

Faculty of Engineering & Technology

P.K.University

Shivpuri (MP)



Department of Civil Engg.

Evaluation Scheme & Syllabus for

Diploma-(Civil Engg.)

(V Semester)

(Effective from session 2025-26)

EVALUATION SCHEME

DIPLOMA CIVIL ENGG. (5 SEMESTER)

Study And Evaluation Scheme For Diploma Civil Engineering												
SEMESTER-5												
SUBJECT CODE	SUBJECTS NAME	STUDY SCHEME Periods/Week			Credit s	Marks In Evaluation Scheme						Total Marks of Intern al & Extern al
						INTERNAL ASSESSMENT			EXTERNAL ASSESSMENT			
		L	T	P		Th	Pr	Tot	Th	Pr	Tot	
DDESICE501	Design of Reinforced Concrete Structure	4	-	-	4	30	-	30	70	-	70	100
DTRAN502	Transportation Engg.	3	1	-	4	30	-	30	70	-	70	100
DESTICE503	Estimating Costing & Valuation	3	1	-	4	30	-	30	70	-	70	100
DSURVCE504	Surveying -II	3	1	-	4	30	-	30	70	-	70	100
DIRRICE505	Irrigation Engg.	4	0	0	4	30	-	30	70	-	70	100
DSURVCE506	Surveying –II Lab	0	0	2	1	-	25	25	-	25	25	50
DINTECE507	Integrative Communication Lab	0	0	2	1	-	25	25	-	25	25	50
DRCCLE508	R.C.C. LAB	0	0	2	1	-	25	25	-	25	25	50
DINDUCE509	Industrial Training	-	-	-	2	-	-	-	-	-	50	50
Total		17	3	6	25	150	75	225	350	75	475	700

Department Of Civil Engineering
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III Year V Semester

DDESICE501
Design of Reinforced Concrete Structure

L	T	P
4	0	0

INTRODUCTION- Concept of reinforced concrete structures, advantages and disadvantages. Different materials used in RCC With their properties. Load and loading standard as per IS:875 Concept of design of reinforced concrete based on working stresses method and limit state method and their difference.

2(A) Design based on Working Stress Method I.

Fundamental of working stress method:

- (i) Assumptions in the theory of simple bending for RCC beams.
- (ii) Flexural strength of a singly reinforced RCC beam. Position of the Neutral Axis. Resisting moment of the section, critical neutral axis, actual neutral axis, concept of balanced, under reinforced and over-reinforced sections.
- (iii) **Shear Strength :** -Permissible shear stresses as per IS:456. Development of stresses in reinforcement, development length and anchoring of bars.
- (iv) **Bond Strength:-**Concept of bond, local and average, permissible bond stresses for plain and deformed bars as per IS, minimum length of embedment of bars, minimum splice length, actual bond stress in RCC beams and slabs, bond length as per IS: 456.

II. Design of singly reinforced concrete beams as per IS:456 from the given data such as span, load and properties of materials used.

III. Design of lintel.

IV. Design of a cantilever beam and slab.

V. Design of Doubly Reinforced Concrete Beams:

- (i) Doubly reinforced concrete beam and its necessity.
- (ii) Strength of a double reinforced concrete beam section.
- (iii) Method of design: Simple problems only.
- (iv) Reinforcement details of doubly reinforced concrete beam.

VI. Design of RCC Slabs:

- (i) Structural behavior of slabs under uniformly distributed load (UDL).
- (ii) Types of end supports.
- (iii) Design of one way slab.
- (iv) Design of Two-way slab with the help of tables of

- (v) Detailing of reinforcement.

VII. Design of Reinforced Brick-Work

- (i) Plain brick masonry, permissible stresses.
- (ii) Reinforced Brick work and its use in slabs and lintels.
- (iii) Limitations of the use of R.B. Work.

(iv) General principles of design of reinforced brick lintels and slabs.

(v) Design of R.B. beams, slab and lintels.

