



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Technology and Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B.Tech. in Civil Engineering
(2021-2025)

COURSE CODE	CATE-GORY	COURSE NAME	TEACHING & EVALUATION SCHEME									
			THEORY			PRACTICAL			L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*					
BTCE502	DCC	Transportation Engineering	60	20	20	30	20	3	0	2	4	

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

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Course Educational Objectives (CEOs):

The aim of this course is to teach students about the transportation planning, geometric design of roads, traffic control, railway and harbor, aircraft characteristics and air traffic control.

Course Outcomes (COs):

On completion of this module, the students must be able to:

1. Understand the importance of transportation and traffic planning
2. Perceive the signal design and traffic control measures
3. Get knowledge about component and functioning in railway and harbour engineering.
4. Get knowledge about air traffic control and design of airport components

Syllabus

UNIT I

8 Hrs.

Engineering Surveys for Highway: Cross sectional elements-width, camber, super-elevation, sight distances, extra widening at curves, horizontal and vertical curves; Numerical problems.

UNIT II

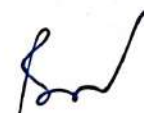
9 Hrs.

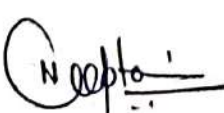
Bituminous & Cement Concrete Pavements: Design of flexible pavements, Design of mixes and stability; WBM; WMM; BM; BC; SDBC; Surface dressing; Interfacial treatment- seal coat, tack coat, prime coat, wearing coats, grouted macadam; Bituminous concrete specification, construction and maintenance; Comparison of flexible and rigid pavements; Use of MORTH code in design; Causes of failures of flexible pavement and rigid pavement.


UNIT III


8 Hrs.

Traffic Engineering: Introduction; Traffic capacity and level of service; Channelized and un channelized intersections; Grade & grade separated intersections; Description of rotary-design elements; Advantages and disadvantages of rotary; Road marking, signs and signals; Types of signals and design of signals.


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UNIT IV

8 Hrs.

Railway Engineering- Role of Indian Railways in National Development; Permanent way, its components and their functions; Rails - types of rails, rail fastenings, concept of gauges, coning of wheels, sleepers functions and materials; Geometric design of railway tracks - gradient and grade compensation, super-elevation.

Docks and Harbour- Definition of terms – Harbours; Ports; Docks; Tides and Waves; Littoral Drift; Depth Sounding; Satellite Ports – requirements; Classification of Harbours - site selection & selection investigation- Speed of water; Dredging; Range of tides; Waves and Tidal currents; Transport with erosion and deposition; General considerations in tunnelling, size and shape of tunnels; Alignment of tunnels; Methods of tunnelling in rocks; Tunnel lining; Ventilation; lighting and drainage in tunnels.

UNIT V

9 Hrs.

Airport Planning and Management: Airport site selection; Air craft characteristic and their effects on runway alignments; Wind rose diagrams; Basic runway length and corrections; Taxi ways and runways; Pattern of runway capacity; Classification of airports; Zoning regulations; Approach area; Approach surface-imaginary, conical and horizontal; Rotating beacon; Boundary lights; Approach lights; Runway and taxiway lighting etc; Instrumental landing system (ILS); Precision approach radar; VOR en-route traffic control; Specifications of National and International airports.

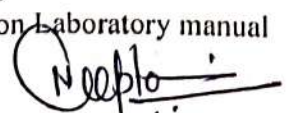
Text Books:


1. Subhash C Saxena, Highway and Traffic Engineering, Jain Book Depot, Delhi, 2020.
2. L.R Kadiyali and N.B. Lal, Principle and Practices of Highway Engineering, Khanna Publications, Delhi, 7th edition, 2019.
3. Railway Engineering, Rangwala, Charotar Publication, 2017
4. Khanna and Justo, Highway Engineering, Nem Chand and Brothers, Roorkee, 10th Edition 2015.


