Effective from Session: 2017							
Course Code	**DCE -501**	**Title of the Course**	**DESIGN OF REINFORCED CONCRETE STRUCTURE – I**	**L**	**T**	**P**	**C**
Year	III	**Semester**	V				
Pre-Requisite	DCE -501	**Co-requisite**	NA				
Course Objectives	To impart knowledge and abilities to students to understand basic design philosophy and design of different elements of structure						

Course Outcomes	
CO1	Explain the basic concepts of structural design Methods of RCC to the practical problem
CO2	Know the concepts of Pre-stressed concrete
CO3	Use the Knowledge in structural planning and design of various component of buildings
CO4	Explain and design of Slabs & lintel

Unit No.	**Title of the Unit**		**Contact Hrs.**	**Mapped CO**
1	**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. Design based on Working Stress Method: Assumptions in the theory of simple bending for RCC beams. Flexural strength of a singly reinforced RCC beam. Position of the Neutral Axis. Resisting moment of the section, critical neutral axis, and actual neutral axis, concept of balanced, under reinforced and over-reinforced sections.	10	CO-1
2	**Shear strength**	Permissible shear stresses as per IS: 456.Development of stresses in reinforcement, development length and anchoring of bars. 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.Design of Lintel. Design of a Cantilever Beam and Slab	08	CO-2
3	**Design of concrete reinforced beams**	Design of singly reinforced beams as per IS: 456 from the given data such as span load and properties of material used. 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.	08	CO-3
4	**Design based on limit state method**	[A] Fundamentals of Limit State Method:**(i)** Theory of limit state method. **(ii)** Partial safety factors. **(iii)** Flexural strength. **(iv)** Shear strength. **(v)** Development length of bars. **[B]** Design of the following: **(i)** singly reinforced rectangular beam. **(ii)** One way slab (simply supported.)	07	CO-4
5	**Pre – stressed concrete**	**(i)** Concept of pre-stressing. **(ii)** Situations where pre-stressed concrete is used. **(iii)** Materials used in pre-stressed concrete and their specifications as per IS. **(iv)** Post-tensioning and pre-tensioning. **(v)** Systems of pre-stressing. **(vi)** Freyssinet, Magnol-Blaten and Lee-Mecall **(vii)** Sketch showing Pre-stressing arrangement for RCC beam (No numerical problems be asked in the examination.)	07	CO-5

References Books:

1. Reinforced cement concrete: AK Jain.
2. Reinforced cement concrete: Sushil Kumar

e-Learning Source:

http://sdnbvc.digimat.in/nptel/courses/video/105105105/L06.html

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2
CO1		3	2					3	2		2
CO2			2					3	3	2	
CO3		3	2					3	3		1
CO4		3	2					3	2	2	2

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**

Effective from Session: 2017							
Course Code	DCMS – 502	**Title of the Course**	Transportation Engg.	**L**	**T**	**P**	**C**
Year	III	**Semester**	V	**3**	**1**	**0**	
Pre-Requisite	DCMS – 502	**Co-requisite**	NA				
Course Objectives	1. Organize, supervise and co-ordinate construction activities of road. 2. Get the basic knowledge of railways.						

Course Outcomes	
CO1	Handle the design, construction, and operation of railroads and mass transit systems that use a fixed guide way.
CO2	Tasks that include determining horizontal & vertical alignment design, station location & design, and construction cost estimating.
CO3	Will be able to design and construct airports.
CO4	Can account for the impacts and demands of aircraft in their design of airport facilities.
CO5	To learn about the design of the railway crossings.

