamentals in C programming.

1. Simple OS commands and simple editors for file operations.
2. Word processors for more complex operations, like formatting documents, creating tables and so on.
3. Simple data base packages for creating and manipulating databases.
4. Spread sheet packages for data preparation and analysis.
5. Preparation of reports involving mathematical functions (Income Tax Statement, Mark sheets, Payroll etc.,)
6. C Programs using one dimensional arrays.
7. C Programs using multi-dimensional arrays and pointer data types.
8. Programs using structures, nested structures and union.
10. Programs for passing aggregate data types as parameters between functions.
11. Programs for dynamic memory allocation / deallocation.
12. Programs for self-referential structure – Implementing linked list.

TOTAL: 45 PERIODS
AIM:
To help students specialising in the field of Engineering and Technology develop their proficiency in oral and written communication in Technical English.

OBJECTIVES:

- To enable students develop their critical thinking skills.
- To enable students develop higher order reading skills such as interpreting, evaluating and analysing.
- To enable students develop their active listening skills.
- To enable students participate successfully in Group Discussions.

UNIT I
6

UNIT II
6

UNIT III
6

UNIT IV
6
UNIT V
Identifying problems, their causes and finding solutions using case studies – creative and critical thinking – levels of thinking – thinking strategies – brainstorming - analytical reasoning skills – evaluative essay – decision making – conflict resolution

English Language Lab (30 Periods)

1. Listening: (10)
Recognising English sounds – accents - listening & answering questions - gap filling - listening & note making - listening to telephonic conversations - listening to speeches.

2. Speaking: (10)
Pronouncing words & sentences correctly - word stress - conversation practice.

3. Reading: (5)
Cloze test - Reading and answering questions - sequencing of sentences.

4. Writing: (5)
Correction of errors - Blogging.

TOTAL : 60 PERIODS

TEXTBOOK

REFERENCES
4. Website: www.englishclub.com

LAB REQUIREMENTS
1. Teacher – Console and systems for students
2. English Language Lab Software
3. Tape Recorders
AIM:

To introduce the effective mathematical tools needed for solving engineering problems and to emphasize the underlying mathematical principles in specific situations confronting practicing engineers.

OBJECTIVES:

- To make the student acquire sound knowledge of techniques in solving ordinary differential equations that model engineering problems
- To acquaint the student with the concepts of vector calculus, needed for problems in all engineering disciplines
- To develop an understanding of the standard techniques of complex variable theory so as to enable the student to apply them with confidence, in application areas such as heat conduction, elasticity, fluid dynamics and flow of electric current
- To make the student appreciate the purpose of using transforms to create a new domain in which it is easier to handle the problem that is being investigated

UNIT I DIFFERENTIAL EQUATIONS 9+3

Method of variation of parameters – Method of undetermined coefficients – Homogenous equation of Euler’s and Legendre’s type – System of Simultaneous linear differential equations with constant coefficients.

UNIT II VECTOR CALCULUS 9+3

Gradient and directional derivative – Divergence and Curl – Irrotational and Solenoidal vector fields – Line integral over a plane curve – Surface Integral and Volume Integral - Green’s, Gauss divergence and Stoke’s theorems – Verification and Application in evaluating line, surface and volume integrals.

UNIT III ANALYTIC FUNCTION 9+3

Analytic functions – Necessary and sufficient conditions for analyticity - Properties – Harmonic conjugates – Construction of analytic function - Conformal Mapping – Mapping by functions $w = z + c$, $az$, $\frac{1}{z}$, $z^2$ - Bilinear transformation.

UNIT IV COMPLEX INTEGRATION 9+3

Line Integral - Cauchy’s theorem and integral formula – Taylor’s and Laurent’s Series – Singularities – Residues – Residue theorem – Application of Residue theorem for evaluation of real integrals – Use of circular contour and semicircular contour with no pole on real axis.

