COURSE STRUCTURE & DETAILED SYLLABUS

ACE - R22

DEPARTMENT OF CIVIL ENGINEERING

II B.Tech I Sem (2022 Batch)

Course Structure
&
Syllabus

ACE
Engineering College
Ankushapur(V), Ghatkesar(M), Medchal Dist - 501 301
(An Autonomous Institution, Affiliated to JNTUH, Hyderabad)
Department of CIVIL ENGINEERING

B.Tech. in CIVIL ENGINEERING
COURSE STRUCTURE & SYLLABUS (ACE-R22 Regulations)
Applicable from AY 2022-23 Batch

ACE
Engineering College

Ankushapur(V), Ghatkesar(M), Medchal Dist - 501 301

(An Autonomous Institution)

B.TECH. FOUR YEAR DEGREE COURSE

CIVIL ENGINEERING

COURSE STRUCTURE & SYLLABUS

II Year I Semester

S.No.	Course Code	Course Title	Periods per week			Credits
			L	T	P	
1	MA304BS	Probability and Statistics	3	1	0	4
2	CE302PC	Building Materials, Construction and Planning	3	0	0	3
3	CE303PC	Engineering Geology	3	0	0	3
4	CE304PC	Strength of Materials - I	3	0	0	3
5	CE305PC	Fluid Mechanics	3	0	0	3
6	CE306PC	Surveying Laboratory - II	0	1	2	2
7	CE307PC	Strength of Materials Laboratory	0	0	2	1
8	CE308PC	Computer Aided Drafting Laboratory	0	0	2	1
9	MC309	Constitution of India	3	0	0	0
		Total Credits	**18**	**2**	**6**	**20**

MA304BS: PROBABILITY AND STATISTICS

B.Tech. II Year I Semester **L T P C**

3 1 0 4

Pre-requisites: Mathematics courses of first year of study.
Course Objectives: To learn

1. The ideas of probability and random variables
2. The discrete probability distributions and their properties
3. The continuous probability distributions and their properties
4. The basic ideas of statistics including measures of central tendency, correlation and regression
5. The statistical methods of studying data samples

Course outcomes: After learning the contents of this paper the student must be able to

1. Apply the concepts of probability and distributions to some case studies.
2. The ideas of probability and random variables and various discrete probability distributions and their properties
3. The ideas of probability and random variables and various continuous probability distributions and their properties
4. The sampling theory and testing of hypothesis and making statistical inferences
5. Correlate the concepts of one unit to the concepts in other units.

UNIT - I: Probability **10 L**

Probability: Sample Space, Events, Counting Sample Points, Probability of an Event, Additive Rule, Conditional Probability, Independence, and the Product Rule, Bayes' Rule.

Random Variables and Probability Distributions: Concept of a Random Variable, Discrete Probability Distributions, Continuous Probability Distributions.

UNIT - II: Expectation and discrete distributions **10 L**

Mean of a Random Variable, Variance and Covariance of Random Variables, Means and Variances of Linear Combinations of Random Variables, Chebyshev's Theorem. **Discrete Probability Distributions**: Binomial Distribution, Poisson distribution.

UNIT - III: Continuous and Sampling Distributions **10 L**

Uniform Distribution, Normal Distribution, Areas under the Normal Curve, Applications of the Normal Distribution, Normal Approximation to the Binomial Distributions.

Fundamental Sampling Distributions: Random Sampling, Some Important Statistics, Sampling Distributions, Sampling Distribution of Means and the Central Limit Theorem, t - Distribution, F – Distribution.

UNIT - IV: Estimation & Tests of Hypotheses **10 L**

Introduction, Statistical Inference, Classical Methods of Estimation, Single Sample: Estimating the mean, standard error of a point estimate, prediction interval. Two sample: Estimating the difference between two means, Single sample: Estimating a proportion, Two samples: Estimating the difference between two proportions, Two samples: Estimating the ratio of two variances.

Statistical Hypotheses: General Concepts, Testing a Statistical Hypothesis, Single sample: Tests concerning a single mean, Two samples: tests on two means, One sample: test on a single proportion. Two samples: tests on two proportions, Two- sample tests concerning variances.

UNIT-V: Applied Statistics **8L**

Curve fitting by the method of least squares, fitting of straight lines, second degree parabolas and more general curves, Correlation and regression, Rank correlation.

TEXT BOOKS:

1. Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers, Keying Ye, Probability & Statistics For Engineers & Scientists, 9th Ed. Pearson Publishers.
2. S C Gupta and V K Kapoor, Fundamentals of Mathematical statistics, Khanna publications.

REFERENCE BOOKS:

1. T.T. Soong, Fundamentals of Probability and Statistics For Engineers, John Wiley & Sons, Ltd, 2004.
2. Sheldon M Ross, Probability and statistics for Engineers and scientists, academic press.

CE302PC: BUILDING MATERIALS, CONSTRUCTION AND PLANNING

B.Tech. II Year I Sem. **L T P C**

3 0 0 3

Course Objectives: The objectives of the course is to

- List the construction material.
- Highlight the smart building materials
- Explain different building service.
- Explain different construction techniques
- Understand the building bye-laws

Course Outcomes: After the completion of the course student should be able to

CO1: Understand the different construction material.
CO2: Understand the different component parts of building and their construction practices and techniques
CO3: Understand the functional requirements to be considered for design and construction of building
CO4: Identify the factors to be considered in planning and construction of buildings
CO5: Plan a building based on the factors and principles of planning.

