FOURTH SEMESTER

CE – 430	Concrete Technology
CE – 431	Soil and Foundation Engineering CE –
432	Surveying – II
CE – 433	Quantity Surveying and valuation CE –
453	Field work / Exposure
CE – 401	English and Communication Skills – II

CE 430 CONCRETE TECHNOLOGY

	L	T	P
Pds/week	4	-	2

RATIONALE

Diploma holders in Civil Engineering are supposed to supervise concreting operations involving proportioning, mixing, transporting, placing, compacting, finishing and curing of concrete. To perform above functions, it is essential to impart knowledge and skills regarding ingredients of concrete and their properties; properties of concrete in plastic and hardened stage, water cement ratio and workability; proportioning for ordinary concrete; concreting operations and joints in concrete.

DETAILED CONTENTS
THEORY

11. Introduction: Definition of concrete, uses of concrete in comparison to other building materials. (5%)

2. Ingredients of Concrete: (10%)

Cement: physical properties of cement; different types of cement as per IS Codes

Aggregates:

Classification of aggregates according to size and shape

Characteristics of aggregates: Particle size and shape, surface texture, specific gravity of aggregate; bulk density, water absorption, surface moisture, bulking of sand, deleterious materials, soundness

Grading of aggregates: coarse aggregate, fine aggregate; All-in- aggregate; fineness modulus; interpretation of grading charts

Water: Quality requirements as per IS:456-2000

3. Water Cement Ratio: (10%)

Hydration of cement, principle of water-cement ratio, Duff Abram's Water-cement ratio law: Limitations of water-cement ratio law and its effects on strength of concrete

4. Workability: (15%)

Workability factors affecting workability, Measurement of workability:

slump test, compacting factor and Vee Bee consistometer; Recommended slumps for placement in various conditions as per IS:456-2000/SP-23

5. Properties of Concrete: (15%)

Properties in plastic state: Workability, Segregation, Bleeding and Harshness

Properties in hardened state: Strength, Durability, Impermeability, Dimensional changes;

6. Proportioning for Normal Concrete: (5%)

Objectives of mix design, introduction to various grades as per IS:456-2000; proportioning for nominal mix design as prescribed by IS 456-2000

Adjustment on site for: Bulking of fine aggregate, water absorption of aggregate, workability

Difference between nominal and controlled concrete

6.4. Introduction to IS-10262-2009-Code for controlled mix design

7. Introduction to Admixtures (chemicals and minerals) for improving performance of concrete (5%)

8. Special Concretes (only features) (5%)

Concreting under special conditions, difficulties and precautions before, during and after concreting
Cold weather concreting
Under water concreting
Hot weather concreting

Ready mix concrete

Fibre reinforced concrete

Polymer Concrete

Fly ash concrete

Silica fume concrete

9. Concreting Operations: (25%)

**9.1 Storing of Cement:

Storing of cement in a warehouse
Storing of cement at site
Effect of storage on strength of cement
Determination of warehouse capacity for storage of Cement

**9.2 Storing of Aggregate: Storing of aggregate at site

Batching (to be shown during site visit)

Batching of Cement
Batching of aggregate by:
Volume, using gauge box (farma) selection of proper gauge box
Weight spring balances and batching machines
Measurement of water

** 9.4 Mixing:

Hand mixing
Machine mixing - types of mixers, capacities of mixers, choosing appropriate size of mixers, operation of mixers
Maintenance and care of machines

**9.5 Transportation of concrete: Transportation of concrete using: wheel barrows, transit mixers, chutes, belt conveyors, pumps, tower crane and hoists etc.

9.6 Placement of concrete:

Checking of form work, shuttering and precautions to be taken during placement

** 9.7 Compaction:

Hand compaction

Machine compaction - types of vibrators, internal screed vibrators and form vibrators

Selection of suitable vibrators for different situations

Finishing concrete slabs - screeding, floating and trowelling

Curing:

Objectives of curing, methods of curing like ponding, membrane

curing, steam curing, chemical curing

Duration for curing and removal of form work

Jointing: Location of construction joints, treatment of construction joints, expansion joints in buildings - their importance and location