VIII. Design of Tee Beams:

(i) Structural behavior of a beam and slab floor laid monolithically.

(ii) Rules for the design of T-Beams.

(iii) Economical depth of T-Beams, Strength of T-Beams.

(iv) Design of singly reinforced Tee-Beams.

(v) Detailing of reinforcement.

IX. Design of Columns & Column Footings

(i) Concept of long and short columns.

(ii) Is specifications for main and lateral reinforcement.

(iii) Behavior of RCC column under axial load.

(iv) Design of Axially loaded short and long columns with hinged ends (circular, square).

(v) Concept of column footing. Design criteria. Design of square isolated column footings.

(vi) Detailing of reinforcement.

X. Cantilever Retaining Wall:- Concept of design and function of different parts of a cantilever retaining wall and reinforcement details

XI. Components of Overhead Water Tanks (Dome Shap):- Description of different component e.g. roof, side wall and ring beam, floor slabs, supporting structure and foundations (only reinforcement details be shown and emphasized)

XII. Components of Multi-Storied Framed Structures:- General concept of multistoried framed

structures of columns, beam, slabs, and footing, design criteria and method of placing reinforcement in framed structures. Lifts basements (only diagrams to be taught. No numerical shall be asked in the examination)

2(B) Design Based on Limit State Method:

I. Fundamentals of Limit State Method

i. Theory of limit state method.

ii. Partial safety factors.

iii. Flextural strength.

iv. Shear Strength.

v. Development Length of bars.

II. Design requirements.

III. Design of the following :

i. Singly reinforced rectangular beam.

ii. One way slab (simply supported)

3. Pre-Stressed Concrete

i. Concept of prestressing.

ii. Situations where prestressed concrete is used.

iii. Materials used in prestressed concrete and their specifications as per IS.

iv. Post-tensioning and pre-tensioning.

v. Systems of prestressing.

vi. Freyssinet, Magnol-Blaten and Lee-Mecall systems

vii. Sketch showing Prestressing arrangement for RCC beam

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DTRAN502
TRANSPORTATION ENGINEERING

L	T	P
3	1	0

A : HIGHWAYS

1. Introduction

- (i) Importance of Highway transportation.
- (ii) Functions of IRC.
- (iii) IRC classification of roads.
- (iv) Organization of state highways department.

2. Road Geometrics:

(i) Glossary of terms used in geometrics and their importance; Right of way, formation width, road margin, road shoulder, carriage way, side slopes, Krebs, formation levels, camber and gradient.

(ii) Design and average running speed, stopping and passing sight distances.

(iii) Curves necessity, horizontal and vertical curves including transition curves and super elevation, Methods of providing super elevation

(iv) Use of IRC design tables and specifications for finding elements of Road geometrics. Drawing of typical cross-sections in cutting and filling on straight and at a curve.

(v) Under pass & over pass (fly over and bridges)

3. Highway Surveys and Plans

- (i) Designation of a topographic map. Reading the data given on a topographic map.
- (ii) Basic considerations governing alignment for a road in plain and hilly area.
- (iii) Highway location. Marking of alignment. Importance of various stages viz:
 - (a) Reconnaissance survey: Conduct reconnaissance and prepare reconnaissance report.
 - (b) Preliminary survey: Object, organizing, conducting and informations to be collected.
 - (c) Location survey.
 - (d) Standards for preparing the highway plans as per Ministry of Transport.

4. Traffic Engineering

- (i) Traffic studies , Methods of collection and presentation of volume count d
- (ii) Traffic control devices - Signs, markings and signals, their effectiveness and location, installation of signs, IRC standards.
- (iii) Segregation of traffic.
- (iv) Types of intersections and choice of each.
- (v) Accidents: Types, causes and remedies.

5. Road Materials:

- (i) Different types of road materials in use; soil, aggregates binders.
- (ii) Function of soil as Highway sub grade.
- (iii) C.B.R; Method of finding. CBR value and its significance.

(iv) Testing aggregates : Abrasion test, impact test, crushing strength test, water absorption test and soundness test.