Unit No.	Title of the Unit		Contact Hrs.	Mapped CO
UNIT -I	**Introduction of highway & road geometrics**	Introduction :(i) Importance of Highway transportation. (ii) Functions of IRC. (iii) IRC classification of roads. (iv)Organization of state highways department. Road Geometrics: Glossary of terms used in geometrics and their importance: Right of way, Formation width, Road margin, Road Shoulder, Carriage way, Side slopes, Kerbs, formation levels, Camber and Gradient. (i) Design and average running speed, Stopping and passing sight distances. (ii) Curves necessity, Horizontal and Vertical curves including Transition curves and Super elevation, Methods of providing Super elevation. (iii) 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. (iv)Under pass & over pass (fly overs and bridges).	7	
UNIT -II	**Highway surveys and plans**	Highway Surveys& Plans: 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 information to be collected. (c) Location survey. (d) Standards for preparing the highway plans as per Ministry of Transport. Road Materials: (i) Different types of road materials in use: Soil, Aggregates, and Binders. (ii) Function of soil as Highway sub grade. (iii) C.B.R Method of finding. CBR value and its significance. (iv) Aggregates: Requirements of road aggregates as per IS Specifications. (v) 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 in the base course: (vi) In the base Surfacing :(a) Surface dressing. (b) (i) Premix carpet. (ii) Semi dense carpet (S.D.C) (c) Asphalt concrete. (d) Grouting. Maintenance of Track.	10	
UNIT -III	**Road pavements**	(i) Road pavement: Flexible and rigid pavement, their merits and demerits, typical cross- sections, Functions of various components. (ii) Preparation of sub grade. Methods of checking camber, Gradient and Alignment as per recommendations of IRC, Equipment used for sub grade preparation. (iii) Flexible pavements: Subbase necessity and purpose. Purpose of Stabilization. Types of Stabilization :(a) Mechanical stabilization. (b) Lime stabilization. (c) Cement stabilization. (iv) Base course: (a) Brick soling. (b) Stone soling. (c) Metaling: water bound macadam and bituminous macadam. (v) Methods of constructions as per Ministry of Surface and Transport, Government of India, specifications and quality control; equipment(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.	9	
UNIT -IV	**Introduction of railways**	Permanent Way: Definition of a permanent way, components of a permanent way, sub grade, ballast, sleepers, rails, fixtures and fastenings. Concept of gauge and different gauges present in India. Suitability of these gauges under different conditions. (i) Rails: Function of rails. Different types of rail sections-double header, bull headed and flat footed their standard length, weights and comparison. Creep: Its definition, causes, effects and 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 prestressed 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 types of sleepers with details of fixtures and fasteners used.	8	
UNIT -V	**Super-elevation & points and crossings**	Super-elevation-its necessity and limiting value. Definition of equilibrium cant and cant deficiency, Widening of gauge on curves. Points and Crossings: Necessity and details of arrangement, sketch of a turnout definition of 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	
References Books:				

1. Highway Engineering: Khanna& Justo
2. Transportation Engineering: Kamala
e-Learning Source:
1. https://www.youtube.com/live/vfZpW-GyyME?si=4Xm4OF8I2KO-Vn40
2. https://www.youtube.com/live/Ne3axBwr4C4?si=-Z7GVbc7fW0WBDkA

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1		3		2					2	2		3		
CO2		3	2		2	2			2	2			2	
CO3	2	3	3				2		2	2				1
CO4		3	3			2		2	3			1		
CO5		3				3				3				3

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**

Effective from Session: 2017							
Course Code	**DCMS-503**	**Title of the Course**	**CONSTRUCTION EQUIPMENT & MAINTENANCE**	**L**	**T**	**P**	**C**
Year	III	**Semester**	V	**03**	**01**	**00**	
Pre-Requisite	**DCMS-503**	**Co-requisite**	NA				
Course Objectives	1. Study and understand the various maintenance works like RCC, Steel Work, Road and Building Maintenance. 2. Select suitable construction equipment for execution of various constructions activities.						

Course Outcomes	
CO1	Know the different construction equipment.
CO2	Know the uses of construction equipment.
CO3	Know the maintenance technique of different construction project.
CO4	Able to handle the different construction conditions.
CO5	Developing skills to identify and address defects in road and building maintenance, including WBM, bituminous, and concrete roads, routine building repairs, water supply systems, drainage, and sewer maintenance, with a focus on inspection, detection, and repair procedures.