References:

1. Fred L Mann, Principles of highway Engineering, Hoboken, N.J, Wiley ; Chichester : John Wiley, 2009.
2. Transportation Laboratory manual


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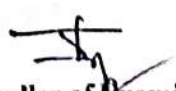
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List of Experiments:

1. Determination of aggregate Crushing Value
2. Determination of aggregate impact value
3. Determination of Los Angeles Abrasion value
4. Determination of California Bearing Ratio values
5. Determination of penetration value of Bitumen
6. Determination of Viscosity of Bituminous Material
7. Determination of softening point of bituminous material
8. Determination of ductility of the bitumen
9. Determination of flash point and fire point of bituminous material
10. Determination of Bitumen content by centrifuge extractor
11. Determination of stripping value of road aggregate
12. Determination of Marshall Stability value for Bituminous mix
13. Determination of shape tests on aggregate


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BTCE503	DCC	Geotechnical Engineering - I	60	20	20	30	20	3	0	2	4

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Course Educational Objectives (CEOs):

On completion of this course, the students must be able to:

1. To impart knowledge to classify the soil based on index properties and to assess their engineering properties based on the classification.
2. To familiarize the students about the fundamental concepts of compaction, flow through soil, stress transformation, stress distribution, consolidation, and shear strength of soils.
3. To impart knowledge about the Lateral Earth Pressure.

Course Outcomes (COs):

On completion of this module, the students must be able to:

1. Understand the various phase diagrams and index properties of the soil.
2. Solve any practical problems related to soil stresses estimation, permeability and seepage including flow net diagram.
3. Understand practical problems related to consolidation settlement and time rate of settlement.
4. Understand the physical significance of effective stress and its relationship with pore pressure.

Syllabus

UNIT I

8 Hrs.

Basic Definitions and Index Properties: Definition, scope of soil mechanics; Historical development, formation of soils; Soil structure (two and three phase system); Index properties water content, void ratio, porosity, unit weight etc; Determination of index properties; Atterberg's limits; Classification systems based on particle size; Consistency limits.

UNIT II

9 Hrs.

Soil Water and Permeability: Soil water; Permeability, determination of permeability in field, laboratory (Falling head and Constant head test); Seepage, seepage pressure; Flow nets, uses of flow net; Effective, neutral, total stresses; Measurement of pore pressure, pore pressure parameters; Critical void ratio; Liquefaction.

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UNIT III

8 Hrs.

Compressibility and Consolidation: Compressibility, consolidation (primary and secondary); Relationship between pressure and void ratio; Theory of one-dimensional consolidation; Consolidation test; Fitting Time curves; Normally and over consolidated clays; Determination of pre consolidation pressure; settlement analysis; Calculation of total settlement.

UNIT IV

8 Hrs.

Stress Distribution in Soils and Shear Strength of Soils: Stress distribution beneath loaded areas by Boussinesq's, Westergaard's analysis; Newmark's influence chart; Contact pressure distribution. Mohr-Coulomb's theory of shear failure of soils, Mohr's stress circle, Measurement of shear strength and parameters (C and ϕ); Shear box test; Triaxial compression test; Unconfined compression test; Vane shear test.

UNIT V

9 Hrs.


Lateral Earth Pressure: Active, passive earth pressure at rest; Rankine's, Coulombs, Terzaghi's, Cullman's theories; Analytical, graphical methods of determination of earth pressures on cohesion less and cohesive soils; Effect of surcharge, water table, wall friction; Arching in soils.

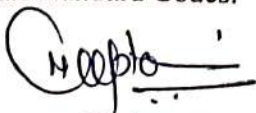
Text Books:


1. Soil Mechanics and Foundations Engineering by Dr. K.R. Arora, Standard Publishers Distributors, New Delhi, 2020.
2. Soil Mechanics and Foundations by Dr. B.C. Punamia, Ashok Kumar Jain, Arun Kumar Jain, Laxmi Publications, New Delhi, 2017.
3. Geotechnical Engineering by C. Venkatramiah, New Age International Publishers, New Delhi, 2017.

References:

1. Soil Mechanics & Foundation Engineering by S.K. Garg, Khanna Publishers, New Delhi, 2003.
2. Geotechnical Engineering laboratory Manual.
3. Relevant Indian Standard Codes.