Defects in concrete: Identification of and methods of repair

10. Importance and methods of non-destructive tests (introduction only) (5%)

NOTE: ** A field visit may be planned to explain and show the relevant things

PRACTICAL EXERCISES:

i) To determine the physical properties of cement as per IS Codes
ii) To determine flakiness and elongation index of coarse aggregates
iii) To determine silt in fine aggregate
iv) Determination of specific gravity and water absorption of aggregates
v) Determination of bulk density and voids of aggregates
vi) To determine surface moisture in fine aggregate by displacement method
vii) Determination of particle size distribution of fine, coarse and all in aggregate by sieve analysis (grading of aggregate)
viii) To determine necessary adjustment for bulking of fine aggregate
ix) To determine workability by slump test:
x) Compaction factor test for workability
xi) Non destructive test on concrete by:
    a) Rebound Hammer Test
    b) Ultrasonic Pulse Velocity Test
xii) Tests for compressive strength of concrete cubes for different grades of concrete.

INSTRUCTIONAL STRATEGY

This subject is of practical nature. While imparting instructions, teachers are expected to organize demonstrations and field visits to show various stages of concreting operations. While working in the laboratory, efforts should be made to provide extensive practical training to students so as to make them confident in the preparation and testing of concrete. Teachers should also organize viva examination so as to develop understanding about concepts and principles involved. The experiments may be demonstrated to students through video programmes developed in the field of 'concrete technology' by NITTTR, Chandigarh.

RECOMMENDED BOOKS

i) Kulkarni, PD; Ghosh, RK and Phull, YR; "Text Book of Concrete Technology"; Oxford and IBH Publishing Co. New Delhi

ii) Krishnamurthy, KT; Rao, A Kasundra and Khandekar, AA; "Concrete

Technology"; Dhanpat Rai and Sons, Delhi,

iii) Gupta BL and Gupta Amit; "Text Book of Concrete Technology"; Standard Publishers Distributors, Delhi.

iv) Varshney, RS;"Concrete Technology";, Oxford and IBH Publishing, New Delhi

v) Neville, AM; "Properties of Concrete", Pitman (ELBS Edition available), London

vi) Orchard; "Concrete Technology"; Vol I, II, and III

vii) Handoo, BL; Puri, LD and Mahajan Sanjay "Concrete Technology"; Satya Prakashan, New Delhi,

viii) Sood, Hemant, Mittal LN and Kulkarni PD; "Laboratory Manual on Concrete Technology", CBS Publishers, New Delhi, 2002

ix) Vazirani, VN; and Chandola, SP; "Concrete Technology"; Khanna Publishers, Delhi,

x) Gambhir, ML; "Concrete Technology";, MacMillan India Ltd., New Delhi

xi) Siddique, R., "Special Structural Concretes", , Galgotia Publishers Pvt. Ltd. Delhi

xii) Birinder Singh, "Concrete Technology", Kaption Publications, Ludhiana,

(xiii) Module on 'Special Concretes by Dr Hemant Sood , NITTTR Chandigarh

(xiv) Concrete Technology by P Dayaratman

(xv) Video programme on different experiments in 'Concrete Technology' developed by NITTTR, Chandigarh.

CE431 SOIL AND FOUNDATION ENGINEERING

	L	T	P
Pds/week	4	-	2

RATIONALE

Civil Engineering technicians are required to supervise the construction of roads and pavements, dams, embankments, and other Civil Engineering structures. As such the knowledge of basic soil engineering is the prerequisite for technicians for effective and sufficient performance of his duties. This necessitates the introduction of soil Engineering subject in the curriculum for Diploma Course in Civil Engineering.

The subject covers only such topics as will enable the technicians to identify and classify the different types of soils, their selection and proper use in the field of engineering construction.

NOTE: Weightage of each topic for external examination is given in the brackets

DETAILED CONTENTS

1. Introduction: (5 %)

Importance of soil studies in Civil Engineering

Geological origin of soils with special reference to soil profiles in India: Residual and transported soil, Alluvial deposits, lake deposits, dunes and loess, glacial deposits, conditions in which above deposits are formed and their engineering characteristics.