Unit No.	**Title of the Unit**		**Contact Hrs.**	**Mapped CO**
Unit-I	**Hoisting equipment, conveying equipment & excavation equipment**	Hoisting equipment: Principle and working of Tower cranes, Crawler cranes, Truck Mounted cranes, Gantry cranes, Mast cranes, Derricks. Conveying equipment: Working of belt conveyors. Types of Belts and Conveying mechanism. Capacity and use of Dumpers, tractors and trucks. Excavation equipment: Use, Working and output of Bulldozers, Scrapers, Graders	8	
Unit-II	**Compacting equipment, concrete mixers& equipment for transportation of concrete**	Compacting equipment**:** Use and types of rollers. Rammers: Use and working. Concrete mixers: Types of concrete mixers. Weigh batching equipment, Equipment for transportation of concrete: Trolleys, Lifts, Transit mixers, Concrete vibrator, Stone crushers: Types of stone crushers, capacity and working.	8	
Unit-III	**Miscellaneous equipment & equipment management**	Miscellaneous equipment: Pile driving equipment, Pile hammers, selection of hammers. Bitumen paver, Grouting equipment, Floor polishing machine. Equipment management: Standard equipment, special equipment, selection of equipment, owning and operating cost of construction equipment. Economic life of construction equipment. Preventive maintenance of equipment, breakdown maintenance of equipment.	8	
Unit-IV	**RCC maintenance& steel work maintenance**	RCC Maintenance: Common defects and their causes. Cracking of hardened concrete. Repair of Cracks: Ordinary procedure, Polymer based repairs, Resin based repair. Repair and strengthening of column, Concrete floor slab and beams. Leak scaling. Steel Work Maintenance: Repainting of iron and steel work. Defects of painting.	7	
Unit-V	**Road maintenance& building maintenance**	Road Maintenance: Defects and maintenance in WBM, Bituminous and Concrete Road. Building Maintenance: Inspection of a building; routine building maintenance. Patch repairs for plaster, Leakage through the roofs, Defects of floors and repair. Special repair cases in a building e.g. broke WC, Drain and sewer pipe to be replaced, opening to be made in existing wall, cleaning of choked residential Sewer Line. Replacement of broken WC gully trap. Departmental procedure for repair of building. Water Supply Distribution: Method to detect leakage. Maintenance of valves, Maintenance of house pipeline and Drainage System. Sewer Maintenance.	9	

References Books:

1. Construction Planning and equipment: R. Satya Narayana and S. C. Saxena
2. Construction planning, equipment and methods. L. Peurifoy

e-Learning Source:

1. https://www.youtube.com/watch?v=ONlgYeiw1U4

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13	PSO1	PSO 2	PSO3
CO1		3	2					2	3		3		1	1		
CO2		3	3					2	3		1		1		2	
CO3		3	2						3		3		1			
CO4		3	3	1					3	2			1			
CO5		3	2												2	

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**

Effective from Session: 2017							
Course Code	**DCE-504**	**Title of the Course**	**IRRIGATION ENGINEERING**	**L**	**T**	**P**	**C**
Year	III	**Semester**	V	**03**	**01**	**00**	
Pre-Requisite	**DCE-504**	**Co-requisite**	NA				
Course Objectives	Irrigation engineering aims to maximize crop yield and quality by providing water to crops at the right time and in the right quantity.						

Course Outcomes	
CO1	Apply the knowledge of irrigation engineering to determine crop water requirement
CO2	Explain the dams, reservoir and barrage and their utilities.
CO3	Describe canal regulation work, cross drainage work, problems of water logging and their prevention.
CO4	Understanding the functions, necessity, and design aspects of hydraulic structures like aqueducts, siphons, super passages, level crossings, inlets, outlets, and dams (earthen, masonry, and concrete), including their construction, causes of failure, and spillway design.
CO5	Gaining knowledge on the causes, effects, detection, prevention, and remedies of drainage issues, understanding surface and sub-surface drainage systems. Exploring major irrigation projects in India, and learning the aim, methods, and advantages of groundwater recharge, with practical