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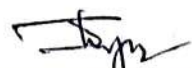
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List of Experiments:

1. To determine the natural moisture content of soil samples.
2. To determine the density of soil by Core Cutter.
3. To determine the specific gravity of soil by Density bottle.
4. To determine the particle size distribution of soil by Sieve analysis.
5. To determine the particle size distribution of soil by Hydrometer.
6. To determine Plastic limit, Liquid limit, Shrinkage limit of given soil sample.
7. To determine the coefficient of permeability of a soil using Constant head and Falling head method.
8. To determine the settlement of soil due to primary consolidation by conducting one dimensional test.
9. To determine the shearing strength of the soil using Direct shear apparatus.


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BTCE504	DCC	Design of Reinforced Concrete Structures - I	60	20	20	30	20	3	0	2	4

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Course Educational Objectives (CEOs):

Student will able

1. To analyze various loads acting on structure.
2. To design different components of RCC structure at site economically & safely.

Course Outcomes (COs):

Student will be able to,

1. Calculate the different types of loadings on the structure.
2. Identify the method of analysis and design.
3. Design the structures and draw the reinforcement detailing

Syllabus

UNIT I

8 Hrs.

Basic Concepts of Reinforced Concrete Design: Study of the strength, behavior, and design of reinforced concrete structures, Load and stresses, load combinations, Working stress and limit state approach; Derivations for moment of resistance and lever arm; Behavior of singly reinforced section; Doubly reinforced section and flanged sections.

UNIT II


9 Hrs.


Reinforced Concrete Beams: Analysis and Design of Singly and Doubly Reinforced rectangular sections, Shear failure, Types of Shear reinforcement, Design of Shear reinforcement, Bond-types, Factors affecting bond Resistance, Check for development length.; Significance of deflection, IS recommendations, Cracking-classification and Types of Cracks, Causes, Mechanism, and IS recommendations. Design of doubly reinforced rectangular beams.

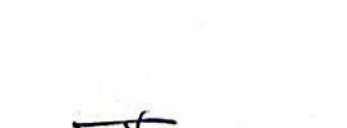
UNIT III

8 Hrs.

Slabs: Design of One-way slab and Two-way slab with different support conditions as per IS:456-2000.


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UNIT IV

8 Hrs.

Compression Member: Design of compression members for axial loads and axial loads plus uniaxial moment.

Design of isolated column footing with constant depth subjected to axial load and moment.

UNIT V

9 Hrs.

Staircase: Design of staircases- stair slab spanning longitudinally and transversely; Design of Slab-less Staircase (Tread Riser Staircase)

Text Books:


1. Reinforced Concrete Design, S. N. Sinha, McGraw Hill Education; Third edition, 2017.
2. Plain and reinforced concrete, B.C. Punamia, Laxmi Publications; Fifth edition, 2015
3. Design of Reinforced Concrete Structures - N. Subramanian, Oxford, 2013
4. Reinforced Concrete: Limit State Design, A K Jain, Nem Chand & Brothers, Roorkee, 2012

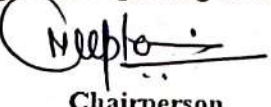
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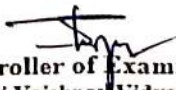
1. Structural Design & Drawing, N.K. Raju, CBS Publishers & Distributors, 2019
2. Reinforced Concrete Structure, Pillai & Menon; Tata McGraw Hill, New Delhi, 2017
3. Limit State Design by P.C. Varghese, Prentice Hall of India, New Delhi, 2008

List of Experiments.

1. Details of reinforcement in a simply supported RCC beam (singly reinforced and doubly reinforced) with the given design data regarding the size and number of bars, stirrups their size and spacing.
2. Details of reinforcement in a one-way slab with the given design data regarding the size and spacing of bars.
3. Details of reinforcement in a two-way slab with the given design data regarding the size and spacing of bars.
4. Details of reinforcement for a RCC square and circular column with footing.
5. Details of reinforcement of staircase (Staircase with waist slab and without waist slab) with the given design data regarding the size and spacing of bars.


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BTCE602	DCC	Structural Analysis - II	60	20	20	0	0	3	1	0	4

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Course Educational Objectives (CEOs):

1. To enable the student to have a good grasp of all the fundamental issues in these advanced topics in structural analysis.
2. To introduce the students to concept of structural stability and advanced methods in structural analysis.

Course Outcomes (COs):

1. Analyze determinate and indeterminate structure with side sway.
2. Apply flexibility matrix to analyze any structure related to civil engineering works.
3. Apply stiffness matrix to analyze any structure related to civil engineering works.
4. Fundamentals of plastic analysis and use the same in practical applications.