2. Physical Properties of Soils: (10%)

Phase diagram for soil

Definitions and meaning of void ratio, porosity, degree of saturation, water content, specific gravity of soil grains, unit weight, dry unit weight

Simple numerical problems with the help of phase diagrams

3. Soils Classification and Identification: (10%)

Particle size, shape and their effect on engineering properties of soil

Gradation and its influence on engineering properties

Relative density and its use in describing cohesion less soils

Behavior of cohesive soils with change in water content, Atterberg limits-definitions, use and practical significance

Field identification test for soils

BIS1498 soils classification system; basis, symbols major divisions and sub divisions, groups, plasticity chart; procedure to be followed in classifying a given soil into a group

4. Permeability of soils: (10%)

Concept of permeability and its importance
Darcy's Law, coefficient of permeability, seepage velocity and factors affecting permeability
Comparison of permeability of different soils as per BIS
Measurement of permeability in the laboratory

5. Deformation of soils (10%)

Effective Stress: (Concept only) Stresses in subsoil Definition and meaning of total stress, effective stress and neutral stress Principle of effective stress Importance of effective stress in engineering problems
Definitions: Consolidation and consolidation settlement, Creep, Plastic flow, Heaving, Lateral movement
Definition and practical significance of compression index, coefficient of consolidation, degree of consolidation.
Meaning of total settlement, uniform settlement, differential settlement and rate of settlement and their importance
Settlement due to construction operations and lowering of water table
Tolerable settlement for different structures as per BIS

6. Shear Strength Characteristics of Soils: (15%)

Concept of shear failure in soils along with examples
Factors contributing to shear strength of soils, Coulomb's law
Determination of shearing strength direct shear test and unconfined compression test. Brief idea about tri-axial shear test
Drainage conditions of test and their significance
Stress and strain curve, peak strength and ultimate strength, their significance
Comparisons between laboratory and field test.

7. Soil Compaction: (10%)

Definition of compaction and its necessity
Laboratory compaction test (as per BIS) definition and importance of optimum water content, maximum dry density; moisture dry density relations for typical soils.
Field compaction: methods and equipment, choice of equipment
Compaction requirements
Compaction control; Density control, field density test, (sand replacement), moisture control, Proctor's needle and its use, thickness control.

8. Bearing Capacity (10%)

Concept of bearing capacity
Definition and significance of ultimate bearing capacity, net safe bearing capacity and allowable bearing pressure
Guidelines of BIS (IS 6403) for estimation of bearing capacity of soil
Factors affecting bearing capacity
Concept of vertical stress distribution in soils due to foundation loads, pressure bulb

Applications of SPT, unconfined compression test and direct shear test in estimation of bearing capacity

Plate load test (no procedure details) and its limitations

Improvement of bearing capacity by sand drain method, compaction, use of geo-synthetics.

9. Soil Exploration: (10%)

Purpose and scope, Planning of subsurface investigations

Possibility of misjudgment and Influence of soil conditions on exploratory programme

Location, depth and spacing and number of bore holes based on project size/type of structure.

Methods of soil exploration; Reconnaissance, Trial pits, borings, (Auger, wash, rotary, percussion to be briefly dealt), SPT and dynamic cone penetration test (Brief description and information collected)

Ground water level measurement

Sampling; undisturbed, disturbed and representative samples; selection of different type of samples; thin wall and piston samples; area ratio, recovery ratio of samples and their

significance, number and quantity of samples, sealing and preservation of samples.

Presentation of soil investigation results

10. Foundation Engineering: (10%)

Concept of shallow and deep foundation; types of shallow foundations: isolated, combined, strip, mat, and their suitability. Factors affecting the depth of shallow foundations, deep foundations, type of piles and their suitability; pile classification on the basis of material, pile group and pile cap.

PRACTICAL EXERCISES

1. To determine the moisture content of a given sample of soil

2. Auger Boring and Standard Penetration Test

a) Identifying the equipment and accessories
b) Conducting boring and SPT at a given location
c) Collecting soil samples and their identification
d) Preparation of boring log and SPT graphs
e) Interpretation of test results

3. Extraction of Disturbed and Undistrubed Samples

a) Extracting a block sample
b) Extracting a tube sample
c) Extracting a disturbed samples for mechanical analysis.
d) Field identification of samples

4. Field Density Measurement (Sand Replacement and Core Cutter Method)

a) Calibration of sand
b) Conducting field density test at a given location

c) Determination of water content
d) Computation and interpretation of results

5. Liquid Limit and Plastic Limit Determination:
a) Identifying various grooving tools
b) Preparation of sample
c) Conducting the test
d) Observing soil behaviour during tests
e) Computation, plotting and interpretation of results

6. Mechanical Analysis
a) Preparation of sample
b) Conducting sieve analysis
c) Computation of results
d) Plotting the grain size distribution curve
e) Interpretation of the curve