Unit No.	**Title of the Unit**		**Contact Hrs.**	**Mapped CO**
1	Introduction	Definition of irrigation. Necessity of irrigation. History of development of irrigation in India. Types of irrigation Sources of irrigation water. Rain Fall & Run – Off: Definition of rainfall & run-off, catchments area, Dicken's & Ryve's formulae. Types of rain gauges – Automatic & Non - Automatic Stream gauging. Water Requirement of Crops: Definition of crop season Duty, Delta and Base Period, their Relationship Gross command area, culturable command area Intensity of Irrigation, Irrigable area Water requirement of different crops- Kharif and Rabi	8	CO1
2	Lift Irrigation	Types of Wells, shallow & deep well, aquifer types, ground water flow, construction of open wells and tube wells. Yield of an open/tube well and problems Methods of lifting water - manual and mechanical devices, use of windmills. Flow Irrigation: Irrigation canals, Perennial Irrigation, Different Parts of irrigation canals and their functions. Sketches of different canal cross-sections. Classification of canals according to their Alignment. Design of irrigation canals - Chezy's formula, Mannings formula, Kennedy's and Lacey's silt theories and equations, comparison of above two silt theory's, equations, critical velocity ratio. Use of Garrets and Lacey's charts. Various types of canal lining - Advantages & disadvantages	8	CO2
3	Canal Head Works	Canal Head Works and Regulatory Works: Definition, object, general layout, functions of different parts. Difference between Weir and Barrage Regulatory Works: Functions and explanation of terms used. Cross and Head regulators. Falls. Energy dissipaters. Outlets-Different types. Escapes.	8	CO3
4	Cross Drainage Works	Functions and necessity of the following types: Aqueduct, Syphon, Super passage, Level crossing, inlet and outlet. Constructional details of the above Dams: Earthen dams-types, causes of failure Classification into masonry & concrete dams, Labeled cross-section of gravity dam. Spillway.	8	CO4
5	Water Logging and Drainage	Definition causes and effects, detection, prevention and remedies. Surface and sub-surface drains and their layout. Major Irrigation Projects in India Practice: Visits to at least one of the Irrigation Projects and write specific report about the same. Ground Water Recharge: Aim, Method and Advantage.	8	CO5

References Books:

1. Irrigation Engg : B.C. Punamia
2. Irrigation Engg: Sushil Kumar

e-Learning Source:

1. https://www.youtube.com/watch?v=ONlgYeiw1U4

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	2		2	1		2		2			3			
CO2	2	2	2		2			2			1		2	
CO3	2	3	2		2	2		2			3	1		
CO4	2													
CO5	2		2								2		2	

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**

Effective from Session: 2017							
Course Code	DCE-505	**Title of the Course**	Surveying-II	**L**	**T**	**P**	**C**
Year	III	**Semester**	V	**03**	**01**	**00**	
Pre-Requisite	DCE-505	**Co-requisite**	NA				
Course Objectives	Students should be able to know about the advance survey equipment & set out circular curve in the field.						

Course Outcomes	
CO1	Handle various survey instruments for a particular survey work.
CO2	Carryout various civil engineering survey works.
CO3	Collect and analyze survey data for preparing drawings and maps.
CO4	Apply checks for errors elimination and Carry-out survey work using theodolite and total station.
CO5	Perform setting of horizontal curves on field.

Unit No	Title of the Unit		Contact Hrs	Mapped CO
Unit-I	**PLANE TABLE SURVEYING**	**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) leveling (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. Errors in plane table survey and precautions to control them. Testing and adjustment of plane table and alidade.	8	CO-1, CO-3
Unit-II	**CONTOURING**	**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.	8	CO-3, CO-2
Unit-III	**THEODOLITE SURVEYING**	**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 minimize them, Limits of precision in theodolite traversing. Principle and working of a micro-optic theodolite. Brief introduction to tachometry	8	CO-4, CO-1,
Unit-IV	**TOTAL STATION & AUTO LEVEL**	**Total Station & Auto Level:** Working and application of total station and auto level. **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.	6	CO-5, CO-2
Unit-V	**CURVES**	**Setting out of simple circular curve:(a)** By linear measurements only(i) Offsets from the tangents. (ii) Successive bisection of arcs. (iii)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.	10	CO-5

References Books:

1. Surveying Engg : B.C. Punmia, Vol-1 &Vol-2
2. Surveying Engg: S.K. Duggal ,Vol-1

e-Learning Source:

1. https://www.youtube.com/watch?v=8IiBetSgAOs&list=PLCYhGkOwO39hIDG9dA3YtXe5dftVGL7po

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	2	2	2	2	1	2	2			1	3	
CO2	3	3	2	1	2	1	2	1	1		1		2
CO3	2	3	2	1	2	2	2	1	2		1		1
CO4	2	1	2	3	2	2	1				2	3	
CO5	3	3	3	2	2	1	3				2	2	

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	Sign & Seal of HoD

Effective from Session: 2017							
Course Code	**DCMS-506**	**Title of the Course**	**PROJECT MANAGEMENT IN CONSTRUCTION**	**L**	**T**	**P**	**C**
Year	III	**Semester**	VI	**03**	**01**	**00**	
Pre-Requisite	NONE	**Co-requisite**	NONE				
Course Objectives	This course is aimed at providing basic knowledge in the areas of various management techniques for successful completion of construction projects and the concepts of quality assurance and control techniques in construction.						