Syllabus

UNIT I

8 Hrs.

Sway Analysis: Moment Distribution method in analysis of frames with sway; Analysis of box frames; Analysis of portals with inclined members; Analysis of beams and frames by Kani's Method.

UNIT II


9 Hrs.

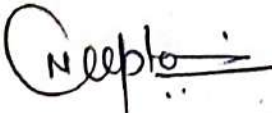
Approximate Methods for Lateral Loads: Analysis of tall frames, wind and earthquake loads; Codal provisions for lateral loads; Approximate analysis of multistoried frames for vertical and lateral loads.


UNIT III


8 Hrs.

Matrix Analysis (Flexibility Matrix): Introduction; Basic Concepts (Axis and Coordinates); Evaluation of flexibility matrix; Analysis of continuous beams using system approach.


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UNIT IV

8 Hrs.

Matrix Analysis (Stiffness Method): Introduction; Basic Concepts (Axis and Coordinates); Evaluation of stiffness matrix; Analysis of Continuous Beams using system approach.

UNIT V

9 Hrs.


Plastic Analysis: Introduction; Shape factor, load factor, Plastic hinge, Plastic analysis of beams and frames.


Text Books:

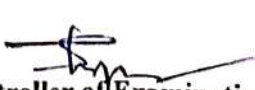
1. B.C Punamia, Ashok Jain., Theory of Structure, Laxmi Publication Delhi, 2017.
2. S. Ramammutham, Theory of Structure, Dhanpat Rai Publishing Company Private Limited- New Delhi; Ninth edition, 2014
3. S.S Bhavikatti, Structural Analysis, - Volume 1 and 2, Vikas Publishing House; Fourth edition, 2013
4. Structural Analysis - A Matrix Approach, by G Pandit , S. Gupta, McGraw Hill Education; 2 edition


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1. Ghali A & Neville M., Structural Analysis - A Unified classical and matrix Approach, Chapman and Hall, New York, 2017
2. Wang C.K. Intermediate structural analysis, McGraw Hill, New York, 2017
3. Kinney Streling J. Indeterminate structural Analysis, Addison Wesley.
4. Reddy C.S., Basic Structural Analysis, Tata McGraw Hill Publishing Company, New Delhi, 2017
5. Norris C.H., Wilbur J.B. and Utkys. Elementary Structural Analysis, McGraw Hill International


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			THEORY			PRACTICAL			L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*					
BTCE505 (1)	DCE	Advanced Surveying	60	20	20	30	20	2	1	2	4	

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

1. To gain experience regarding the advance techniques of surveying.
2. To provide an opportunity to learn how to use and apply the techniques in measurement to collect the data.
3. To impart knowledge about the changing scenario in field of surveying.

Course Outcomes (COs):

1. To learn on the principles of electronic distance measurements, total station, and their accuracy.
2. To learn the use of digital theodolite, digital Planimeter, GIS in as advanced techniques in measurement
3. To get introduced to the concept of photogrammetric in preliminary identification and map making
4. To get introduced to the field of geodesy, coordinate systems, map projections, GPS, its working principles, data collection, data processing and analysis.

Syllabus

UNIT I

8 Hrs.

Modern Surveying Instruments: Types of various modern surveying equipment's; Electromagnetic distance measurement; Digital Theodolite, Total station, Digital Terrain Model (DTM), Digital Planimeter.

UNIT II

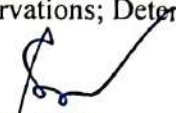
9 Hrs.

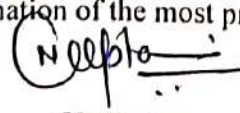
Triangulation: Horizontal and vertical control: Methods, specifications, triangulation, baseline, instruments and accessories, corrections; Satellite stations, reduction to center; Trigonometrically leveling, single and reciprocal observations; Traversing, Gale's table.

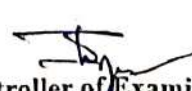
UNIT III


8 Hrs.

Theory of Errors: Introduction, types of errors, definitions; Laws of accidental errors; Laws of weights; Theory of least squares; Rules for giving weights and distribution of errors to the field observations; Determination of the most probable values of quantities.