(v) Aggregates: Availability of road aggregates in requirements of road aggregates as per IS specifications.

(vi) Binders: Common binders; cement, bitumen and Tar, properties as per IS specifications, penetration and viscosity test, procedures and significance. cut back and emulsion and their uses.

6. Road Pavements ; Types and Their Construction

(i) Road pavement : Flexible and rigid pavement, their merits and demerits, typical cross-sections, functions of various components.

(ii) Sub-grade preparation -Setting out alignment of road, setting out bench marks, control pegs for embankment and cutting, Cornrow pits, mutams, making profiles of embankment, construction of embankment, compaction, stabilization, preparation of subgrade. methods of checking camber, gradient and alignment as per recommendations of IRC, equipment used for sub grade preparation.

(iii) **Flexible pavements:** sub base necessity and purpose. stabilized sub base; purpose of stabilization.

Types of Stabilization: (a) Mechanical stabilization. (b) Lime stabilization.
(c) Cement stabilization. (d) Fly ash stabilisation.
(e) Granular sub base

(iv) Base course:

(a) Brick soling. (b) Stone soling. (c) Metalling: water bound macadam & bituminous macadam.

(v) Surfacing: Types of surfacing;

(a) Surface dressing. (b) (i) Premix carpet. (ii) Semi dense carpet (S.D

(c) Asphalt concrete. (d) Grouting.

(vi) Rigid pavements-Construction of concrete roads as per IRC specifications: Form laying, mixing and placing the concrete, compacting and finishing, curing, joints in concrete pavement, equipment used.

7. Hill Roads:

(i) Introduction: Typical cross-sections showing all details of a typical hill road in cut, partly in cut and partly in fill.

(ii) Landslides : Causes, preventions and control measures.

8. Road Drainage:

(i) Necessity of road drainage work, cross drainage works.

(ii) Surface and subsurface drains and storm water drains. Location, spacing and typical details of side drains, side ditches for surface drainage. Intercepting drains, pipe drains in hill roads, details of drains in cutting embankment, typical cross-sections.

9. Road maintenance:

(i) Common types of road failures-their causes and remedies such as bagie action.

(ii) Maintenance of bituminous roads such as patch work & resurfacing. Maintenance of concrete roads-filling cracks, repairing joints, maintenance of shoulders (berms), maintenance of traffic control devices.

10. Construction Equipment: Output and use of the following plant and equipment's:

(i) Hot Mix Plant & Mix all battery.

(ii) Tipper, tractors (wheel and crawler) scraper, bull-dozer, dumpers, showels, grader, roller, dragline.

(iii) Asphalt mixer and tar boilers.

(iv) Road pavers.

11. Arboriculture:

Names of trees used in arboriculture, distance of trees from center of roads and distance between center to center of trees, tree guards, maintenance and revenue from trees.

B : RAILWAYS

1. Introduction: Railways - An important system of communication in India.

2. Permanent Way:

Definition of a permanent way; components of a permanent way, subgrade, ballast, sleepers, rails, fixtures and fastenings. Concept of gauge and different gauges prevalent in India. Suitability of these gauges under different conditions.

3. Track Materials:

(i) RAILS: Function of rails. Different types of rail sections-double header, bull headed and flat footed their standard length, weights and comparison. Welded rails-appropriate length of welded rails and advantages of welded rails .Creep: Its definition, causes, effects prevention. Wear of rails: its causes and effects.

(ii) SLEEPERS: Function of sleepers; Different types of sleepers: wooden ,steel ,cast iron (pot type),concrete and pre-stressed concrete, their sizes, shapes, characteristics and spacing.

(iii) BALLAST: Function, materials used for making ballast stone, brick, slag and cinder, their characteristics.

(iv) FIXTURES AND FASTENINGS:

(a) Connections of rail to rail-Fishplate and fish bolts.

(b) Connection of Rail to sleepers: Sketches of connection between flat footed rails with various type sleepers with details of fixtures and fasteners used.