UNIT V LAPLACE TRANSFORMS 9+3

Existence conditions – Transforms of elementary functions – Basic properties – Transforms of derivatives and integrals – Initial and Final value theorems – Inverse
transforms – Convolution theorem – Transform of periodic functions – Application to solution of linear ordinary differential equations with constant coefficients.

L: 45, T: 15, TOTAL : 60 PERIODS

TEXT BOOKS

REFERENCES

PH9161 PHYSICS FOR CIVIL ENGINEERING

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OBJECTIVE:
To teach the essential principles of physics for civil engineering applications such as acoustical, thermal, air conditioning etc. and also to introduce importance of new engineering materials.

UNIT I THERMAL APPLICATIONS

UNIT II VENTILATION AND REFRIGERATION

UNIT III ACOUSTICS AND LIGHTING DESIGNS

UNIT IV NEW ENGINEERING MATERIALS
Composites – Definition and Classification – Fibre reinforced plastics (FRP) and fiber reinforced metals (FRM) – Metallic glasses – Shape memory alloys – Ceramics – Classification – Crystalline – Non Crystalline – Bonded ceramics, Manufacturing methods – Slip casting – Isostatic pressing – Gas pressure bonding – Properties –
thermal, mechanical, electrical and chemical ceramic fibres – ferroelectric and ferromagnetic ceramics – High Aluminum ceramics.

UNIT V HAZARDS
Seismology and Seismic waves – Earthquake ground motion – Basic concepts and estimation techniques – site effects – Probabilistic and deterministic Seismic hazard analysis – Cyclone and flood hazards – Fire hazards and fire protection, fire-proofing of materials, fire safety regulations and fire fighting equipment – Prevention and safety measures.

TOTAL: 45 PERIODS

TEXT BOOKS:

REFERENCES:
4. P.M. Shearer, Introduction to Seismology, Cambridge University Press, 1999

CY9161 CHEMISTRY FOR CIVIL ENGINEERING L T P C
(Common to Civil, Geoinformatics and Agriculture & Irrigation Engineering) 3 0 0 3

AIM
• To impart knowledge on the Applied Chemistry topics important in Civil Engineering Practice.

OBJECTIVES

• The students should be conversant with
• Treatment of water for domestic and industrial purpose
• The formation of polymers and their compounding into different end-use products
• Types and mechanism of corrosion and control measures
• The chemical nature of building materials and composites
• Chemistry of adhesives and their applications.

UNIT I WATER TREATMENT 8
Disadvantages of hard water in industries – conditioning methods – external treatment methods – zeolite and ion exchange methods – internal treatment (colloidal, phosphate,

UNIT II POLYMER CHEMISTRY

UNIT III CORROSION AND CORROSION INHIBITION

UNIT IV CHEMISTRY OF BUILDING MATERIALS

UNIT V ADHESIVES
Definition – adhesive action – development of adhesive strength – physical and chemical factors influencing adhesive action – bonding process of adhesives – adhesives for building & construction: animal glues, casein glues, phenol formaldehyde resins, polyurethane, epoxy resins, urea formaldehyde

TOTAL : 45 PERIODS

TEXT BOOKS:
REFERENCE BOOKS:


GE 9151  ENGINEERING MECHANICS  L T P C
(Common to Civil, Geoinformatics and Agriculture & Irrigation Engineering)  3 1 0 4

OBJECTIVE:
At the end of this course the student should be able to understand the vectorial and scalar representation of forces and moments, static equilibrium of particles and rigid bodies both in two dimensions and also in three dimensions. Further, the student should understand the principle of work and energy. The student should be able to comprehend the effect of friction on equilibrium. The student should be able to understand the laws of motion, the kinematics of motion and the interrelationship. The student should also be able to write the dynamic equilibrium equation. All these should be achieved both conceptually and through solved examples.