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			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTCE505 (I)	DCE	Advanced Surveying	60	20	20	30	20	2	1	2	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

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UNIT IV

9 Hrs.

Aerial Photogrammetry: Introduction, principle, uses; Aerial camera, aerial photographs, definitions; Scale of vertical and tilted photograph; Ground co-ordinates, displacements and errors, ground control and procedure of aerial survey; Photomaps and mosaics; Stereoscopes and parallax bar.

UNIT V

10 Hrs.

Remote Sensing: Remote Sensing: Introduction; Principles of energy interaction in atmosphere and earth surface features; Image interpretation techniques, visual interpretation, digital image processing.

DGPS: Introduction and components of DGPS; Elements of Satellite based surveys-Map datums; DGPS receivers; DGPS observation methods and their advantages over conventional methods.


GIS: Definition of GIS, Key Components of GIS and functions of GIS; Spatial data, spatial information system, geospatial analysis; Integration of Remote sensing and GIS and applications.


Text Books:

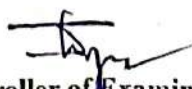
1. Surveying and Leveling-Part-I & II by T.P. Kanetkar and S.V. Kulkarni, Pune Vidyarthi Griha Prakashan, Pune, 2014.
2. Surveying: Problems Solving with theory and objective type questions by Dr. A.M. Chandra, New Age International Publishers N. Delhi, 2005.

References:

1. Higher Surveying by Dr. A.M. Chandra, New Age International Publishers N. Delhi, 2015.
2. Remote Sensing and image interpretation by Lillesand T.M. and Kiefer R.W., Jonathan Chipman, Kindle Edition, Feb.2015.
3. Surveying Vol. II by S.K. Duggal, Tata McGraw Hill Publishing Company Ltd. New Delhi, 2013.


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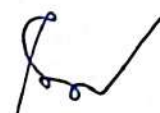
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			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTCE505 (1)	DCE	Advanced Surveying	60	20	20	30	20	2	1	2	4


Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

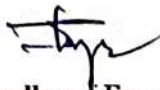
*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.


List of Experiments.

1. Prepare contour maps of ground surface.
2. Determine the water storage capacity in case of probable storage site assuming the height of barriers located at selected places.
3. Determine the optimal alignment for the site giving minimum cross drainage works and decide the proper gradient giving equal quantity of cutting and filling
4. In surveyed terrain, planning of small colony and road networks, water supply & drainage system.
5. Calculate the height of building using Total station.
6. Calculate the height of building using Digital Theodolite.
7. Measure the distance between two points of field using Total station.


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			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTCE 505(2)	DCE	Hydraulics and Hydraulic Machines	60	20	20	30	20	2	1	2	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

1. To learn the fundamentals of Uniform and Non-Uniform flow in open channels.
2. To understand the concepts of specific energy, critical flow, and their applications.
3. To introduce the concepts of Hydropower Engineering
4. To impart knowledge on pumps and turbines.

Course Outcomes (COs):

1. Understand the different types of flows and channels.
2. Analyze the performance of turbines and pumps.
3. Prepare models for prototypes of hydraulic structures and hydropower engineering
4. Knowledge of the selection of turbines and pumps for practical purposes

Syllabus:

UNIT I

10 Hrs.

Turbulent flow: Laminar and turbulent boundary layers and laminar sub-layer, hydrodynamically smooth and rough boundaries, velocity distribution in turbulent flow, resistance of smooth and artificially roughened pipes, commercial pipes, aging of pipes.

Pipe flow problems: Losses due to sudden expansion and contraction, losses in pipe fittings and valves, concepts of equivalent length, hydraulic and energy gradient lines, siphon, pipes in series, pipes in parallel, branching of pipes.

UNIT II

8 Hrs.


Forces on immersed bodies: Types of drag, drag on a sphere, a flat plate, a cylinder and an Aerofoil development of lift, lifting vanes, Magnus effect.

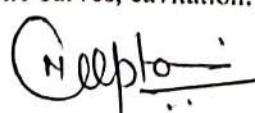
UNIT III

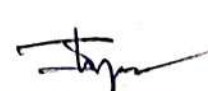
10 Hrs.