4. Geometrics for Broad Gauge:

Typical Cross-sections of single and double broad gauge railway tracks in cutting and embankment. Permanent and temporary land width. Gradients- ruling, maximum,-minimum for drainage. Gradients in station yards. Curves; Limiting radius of a curve for broad gauge. Transition length to be provided for railway curves as per railway code. Super-elevation-its necessity and limiting value. Definition of equilibrium cant and cant deficiency, widening of gauge on curves.

5. Points and Crossings:

Necessity and details of arrangement; sketch of a turnout definition stock rail, tongue rail, check rail, lead rail, wing rail, point rail, splice rail, stretcher bar, throw of switch, heel of switch, nose of crossing,angle of crossing, overall length of turnout, facing and trailing points,diamond crossing, cross over, triangle.

6. Track Laying

Preparation of sub grade. Collection of materials setting up of material depot and carrying out initial operations such as adzing of sleepers, bending of rails and assembling of crossings. Definitions of base and rail head. Transportation by material trolleys, rail carriers and material trains. Method of track laying (parallel, telescopic and American methods) Organization of layout at rail head. Ballasting of the track.

7. Maintenance of Track:

(i) Routine maintenance of formation and side slopes, rails, fixtures and drainage

(ii) Special maintenance - Replacement of defective sleepers and rails.

(iii) Tools used for the above operations.

C : BRIDGES

1. INTRODUCTION; -Bridge: Its function and component parts, different parts, difference between a bridge and a culvert.

2. CLASSIFICATION OF BRIDGES: Their structural elements and suitability:

- (i) According to life: Permanent and temporary.
- (ii) According to road way level : Deck, through and semi-through.
- (iii) According to material: Wooden, steel, RCC, pre-stressed and masonry.
- (iv) According to structural form:

(a) Beam type-RCC,T-Beam, steel girder bridges, plate girder and box girder, trussed bridges N and warren girder bridges.

(b) Arch type-open spandrel and filled span drill, barrel and rib type.

(c) Suspension type-Unstiffened sling type, its description with sketches.

(d) According to the position of highest flood level: submersible and non-submersible

3. Site selection and collection of data:-

1.Factors affecting the selection of site for a bridge data to be collected.

2.Bridge span: Economical span and factors affecting it

4. Piers, abutments and wing walls:-Piers: Definition parts. Types:solid (masonry and RCC); Open cylindrical and abutment piers. Definition of the following terms;height of pier,water way (natural and artificial),afflux and clearance. Abutments and wing walls: Definition, types of abutments (straighttee) abutment with wing walls (straight, splayed, return and curved).

5. Bridge Bearings:-Purpose of bearings:Types of bearings:Fixed plate, sliding plate,deep cast base, rocker and roller bearings, their functions with sketches.

6. Temporary Bridges:- Necessity, description with sketches of pontoon and boat bridges.

7. Maintenance of Bridges: -Inspection of bridges, routine maintenance.

8. Air Port :-Basic Element, Runway and Taxi Way.

9. Tunnel :-Introduction, Classification and Construction Method.

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DESTICE503
ESTIMATING, COSTING AND VALUATION

L	T	P
3	1	0

A Buildings

1. Introduction to Estimating: Types of estimates, drawings, (to be attached with these estimates. Preparation of rough cost estimates).

2. Units of measurement, and units of payment of different items of work.

3. Different methods of taking out quantities: Centre line in-to-in/out-to-put methods.

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

(b) Preparation of a detailed estimate with specification, abstract of cost and material statement for pitched roof with steel truss only.

5. Specifications:-Need, general and detailed specifications, method of writing specifications,

Analysis of rates:

(i) Steps in the analysis of rates for any item of work, requirement of material, labour, sundries T.& P. contractors profit.

(ii) Calculation of quantities of materials for:

(a) Plain cement concrete of different proportions.

(b) Brick masonry in cement and lime mortar.

(c) Plastering and pointing with cement mortar in different proportions.