7. Laboratory Compaction Tests (Standard Proctor Test)
a) Preparation of sample
b) Conducting the test
c) Observing soil behaviour during test
d) Computation of results and plotting
e) Determination of optimum moisture content and maximum dry density

8. Demonstration of Unconfined Compression Test
a) Specimen preparation
b) Conducting the test
c) Plotting the graph
d) Interpretation of results and finding/bearing capacity

9. Demonstration of:
a) Direct Shear and Vane Shear Test on sandy soil samples
b) Permeability test apparatus

INTRUCTIONAL STRATEGY

The teacher while imparting instructions are expected to lay greater emphasis on the practical aspects rather than theory and mathematical treatment. To bring clarity regarding concepts and principles involved, teachers should organize demonstrations in the laboratories and fields. It is necessary to create understanding that soils fail either under shear or settlement due to heavy loads. This can be shown by making use of photographs of such failures. Efforts should be made in the practical classes that students perform practical exercises individually. Conduct of viva examination at the end of each practical work will develop clear understanding about type concepts and principles related to this subject.

REFERENCES

i) Punia, BC; "Soil Mechnics and Foundations"; Delhi Standard Publishers

Distributors.
ii) Bharat ingh and Shamsher Prakash; "Soil Mechanics and Foundations Engineerin g"; Roorkee, Nem Chand and Bros.
iii) Alam Singh, 'Soil Engineering in Theory and Practice", New Delhi, Asia Publishing House
iv) Sehgal, SB; "A text Book of Soil Mechanics"; Delhi, CBS Publishers and Distributors
v) Bowles, Joseph E; "Engineering Properties of souls and their Measurement" Mc Graw Hill.
vi) Parcher, JV and Means, RE; "Soil Mechanics and Foundations" Prentice Hall of India.
vii) Sutton, BHC; "Solution of Problems in Soil Mechanics " Pltman
viii) Gulati, SK; "Enigneering Properties of Soils", Tata Mc Graw Hill
ix) Ramanna TR; Krishnamurthy S. and Duggal, AK; "Soil Sampling and testing" A laboratory manual (TTTI), Marketed by New Age International Publishers Ltd.

CE 432 SURVEYING – II

	L	T	P
Pds/week	2	-	6

RATIONALE

The important functions of a civil engineer includes the jobs of detailed surveying, plotting of survey data, preparation of survey maps and setting out works

While framing the curriculum for the subject of surveying, stress has been given to the development of knowledge and skill in theodolite surveying, tachometry surverying, curves and use of minor and modern instruments have been included in this subject.

Field work should be a selected one so that student can check his work and have an idea of the results the extent of error in the work done by him. As far as possible, the surveys done should be got plotted, as this will also reveal errors in the work and develop skill in plotting.

DETAILED CONTENTS

1. Contouring: (20%)

   Concept of contours, purpose of contouring, contour interval and horizontal equivalent, factors effecting contour interval, characteristics of contours, methods of contouring: Direct and indirect, use of stadia measurements in contour survey, interpolation of contours; use of contour map, Drawing cross section from a contour map; marking alignment of a road, railway and a canal on a contour map, computation of earth work and reservoir capacity from a contour map

2. Theodolite Surveying: (30%)

   Working of a transit vernier theodolite, axes of a theodolite and their relation; temporary adjustments of a transit theodolite; concept of transiting, swinging, face left, face right and changing face; measurement of horizontal and vertical angles. Prolonging a line (forward and backward) measurement of bearing of a line; traversing by included angles and deflection angle method; traversing by stadia measurement, theodolite triangulation, plotting a traverse; concept of coordinate and solution of omitted measurements (one side affected), errors in theodolite survey and precautions taken to minimize them; limits of precision in theodolite traversing. Height of objects – accessible and non-accessible bases

3. Tacheo-metric surveying (10%)

   Tacheometry-principle of tacheometry, additive and multiplying constants, Instruments to be used in tachometry, methods of tachometry, stadia system of tachometry, examples of stadia tachometry and simple numerical problems.