Fluid Machines: Turbines: Classifications, definitions, similarity laws, specific speed and unit quantities, **Pelton turbine-** their construction, and settings, speed regulation, dimensions of various elements, Action of jet, torque, power, and efficiency for ideal case, characteristic curves.

Reaction turbines: construction & settings, draft tube theory, runaway speed, simple theory of design and characteristic curves, cavitation.


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			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTCE 505(2)	DCE	Hydraulics and Hydraulic Machines	60	20	20	30	20	2	1	2	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

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UNIT IV

10 Hrs.

Centrifugal pumps: Various types and their important components, Manometric head, total head, net positive suction head, specific speed, shut off head, energy losses, cavitation, Principle of working, and characteristic curves.

Reciprocating pumps: Principle of working, Coefficient of discharge, slip, single acting and double acting pump, Manometric head, Acceleration head

UNIT V

7 Hrs.


Hydropower Engineering: Classification of Hydropower plants – Definition of terms – load factor, utilization factor, capacity factor, estimation of hydropower potential. Intakes, tunnel, penstocks and draft tubes, Water hammer analysis, surge tanks, classification, working principle.

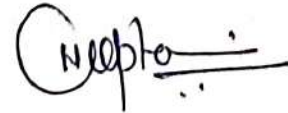
Text Books:

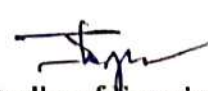
1. Hydraulics and Fluid Mechanics Including Hydraulics Machines by Modi and Seth, Standard Book house, 2019
2. Textbook of Fluid Mechanics and Hydraulic Machines by R K Bansal, Laxmi Publications, 2018.
3. A Textbook of Fluid Mechanics and Hydraulic Machines by R K Rajput, S Chand Publishers, 2016


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1. Flow in Open Channel, K Subramanya, Tata Mc Graw Hill Publication, 2019
2. Fluid Mechanics including Hydraulic Machine by A.K. Jain, Khanna Publishers, 1998


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			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*					
BTCE506	SEC	Civil Engineering Software Lab- II	0	0	0	0	50	0	0	2	1	

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

1. To teach the students to understand the details of STAAD.Pro software package.
2. To enable the students to prepare input data for RCC & Steel structures.
3. To enable the students to design different components of structures.


Course Outcomes (COs):

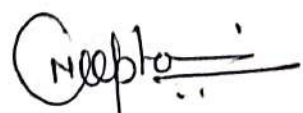
On completion of this course, the students will be able to

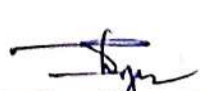
1. Understand the details of STAAD.Pro software package.
2. To prepare input data of STAAD.Pro.
3. Run STAAD.Pro for analysis and design of structures.
4. Design different components of structures.


Syllabus

1. Design of simply supported RCC beam.
2. Design of cantilever RCC beam.
3. Design of continuous RCC beam.
4. Design of simply supported Steel beam.
5. Design of continuous Steel beam.
6. Design of RCC columns with different end conditions.
7. Design of Steel columns with different end conditions.
8. Design of steel trusses.
9. Design of RCC portal frames.
10. Design of steel portal frames.


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			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*					
BTCE50S	PW/I	Project Based Learning	0	0	0	30	20	0	0	4	2	

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

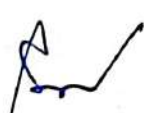
This course provides a comprehensive overview of field applications in Civil Engineering.


Course Outcomes (COs):


1. To acquire knowledge and understanding of implanting theoretical knowledge in various Civil Engineering works.
2. To identify the gap between theoretical knowledge and field applications.
3. To understand the concepts involved in Civil Engineering works.


Syllabus

1. **Industrial Visits:** Structured industrial visits will be arranged in different organizations related to Civil Engineering domain and report of the same should be submitted by the individual student, to form part of the term work.
2. **Literature Survey:** Student will be provided an emerging engineering topic for literature survey from Internet and other media. Based on inputs on the topics students will prepare a report and submit the sample for evaluation after due presentation before the faculty.
3. **Lectures by Professional / Industrial Expert:** Lectures by Professional / Industrial Expert to be organized and report of the same should be submitted by the individual student, to form part of the term work.
4. **Presentation:** Presentation preparation and demonstration on the reports of Industrial Visit and lectures by industrial expert.


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