Course Outcomes	
CO1	Describe the process and purpose of Management in construction organization teams.
CO2	Use scheduling technique for construction project for effective utilization of resources.
CO3	Employ appropriate practices to organize and manage safety and quality assurance of a construction project
CO4	Demonstrate the understanding of management fundamentals and traditions followed in construction industry.
CO5	Demonstrate the understanding of Project Procurement Management, planning and material management.

Unit No.	**Title of the Unit**		**Contact Hrs.**	**Mapped CO**
Unit-I	**Introduction**	Introduction to project management Processes-Initiating, Planning, Executing, Controlling, 08 and Closing processes; Project Integration Management- Project plan development, Project plan execution, and Overall change control.	10	CO1
Unit-II	**Project Scope Management& Project Time Management-**	Project Scope Management -Initiation, Scope planning, Scope definition, Scope verification, and Scope change control; Project Time Management-Activity definition- work breakdown structure, Activity sequencing– scheduling logic, precedence diagramming method, arrow diagramming method, Activity duration estimation, Schedule development and analysis - critical path method.	10	CO2
Unit-III	**Project Cost Management**	Project Cost Management -Resource planning, Cost estimating Quantitative Methods in Construction Management: Introduction and concepts of probability and statistics, CPM/PERT techniques	6	CO3
Unit-IV	**Project Resource Management& Project Quality Management**	Project Resource Management -Resource aggregation, Resource leveling–method of moments, double moments. Project Quality Management – Quality planning, Quality assurance, and Quality control; Project Risk Management-Risk identification, Risk quantification	8	CO4
Unit-V	**Project Procurement Management**	Project Procurement Management - Procurement planning, Solicitation planning, Solicitation. Material Management; Value Management; Knowledge Management.	6	CO5

References Books:

1. Project management in construction :S. M. Levy
2. Handbook of Construction Management: JoyP.K

e-Learning Source:

https://archive.nptel.ac.in/courses/105/104/105104161/

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	2	3									1	3		
CO2	2	3						2				1		
CO3	2	3						2			2		2	
CO4	2	3		1	1	2						1		
CO5	2	3									1		2	

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**

Effective from Session: 2017							
Course Code	DCE-554	**Title of the Course**	CIVIL ENGG. DRAWING – II LAB	**L**	**T**	**P**	**C**
Year	III	**Semester**	V	**0**	**0**	**3**	
Pre-Requisite	DCE-554	**Co-requisite**	NA				
Course objectives	To impart the experimental knowledge of labeled sketches of different Civil Engineering components.						

Course Outcomes	
CO1	Prepare the labeled sketch of different building components on sheets
CO2	Interpret and execute the labeled sketch of different building components on sheets with exposure to CAD
CO3	Prepare the sketch of front elevation and sectional elevation from a given plan.
CO4	Prepare the sketch of plan, front elevation and sectional elevation from line diagram.
CO5	Prepare the labeled sketch of different Civil Engineering components on sheets