(d) White washing.

6. Analysis of Rates

Analysis of rates of the following item of work when the data regarding labour, rates of material and rates of labour is given.

(a) Earth work in excavation and filling with a concept of lead and lift.

(b) Cement concrete in foundation.

(c) R.C.C. and R.B. in roof slabs.

(d) First class burnt brick masonry in cement mortar.

(e) Cement plaster.

(f) Cement pointing: Flush, deep pointing.

7. Tender and preparation of tender document.

B. Irrigation

8. Preparation of detailed estimate for a brick lined distributory from a given section.

C. Public health

9. Preparation of detailed estimate for laying a water supply line (C.I. Pipe).

10. Preparation of detailed estimate for sanitary and water supply fittings in a domestic building containing one set of toilets and septic tank.

D. Roads

11. Methods for calculating earth work using:
 - (i) Average depth.
 - (ii) Average cross sectional area.
 - (iii) Graphical method.
12. Calculations of quantities of materials for roads in plains from given drawings.
13. Preparation of detailed estimate using the above quantities.
14. Detailed estimate of a single span slab culvert with return wing walls.
15. Calculation of quantities of different items of work for a masonry retaining wall from given drawings.

E. Valuation

16. Purpose of valuation, principles of valuation.
17. Definition of terms such as depreciation, sinking fund, salvage and scrap value.
18. Valuation of a building property by replacement cost method and rental return method.
19. Method of calculation of standard rent-Concept of capitalized value and years purchase.

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DSURVCE504
SURVEYING II

L	T	P
3	1	0

1. Plane Table surveying:

- (i) Purpose of plane table surveying. Equipment used in plane table survey (a) Plane table, (b) Alidade (Plain and Telescopic), (c) accessories.
- (ii) Method of plane tabling (a) centering (b) levelling (c) Orientation.
- (iii) Methods of plane table surveying (a) Radiation, (b) intersection, (c) Traversing (d) Resection.
- (iv) Two point problem.
- (v) Three point problem by
 - (a) Mechanical Method (Tracing paper)
 - (b) Bessel's Graphical Method.
 - (c) Trial and error method.

2. Contouring:- Concept of contour: Purpose of contouring; Contour interval and horizontal equivalent; Factors affecting contour interval; characteristics of contour; 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 earthwork and reservoir capacity from a contour map.

3. Theodolite Surveying:- Working of a transit vernier theodolite, Fundamental axes of a theodolite and their relation; Temporary adjustments of a transit theodolite; least count and 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 and plotting a traverse; concept of coordinate and solution of omitted measurements (one side affected); Errors in theodolite survey and precautions taken to minimise them; Limits of precision in theodolite traversing. Principle and working of a micro-optic theodolite. Brief introduction to tacheometry. Principle and working of digital theodolite and its practice.

4. Total Station, Auto Level And EDM :- Working and application of total station, auto level and EDM. Various uses of total station in preparing drawings like drafting of elevation/vertical plane measurement of building.

5. Curves:- Simple circular curves:

- (i) 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 tangents.
 - Successive bisection of arcs.
 - Offsets from the chord produced.

(b) By Tangential angles using a theodolite.

(ii) Transition Curves: Need (centrifugal force and super elevation) and definition of transition curve; requirements of transition curves; length of transition curves for roads by cubic parabola; calculation of offsets for a transition curve; setting out of a transition curve by tangential offsets only.

(iii) Vertical curves:- Setting out of a vertical curve.

6. Geo informatics Survey: -Brief Introduction of G.P.S. surveying for making drawing of Site Plan, Contoured Plan, Digital Mapping, etc. and its practices, G.P.S., G.I.S. Remote Sensing.

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DIRRIGCE505
IRRIGATION ENGINEERING

L	T	P
4	0	0

1. Introduction

- 1.1 Definition of irrigation.
- 1.2 Necessity of irrigation
- 1.3 History of development of irrigation in India
- 1.4 Types of irrigation
- 1.5 Sources of irrigation water

2. Rain Fall & Run - Off

- 2.1 Definition of rainfall & run-off, catchment area, Dicken's & Ryve's formulae
- 2.2 Types of rain gauges - Automatic & Non - automatic
- 2.3 Stream gauging.