4. Curves: (25%)

Simple Circular Curve:

Need and definition of a simple circular curve; Elements of simple circular curve - Degree of the curve, radius of the curve, tangent length, point of intersection (Apex point), tangent point, length of curve, long chord, deflection angle, Apex distance and Mid-ordinate. Setting out of simple circular curve:

a) By linear measurements only:
   - Offsets from the tangent
   - Successive bisection of arcs
   - Offsets from the chord produced

b) By tangential angles using a theodolite

Transition Curve:

Need (centrifugal force and super elevation) and definition of transition curve; requirements of transition curve, length of transition curve for roads

Vertical curves

Types of curves, Setting out of a vertical curve

5. Introduction to the use of Modern Surveying equipment and techniques such as: (15%))

a) EDM
b) Digital Planimeter
c) Total station
d) Introduction to GIS & Remote Sensing and GPS

PRACTICAL EXERCISES

1. Computation of horizontal angle between two intersecting lines using repetition method
2. Computation of horizontal angles using re-iterartion
3. To find out height of an object
4. To measure magnetic bearing of a line
5. To prolong a line in the field
6. Running a closed traverse with a theodolite (at least five sides) and its plotting
7. To compute tacheometric constants (k & c)
8. Preparing a contour plan by radial line method
9. Preparing a contour plan by method of squares
10. Setting out of a simple circular curve by different methods
11. Study of Total Station (only demonstrations)
12. Demonstration of digital instruments through field visits and government agencies.

INSTRUCTIONAL STRATEGY

This is highly practice-oriented course. While imparting theoretical instructions, teachers are expected to demonstrate the use of various instruments in surveying, stress should be laid on correct use of various instruments so as to avoid/minimize errors during surveying. It is further recommended that more emphasis should be laid in conducting practical work by individual students

RECOMMENDED BOOKS

1. Hussain, SK and Nagraj, MS "Text Book of Surveying";, S Chand and Co Ltd., New Delhi
2. Deshpande, RS "A Text Book Surveying and Levelling"; United Book Corporation, Pune,
3. Kocher, CL; "A Text Book of Surveying"; Katson Publishing House Ludhiana,
4. Kanetkar,TP and Kulkarni, SV., "Surveying and Leveling", Poona, AVG Parkashan, Pune
5. Kanetkar, TP; and Kulkarni, SV; "Surveying and Leveling-Vol.2" AVG Prakashan, Pune
6. Punmia, BC; "Surveying and Leveling ", Standard Publishers Distributors, Delhi
7. Shahai, PB; "A Text Book of Surveying ", Oxford and IBH Publishing Co.
8. Lilly Sant "Remote Sensing and Image Interpretation"
9. Mahajan, Sanjay, "Surveying-II", Satya Prakashan, Delhi

CE 443 QUANTITY SURVEYING AND VALUATION

	L	T	P
Pds/week	4	-	2

RATIONALE

Diploma holders in Civil Engineering are supposed to prepare material estimates for various civil Engineering works namely buildings, Irrigation works and roads etc. In addition , they must have basic knowledge regarding analysis of rates, contracting and principles of valuation etc. Therefore this subject has great importance for diploma holders in Civil Engineering.

Note :- Weight age of each topic for external examination is given in the brackets.

DETAILED ESTIMATE

1. BUILDINGS: (20%)

(a) Introduction to estimating:

Types of estimates ;- Preliminary estimates ,Plinth area estimate, Cubic rate estimate Estimate per unit base

Detailed estimates- Definition- Stages of preparation – details of measurement and calculation of quantities and abstract

Units of measurement for various items of work as per BIS: 1200

Rules for measurements

(c) Different Different methods of taking out quantities – centre line method and long wall and short wall method

(d) Preparation of detailed estimate complete with detailed reports, specifications, abstract of cost and material requirement statements for a small residential building with flat roof.

(e) Sub heads and items of work

Preparation of Detailed and Abstract Estimates from Drawings for: A small residential building with a flat roof and pitched roof building comprising of - Two rooms with W.C., bath, kitchen and verandah

2. ANALYSIS OF RATES: (20%)

Detailed specifications of different types of building works from excavation to foundations, superstructure and finishing operation

(A) Steps in the analysis of rates for any item of work: Requirement of materials, labour, sundries, water charges and contractor's profit.