Unit No.	Title of the Unit		Contact Hrs.	MappedCO
1	**Experiment No-1**	Preparation of a working drawing (elevation, plan, details of joints at ridge, eaves and other connections) for a riveted steel roof truss resting on a masonry wall for the given span, shape of the truss and the design data regarding the size of the members and the connections. Also calculate the quantity of steel for the truss.	3	CO-1
2	**Experiment No-2**	Tubular Steel Roof Trusses: Types of trusses for different spans. Details of column - truss connection. Simple trusses using tubular sections, North light provision.	3	CO-1
3	**Experiment No-3**	Steel connections (a, b, c, d) riveted and (e) welded all unstiffened. (a) Beam to beam connections (seated and framed) (b) Beam to column (seated and framed) (c) Column base connections (slab base & gusseted base)	3	CO-1
4	**Experiment No-4**	R.C.C. STRUCTURES (On Computer by Auto Cad) (a.) PUBLIC BUILDING: Plan elevation & sections of a public building like School. Hospital, Canteen, Community Hall, guest house. At least double storied showing details of following RCC elements:(i) R.C.C. beam singly reinforced and doubly reinforced giving the size and number of bars, stirrups their size and Spacing. (ii) Details of reinforcement for a RCC square and circular column with isolated square footing. (iii) Details of reinforcement for a cantilever beam with given data regarding the size of the beam and the reinforcement, Anchorage of reinforcement.	3	CO-2
5	**Experiment No-5**	Details of reinforcement in plan and section for a simply supported RCC. One way slab with intermediate support and two-way slab. Bar bending schedule should be prepared. Details of reinforcement of a two storied internal and corner column. In this, the details of reinforcement at the junction with beams must be shown.	3	CO-3
6	**Experiment No-6**	Details of reinforcement of the junction of a secondary beam with the main beam with the given data & Sectional details of T-beam showing details of bars.	3	CO-3
7	**Experiment No-7**	Details of reinforcement for a cantilever retaining wall with the given design data regarding the reinforcement, size and shape of the wall & a simple circular overhead water tank.	3	CO-4
8	**Experiment No-8**	Typical sections of a channel. Typical Cross-section of an unlined and lined channel in cutting, partly cutting and fully in filling. & Typical L-section of a distributary.	3	CO-4
9	**Experiment No-9**	Plan and cross-section of tube well with pump house.	3	CO-5
10	**Experiment No-10**	Plan, cross-section and L-section of a distributary fall with details of wing wall, pitching, flooring and tube well.	3	CO-5

References Books:

1. Lab manual of University Polytechnic Civil Department

e-Learning Source:

1.

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1		PSO2
CO1			3			2			2			1		3
CO2			3			1			2			3		2
CO3			3			2			3			1		1
CO4			3			2			2			2		3
CO5			3			1				3				

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	Sign & Seal of HoD

Effective from Session: 2017							
Course Code	**DCE -555**	**Title of the Course**	**SURVEYIBG – II**	**L**	**T**	**P**	**C**
Year	III	**Semester**	V	**0**	**0**	**03**	
Pre-Requisite	**DCE -555**	**Co-requisite**	NA				
Course Objectives	To impart knowledge and abilities to students to understand basic design philosophy and design of different elements of structure						

Course Outcomes	
CO1	Know about the working of plane table
CO2	Prepare the contour map
CO3	Find the difference of level between the points
CO4	Record and observing necessary observations with the survey instruments.

Unit No.	**Title of the Unit**		**Contact Hrs.**	**Mapped CO**
1	Experiment -1	Setting of the plane table: (a) Marking the North direction. (b) Plotting a few points by radiation method	09	CO-1
2	Experiment- 2	Orientation of the plane table by: (a) Trough compass (b) back sighting.	06	CO-1
3	Experiment -3	Plotting a few points by intersection method	06	CO-4
4	Experiment -4	Two-point problem	06	CO-2, CO-4
5	Experiment- 5	Three-point problem by: (a) Tracing paper method. (b) Bessel's graphical method. (c) Trial and error method.	09	CO-4
6	Experiment- 6	Contouring: Preparing a contour plan by radial line method by the use of a Tangent Clinometers Tachometer.	06	CO-2
7	Experiment -7	To find the difference of level between two distant points by taking staff readings on different stations from the single setting	06	CO-3
8	Experiment -8	To find the difference of level between two points by taking at least four change points.	06	CO-3

References Books:

1. Surveying Engg : B.C. Punmia
2. Surveying Engg : S.K. Duggal

e-Learning Source:

https://archive.nptel.ac.in/content/storage2/courses/105107122/modules/module10/lesson33.htm

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1		3	3	3				2	3		
CO2		3	3	2				2	3		
CO3		3	3	3				2	3		
CO4		3	3	3				2	3		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Name & Sign of Program Coordinator	**Sign & Seal of HoD**