3. Water Requirement of Crops

- 3.1 Definition of crop season
- 3.2 Duty, Delta and Base Period, their relationship
- 3.3 Gross command area, culturable command area Intensity of Irrigation, Irrigable area
- 3.4 Water requirement of different crops-Kharif and Rabi

4. Lift Irrigation

- 4.1 Types of Wells - shallow & deep well, aquifer types, ground water flow, construction of open wells and tubewells.
- 4.2 Yield of an open/tube well and problems
- 4.4 Methods of lifting water - manual and mechanical devices, use of wind mills.

5. Flow Irrigation

- 5.1 Irrigation canals
- 5.2 Perennial Irrigation
- 5.3 Different Parts of irrigation canals and their functions
- 5.4 Sketches of different canal cross-sections
- 5.5 Classification of canals according to their alignment
- 5.6 Design of irrigation canals - Chezy's formula, Manning's formula, Kennedy's and Lacey's silt theory's and equations, comparison of above two silt theory's. Equations, critical velocity ratio.
- 5.7 Use of Garrets and Lacey's charts
- 5.8 Various types of canal lining - Advantages & disadvantages

6. Canal Head Works

- 6.1 Definition, object, general layout, functions of different parts
- 6.2 Difference between Weir and Barrage

7. Regulatory Works

- 7.1 Functions and explanation of terms used
- 7.2 Cross and Head regulators
- 7.3 Falls
- 7.4 Energy dissipaters
- 7.5 Outlets-Different types
- 7.6 Escapes

8. Cross Drainage Works

8.1 Functions and necessity of the following types:- Aqueduct, Syphon, Super passage, Level crossing, inlet and outlet.

- 8.2 Constructional details of the above

9. Dams

- 9.1 Earthen dams-types, causes of failure
- 9.2 Classification into masonry & concrete dams
- 9.3 Labeled cross-section of gravity dam.
- 9.4 Spillways

10. Water Logging and Drainage

- 10.1 Definition, causes and effects, detection, prevention and remedies
- 10.2 Surface and sub-surface drains and their layout.

11. Major Irrigation Projects in India

Practice:-Visits to at least one of the Irrigation Project and write specific report about the same.

12. Ground Water Recharge:-Aim, Method and Advantage.

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DSURVCE506
Surveying II Lab (PRACTICALS)

L	T	P
0	0	2

Ex. (i) (a) Setting the plane table

Plate-1.

(b) Marking the North direction.

(c) Plotting a few points by radiation method.

Ex. (ii) (a) Orientation by

Plate-1.

- Trough compass

- back sighting.

(b) Plotting a few points by intersection method.

Ex. (iii) Traversing an area with a plane table (at least five lines) Ex. (iv) (a) Two point problem.

Plate-1.

Plate-2.

(b) Three point problem by

- Tracing paper method.

- Bessel's graphical method.

- Trail and error method.

Theodolite

Ex. (v) Drill for taking out the theodolite mounting on the tripod and placing it back in the box.

Ex. (vi) Reading the vernier and working out the least count, measurement of horizontal angles by repetition and reiteration methods.

Ex. (vii) Traversing an area with a theodolite (at least five lines) and Plotting the traverse by calculating Latitude and Departure.

Ex. (viii) Measurement of vertical angles by the use of theodolite.

Ex. (ix) Measurement of Magnetic bearing of a line.

Ex. (x) Prolonging a line.

Ex. (xi) Running a closed traverse with a theodolite (at least five sides) and its plotting.

Curves:

Ex. (xii) Setting out of a simple circular curve with given data by the following methods:

Plate-1.

(a) Offsets from main chord.

(b) Offsets from the chords produced.

(c) One theodolite method.