(B) Calculation of quantities of materials for:

a) Cement mortars of different proportion
b) Cement concrete of different proportion
c) Brick/stone masonry in cement mortar
d) Plastering and pointing
e) White washing, painting
f) R.C.C. work in slab, beams

(C) Analysis of Rates

Steps involved in the analysis of rates. Requirement of material, labour, sundries, contractor's profit and overheads

Analysis of rates for finished items when data regarding labour, rates of material and labour is given:

a) Earthwork in excavation in hard/ordinary soil and filling with a concept of lead and lift
b) RCC in roof slab/beam/lintels/columns
c) Brick masonry in cement mortar
d) Cement Plaster
e) White washing, painting
f) Stone masonry in cement mortar

(D) Running and maintenance cost of construction equipment

4.**IRRIGATION: (10%)

(A) Calculation of earth work for inclined channels with the help of drawings for different cross sections.

(B) Preparation of detailed estimate for brick lined distributor from a given section.

5.**ROADS: (10%)

(a) Calculation of earth work in roads: by Cutting, Filling, Cutting and filling, average depth, average cross sectional area and graphical method.

(b) Calculation of quantities of materials for roads in plains with the given drawings.

(c) Preparation of detailed estimate using the above quantities .

(d) Calculation of quantities of different items of works for a masonry boundary wall from the given drawings.

** One problem on Earth work may be asked either from Roads or Irrigation involving cross sections at THREE to FOUR locations.

5. CONTRACTING: (20%)
   a) Meaning of contract
   b) Qualities of a good contractor
   c) Essentials of a contract
   d) Types of contracts, their advantages, dis-advantages and suitability, system of payment
   e) Single and two cover-bids; tender, tender forms and documents, tender notice, submission of tender and deposit of earnest money, security deposit, retention money, maintenance period
   f) Classification and types of contracting firms/construction companies
   g) Introduction to CSR and calculation of cost based on premium on Common

Schedule Rates (CSR)

7. BILLING (10%)

(a) Measurement of work for payment of contractors and suppliers. Type of Measurement book,
Maintenance of measurement book.

(b) Types of payments: First, running, advance, first & final and final payment.

8. VALUATION (NO NUMERICALS) (10%)

a) Purpose of valuation, principles of valuation
b) Definition of various terms related to valuation like depreciation, sinking fund, salvage and scrap value, market value, fair rent, year's purchase etc.
c) Methods of valuation (i) replacement cost method (ii) rental return method

PRACTICAL
(USE OF SPREAD SHEET SHALL BE COMPULSORY FOR FOLLOWING EXERCISES)

Preparation of Tender Document based on Common Schedule Rates (CSR)
Preparation of Detailed and Abstract Estimates from Drawings for:

a) A small residential building with a flat roof and pitched roof building comprising of - Two rooms with W.C., bath, kitchen and verandah
b) Earthwork for unlined channel
c) WBM road and pre-mix carpeting
d) Single span RCC slab culvert
e) Earthwork for plain and hill roads
f) RCC work in beams, slab, column and lintel, foundations
g) users septic tank - 10 users- 50 users

INSTRUCTIONAL STRATEGY

This is an applied engineering subject. Teachers are expected to provide working drawings for various civil engineering works and students be asked to calculate the quantities of materials required for execution of such works. Teachers should conceptualizes making analysis of rates for different types of works along with valuation of property.

Reference:

1. IS Code of Practice – IS 1200
2. Estimating and Costing – Rangawala
3. Quality surveying – PL Bhasir & Co.,
4. Estimating and Costing – Birdie
5. Estimating and Costing – Vazirani & Chandola,
6. Chakraborti. M, "Estimating , Costing Specification and Valuation in Civil Engg"

7. Datta.B.N., "Estimating and Costing in Civil Engg" UBS Publishers (P) ltd. Delhi.
Quantity surveying – P.L.Bhasin , M/s. Chand Publication.

	L	T	P

CE 453 FIELD WORK/EXPOSURE

Pds/week	-	-	8

The purpose of field work/ exposure is to expose the students in the world of work with a view to create motivation in the students for better understanding and learning civil engineering courses in the later semesters. Another purpose is to provide appropriate learning experiences which are beyond the facilities at the polytechnic. Following suggestions are made for effective implementation of this subject.

i) Two visits to building construction site (one residential and one commercial) to study construction processes and building components.

ii) Visit to Sewage treatment plant.

iii) Visit to Water treatment plant.

iv) Visit to water supply works.

v) Visit to a bridge/flyover site to study various components.

vi) Visit to metro rail project site.

vii) Visit to asphalt mixing plant.

viii) Visit to an excavation site at project.

ix) Visit to RMC plant.