UNIT I  BASICS & STATICS  12

UNIT II  EQUILIBRIUM OF RIGID BODIES  12
Free body diagram – Types of supports and their reactions – requirements of stable equilibrium – Moments and Couples – Moment of a force about a point and about an axis – Vectorial representation of moments and couples – Scalar components of a moment – Varignon’s theorem - Equilibrium of Rigid bodies in two dimensions – Equilibrium of Rigid bodies in three dimensions – Examples

UNIT III  PROPERTIES OF SURFACES AND SOLIDS  12

UNIT IV  DYNAMICS OF PARTICLES  12
UNIT V  CONTACT FRICTION AND ELEMENTS OF RIGID BODY DYNAMICS
L: 45+T=15  TOTAL : 60 PERIODS

TEXT BOOK

REFERENCES

CE 9152  CONSTRUCTION MATERIALS  L T P C
(Common to Civil, Geoinformatics and Agriculture & Irrigation Engineering)  3 0 0 3

UNIT I  STONES – BRICKS – CONCRETE BLOCKS  9

UNIT II  LIME – CEMENT – AGGREGATES - MORTAR  9
UNIT III  CONCRETE  9

UNIT IV  TIMBER AND OTHER MATERIALS  9

UNIT V  MODERN MATERIALS  9

TOTAL: 45 PERIODS

TEXT BOOKS
3. M. S. Shetty, Concrete Technology (Theory and Practice), S. Chand & Company

REFERENCE
1. Relevant Indian Standards

EE 91 61  BASIC ELECTRICAL AND ELECTRONICS ENGINEERING  L T P C
3 0 0 3

UNIT I  ELECTRICAL CIRCUITS  9

UNIT II  ELECTRICAL MACHINES  15
Principles of operation and characteristics of DC machines. Transformers (single phase and three phase) – Synchronous machines- 3phase and single phase Induction motors – (op.principles)

UNIT III  SEMICONDUCTORS  5
Classification of solids as conductors and semiconductors – Intrinsic, Extrinsic semiconductors – P type and N type semiconductors-junction diode- Zener effect-Zener diode-VI Characteristics of junction and Zener diodes.
UNIT IV TRANSISTORS
Bipolar Junction Transistor – CB, CE, CC – Configurations- Simple treatment of characteristics and biasing. Elementary treatment of FET, MOSFET, UJT, DIAC and TRIAC.

UNIT V TRANSUDCERS AND COMMUNICATION SYSTEM

TOTAL: 45 PERIODS

TEXT BOOKS

REFERENCES

GE 9161 UNIX PROGRAMMING LAB

AIM:
The aim is to introduce working in UNIX environment.

OBJECTIVES:
- To introduce the basic commands in UNIX.
- To teach UNIX shell programming.
- To introduce programming in C with UNIX system calls.

1. Basic Unix commands
2. Simple editors for file operations.
3. Filters-Grep, sed, awk
4. Simple shell programming.
5. Shell programming using complex control structures.
6. C Programs using file system related system calls.
7. C Programs using process related system calls.
8. Programs for inter process communication using pipes, FIFOs.
9. Programs using signals.
10. Programs using shared memory.

TOTAL: 60 PERIODS

TEXT BOOK


CE 91 53 CONSTRUCTION MATERIALS LABORATORY

UNIT I TEST ON STONES
Texture - Density - Compressive Strength - Modulus of Rupture - Abrasion Resistance - Water Absorption

UNIT II TEST ON BRICS
Compressive Strength – Water Absorption – Efflorescence

UNIT III TEST ON CEMENT
Specific gravity – Soundness – Consistency and Setting Times – Vicat – Le Chatelier’s and Blain’s apparatus

UNIT IV TEST ON AGGREGATES
Grading of aggregates – Finess modulus - Loose and compacted bulk density – Specific gravity – Crushing Strength – Impact Resistance – Abrasion – Flakiness Index and Elongation Index

UNIT V TEST ON CONCRETE
Slump cone – Flow table – Cube and cylinder strength – Modulus of Rupture, Ve bee apparatus, Compaction factor

TOTAL: 45 PERIODS

REFERENCE
1. Relevant IS Codes