Ex. (xiii) Setting out a circular curve with transition length by linear measurements.

Plate-1.

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DINTECE507
INTEGRATIVE COMMUNICATION LAB

L	T	P
0	0	2

INTERPERSONAL SKILLS

1. Interpersonal Relationship and Communication

INTERPERSONAL RELATIONSHIP , Forms of Interpersonal Relationship, Must Have in an Interpersonal Relationship, Interpersonal Relationship between a Man and a Woman (Passion, Intimacy, Commitment), Relationship Between Friends, ROLE OF COMMUNICATION IN INTERPERSONAL RELATIONSHIP (Take Care Of Your Tone And Pitch, Choice of Words is Important in Relationships, Interact Regularly, Be Polite, Try To Understand The Other Person's Point Of View As Well, Individuals Can Also Communicate Through Emails,

UNDERSTANDING OTHERS

2. Leadership Traits & Skills :

Introduction, Important Leadership Traits (Alertness, Bearing, Courage, Decisiveness, Dependability, Endurance, Enthusiasm, Initiative, Integrity, Judgment, Justice, Knowledge, Loyalty, Sense of Humour), Other Useful traits (Truthfulness, Esprit-de-corps, Unselfishness, Humility and sympathy, Tact without loss of moral courage, Patience and a sense of urgency as appropriate, Self confidence, Maturity, Mental including emotional stability)

3. Attitude

Types of Attitude, Components of Attitudes (Cognitive Component, Affective Component, Behavioral Component), Types of Attitudes (Positive Attitude, Negative Attitude, Neutral Attitude, Rebellious Attitude, Rational and Irrational Attitudes, Individual and Social Attitudes), Kinds of Attitude, ASSERTIVENESS, How to Develop Assertiveness (Experiment and Try New Things, Extend Your Social Circle, Learn to Make Decisions for Yourself, Indulge in Knowledge, Admire Yourself & Others), Negotiation (Be Sensitive to The Needs Others, Be Willing To Compromise, Develop Your Problem-Solving Skills, Learn to Welcome Conflict, Practice Patience, Increase Your Tolerance For Stress, Improve Your Listening Skills, Learn To Identify Bottom-Line Issues Quickly, Be Assertive, Not Aggressive)

4. Interview Skills (2 sessions from Industry Expert is Compulsory)

Curriculum Vitae (When Should a CV be Used, What Information Should a CV Include, personal profile, Covering Letter, What Makes a Good CV, How Long Should a CV Be, Tips on Presentation), Different Types of CV (Chronological, Skills- Based),

BEFORE THE INTERVIEW , CONDUCTING YOURSELF DURING THE INTERVIEW , FOLLOWING THROUGH AFTER THE INTERVIEW ,
Interview Questions To Think About ,

MOCK INTERVIEW – Activity (MOCK INTERVIEW EVALUATION - NON-VERBAL BEHAVIORS, VERBAL BEHAVIORS, General Etiquettes to face the Board , Telephonic interview

5. **Conflict Motives –Resolution**

Motives of Conflict(Competition for Limited Resources, The Generation Gap and Personality Clashes, Aggressive Personalities, Culturally Diverse Teams, Competing Work and Family Demands, Gender Based Harassment), Merits and Demerits of Conflict , Levels of Conflict (Interpersonal Conflict, Role Conflict, Inter-group Conflict, Multi-Party Conflict, International Conflict), Methods of Conflict Resolution (The Win- Lose Approach, The Lose-Lose Strategy, The Win-Win Approach), Techniques for Resolving Conflicts (Confrontation and Problem Solving Leading to Win-Win, Disarm the Opposition, Cognitive Restructuring, Appeal to Third Party, The Grievance Procedure)