The students are supposed to prepare a small report along with photograph/drawing/sketches of each visit and preserve the same for semester viva.

CM401 ENGLISH AND COMMUNICATION SKILLS – II

	L	T	P
Pds/week	4	-	2

RATIONALE

The curriculum aims to develop the use of English for three major purposes social interaction, academic achievement and professional use. Listening, speaking, reading, and writing skills can not be thought of as independent skills. They are generally perceived as interdependent where one skill often activates the other skills as well as the paralinguistic skills required for the achievement of effective communication. It is believed that the most effective way to achieve these purposes is through the adoption of a thematic, integrated, content-based approach to teaching and learning.

DETAILED CONTENTS

1. LISTENING (5%)

Practical:

- § Pre-recorded CDs of famous speeches and dialogues: Comprehension exercises based on the audio
- § Note-taking
- § Drawing inferences
- § Summarizing

Note: Teachers are expected to give necessary demonstrations, instructions and guidelines, while teaching above topics

2. SPEAKING (20%)

Practical:

- § Voice Modulation: Horizons (pitch, tone, volume, modulation)
- § Word stress, rhythm, weak and strong form, pauses, group-sense, falling and rising tones, fluency, pace of delivery, dealing with problem sounds, accent, influence of mother tongue etc.
- § Situational Conversation/role-playing with feedback, preferably through video recording
- § Telephonic Conversation: Types of calls, agreeing and disagreeing, making and changing appointments, reminding, making complaints and handling complaints, general etiquettes,
- § A small formal and informal speech
- § Seminar
- § Debate

Note: Teachers are expected to give necessary demonstrations, instructions and guidelines, while teaching above topics

3. READING (10%)

Theory:

- § Comprehension, Vocabulary enrichment and grammar exercises based on the following selective readings:

Section-I

- § The Portrait of a Lady - Khushwant Singh
- § The Lost Child by Mulk Raj Anand
- § The Refugees – Pearl S. Buck

Section-II

- § Life Sketch of Dr. Abdul Kalam
- § Abraham Lincoln's letter to his son's Headmaster

Section-III

- § All The World's A Stage – W. Shakespeare
- § Say Not, The Struggle Nought Availeth – A.H. Clough
- § Pipa's Song – Robert Browning
- § A Viewpoint – RP Chaddah

- § Comprehension exercises on unseen passages

4. WRITING (25%)

Theory:

- § The Art of Précis Writing
- § Correspondence: Business and Official
- § Drafting
  - o Report Writing: Progress report and Project report
  - o Inspection Notes
  - o Notices: Lost and found; Obituary; Auction
  - o Memos and Circulars
  - o Notices, Agenda and Minutes of Meetings
  - o Use of internet and E-Mails
  - o Press Release
  - o Applying for a Job: Resume writing; forwarding letter and follow-up
- § Writing Telephonic messages
- § Filling-up different forms such as Banks and on-line forms for Placement etc.

Note: Teachers are expected to give practical examples, while teaching above topics

5. VOCABULARY AND GRAMMAR (25%)

Theory and Practical exercises on following:

- § Vocabulary of commonly used words
- § Glossary of Administrative Terms (English and Hindi)
- § One word substitution
- § Idioms and Phrases
- § Prefixes and Suffixes
- § Punctuation
- § Narration
- § Forms of verbs: Regular and irregular

6. EMPLOYABLE SKILLS (15%)

Theory:

Importance of developing employable and soft skills; List and tips for developing of employable skills

Practicals:

- § Group discussions
- § Presentations, using audio-visual aids (including power-pooint)
- § Interview techniques: Telephonic interviews, Group interviews, face to face interviews
- § Mannerism and etiquette etc.

RECOMMENDED BOOKS

1. Text Book of English and Communication Skills Vol – 2, By Alvinder Dhillon and Parmod Kumar Singla; Published by: M/S Abhishek Publications, Chandigarh
2. Spoken English (2nd Edition) by V Sasikumar & PV Dhamija; Published by Tata MC Graw Hills, New Delhi.
3. Spoken English by MC Sreevalsan; Published by M/S Vikas Publishing House Pvt. Ltd; New Delhi.
4. Spoken English –A foundation course (Part-I & Part-II) By Kamlesh Sdanand & Susheela Punitha; Published by Orient BlackSwan, Hyderabad
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