6. **Negotiation / Influencing Skills**

Why Influencing, What Is Influencing, TYPES OF INFLUENCING SKILLS (Probing And Listening, Building Rapport, Sign Posting, Pacing, Selling, Assertiveness), LAWS AND PRINCIPLES OF INFLUENCE, The Six Laws of Influence (The Law of Scarcity, The Law of Reciprocity, The Law of Authority, The Law of Liking, The Law of Social Proof, The Law of Commitment and Consistency), Influencing Principles (Making a Start, Buy Yourself Thinking Time, Dealing With Disagreement, Difficult And Sensitive Situations)

7. **Sociability : Etiquettes And Mannerism & Social Skills**

Need for Etiquette , Types of Etiquettes (Social Etiquette, Bathroom Etiquette, Corporate Etiquette, Wedding Etiquette, Meeting Etiquette, Telephone Etiquette, Eating Etiquette, Business Etiquette, E-Mail Etiquettes,), MANNERISMS, HOW TO IMPROVE YOUR SOCIAL SKILLS (Be Yourself, Be Responsible, Be Open & Approachable, Be Attentive, Be Polite, Be Aware, Be Cautious)

8. **Importance of Group / Cross Cultural Teams / Team Work skills**

Introduction, Types and Characteristics of Groups (Definition of a Group, Classification / Types of Groups, Friendship Group, Task Group, Formal Groups, Informal Group, Effective Group), Importance of a Group, Characteristics of a Mature Group, TYPES AND CHARACTERISTICS OF A TEAM (Definition of a Team, Types of Teams, Functional Teams, Problem Solving Teams, Cross - Functional Teams, Self - Managed Teams), Importance of a Team, Characteristics of a Team

VALUES / CODE OF ETHICS

Meaning, A FEW IMPORTANT VALUES (Honesty, Integrity, Purity, Discipline, Selflessness, Loyalty, Fairness, Equality, Trust, Support, Respect, etc)

Note : One Orientation module for the faculty is must. Involvement of Industry Experts is necessary for Interview Skills

Department Of Civil Engineering
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P.K. University, Shivpuri (MP)
III Year V Semester

DRCCLCE508: R.C.C. LAB

L	T	P
0	0	2

PRACTICAL'S- Preparation of bar bending schedule and to bend the by accordingly for the following:

- (i) Singly reinforced concrete beam
- (ii) Doubly reinforced concrete beam
- (iii) Reinforced concrete column
- (iv) Reinforced concrete slab
- (v) Introduction of STADD.PRO or AUTO CAD software

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L	T	P
0	0	0

DINDUCE509: INDUSTRIAL TRAINING

It is needless to emphasize further the importance of Industrial Training of students during their 3 years of studies at Polytechnics. It is industrial training, which provides an opportunity to students to experience the environment and culture of industrial production units and commercial activities undertaken in field organizations. It prepares student for their future role as diploma engineers in the world of work and enables them to integrate theory with practice. Polytechnics have been arranging industrial training of students of various durations to meet the above objectives.

This document includes guided and supervised industrial training of 4 weeks duration to be organized during the semester break starting after second year i.e. after 4th semester examinations. The concerned HODs along with other teachers will guide and help students in arranging appropriate training places relevant to their specific branch. It is suggested that a training schedule may be drawn for each student before starting of the training in consultation with the training providers. Students should also be briefed in advance about the organizational setup, product range, manufacturing process, important machines and materials used in the training organization.

Equally important with the guidance is supervision of students training in the industry/organization by the teachers. Students should be encouraged to write daily report in their diary to enable them to write final report and its presentation later on.

An external assessment of 50 marks has been provided in the study and evaluation scheme of 5th Semester. Evaluation of professional industrial training report through viva-voce/presentation aims at assessing students understanding of materials, industrial process, practices in industry/field organization and their ability to engage in activities related to problem solving in industrial setup as well as understanding of application of knowledge and skills learnt in real life situations.

Teachers and students are requested to see the footnote below the study and evaluation scheme of 4th semester for further details.

The teacher along with field supervisors will conduct performance assessment of students. The components of evaluation will include the following:

Punctuality and regularity 15%
Initiative in learning new things 15%
Presentation and VIVA 15%
Industrial training report 55%