UNIT - I

Stones and Bricks, Tiles: Building stones – classifications and quarrying – properties – structural requirements – dressing.

Bricks – Composition of Brick earth – manufacture and structural requirements, Fly ash, Ceramics.

Timber, Aluminum, Glass, Paints and Plastics: Wood - structure – types and properties – seasoning– defects; alternate materials for Timber – GI / fiber– reinforced glass bricks, steel & aluminum, Plastics.

UNIT - II

Cement & Admixtures: Ingredients of cement – manufacture – Chemical composition – Hydration - field & lab tests.

Admixtures – mineral & chemical admixtures – uses.

UNIT - III

Building Components: Lintels, Arches, walls, vaults – stair cases – types of floors, types of roofs – flat, curved, trussed; foundations – types; Damp Proof Course; Joinery – doors – windows – materials types.

Building Services: Plumbing Services: Water Distribution, Sanitary – Lines & Fittings; Ventilations: Functional requirements systems of ventilations. Air-conditioning - Essentials and Types; Acoustics – characteristic – absorption – Acoustic design; Fire protection – Fire Hazards – Classification of fire- resistant materials and constructions

UNIT - IV

Mortars, Masonry and Finishing's Mortars: Cement Mortar, Brick masonry – types – bonds; Stone masonry – types; Composite masonry – Brick-stone composite; Concrete, Reinforced brick.

Finishers: Plastering, Pointing, Painting, Claddings – Types – Tiles – ACP.

Form work: Types: Requirements – Standards – Scaffolding – Design; Shoring, Underpinning.

UNIT – V

Building Planning: Classification of buildings ,functional Planning of buildings: Sustainability and concept of Green building, General aspects to consider for planning, bye-laws and regulations, Selection of site for building construction, Principles of planning, Orientation of building and its relation to outside environment.

TEXT BOOKS:

1. Building Materials and Construction – Arora & Bindra, Dhanpat Roy Publications.
2. Building Materials and Construction by G C Sahu, Joygopal Jena McGraw hill Pvt Ltd 2015.
3. Building Construction by B. C. Punmia, Ashok Kumar Jain and Arun Kumar Jain - LaxmiPublications (P) ltd., New Delhi.

REFERENCE BOOKS:

1. Building Materials by Duggal, New Age International.
2. Building Materials by P. C. Varghese, PHI.
3. Building Construction by PC Varghese PHI.
4. Construction Technology – Vol – I & II by R. Chubby, Longman UK.
5. Alternate Building Materials and Technology, Jagadish, Venkatarama Reddy and others; NewAge Publications.

CE303PC: ENGINEERING GEOLOGY

B.Tech. II Year I Sem. **L T P C**

3 0 0 3

Course Objectives: The objective of this Course is

- The overall objective of lecture portion of engineering geology is to demonstrate the importance of Geology in making engineering decisions specially site selection of engineering projects.
- Introduce the fundamentals of engineering properties of earth materials for their use in civil Engineering constructions.
- Learn about minerals, rocks, their modes of formation and their physical and mechanical properties.
- Develop quantitative skills and frame work for solving basic engineering geology problems related to geological features and geological hazards and remedial measures thereof.
- Appreciate the importance of geo-explorations, geological maps and geological reports and develop an understanding for their utilization for safer, stable and economical civil structures.

Course Outcomes: At the end of the course, the student will be able to:

CO1: Understand weathering process and mass movement.

CO2: Be able to identify and classify minerals and rocks using basic geological classification system.

CO3:Analyze civil engineering structure is considerably increased if the geological feature like faults, joints, bedding planes, folding solution channels etc in the rock beds are properly located and suitably treated.

CO4: To knowledge of investigation methods, primarily geophysical methods, for determining the rock mass properties underground, their strengths and weaknesses.

CO5: Apply geological principles for mitigation of natural hazards and select sites for dam's reservoirs and tunnels.

UNIT - I

Introduction: Importance of geology from Civil Engineering point of view. Brief study of case historiesof failure of some Civil Engineering constructions due to geological draw backs. Importance of Physicalgeology, Petrology and Structural geology.

Weathering of Rocks: Its effect over the properties of rocks importance of weathering with reference to dams, reservoirs and tunnels weathering of common rock like "Granite"

UNIT - II

Mineralogy: Definition of mineral, Importance of study of minerals, Different methods of study of minerals. Advantages of study of minerals by physical properties. Role of study of physical properties of minerals in the identification of minerals. Study of physical properties of following common rock forming minerals: Feldspar, Quartz, Flint, Jasper, Olivine, Augite, Hornblende, Muscovite, Biotite, Asbestos, Chlorite, Kyanite, Garnet, Talc, Calcite. Study of other common economics minerals such as Pyrite, Hematite, Magnetite, Chlorite, Galena, Pyrolusite, Graphite, Magnesite, and Bauxite.

Petrology: Definition of rock: Geological classification of rocks into igneous, Sedimentary and metamorphic rocks. Dykes and sills, common structures and textures of igneous. Sedimentary and metamorphic rocks. Their distinguishing features, Megascopic and microscopic and microscopic study of Granite, Dolerite, Basalt, Pegmatite, Laterite, Conglomerate, Sand Stone, Shale, Limestone, Gneiss,Schist, Quartzite, Marble and Slate.

UNIT - III

Structural Geology: Out crop, strike and dip study of common geological structures associating with the rocks such as folds, faults unconformities, and joints - their important types and case studies. Their importance Insitu and drift soils, common types of soils, their origin and occurrence in India, Stabilization of soils. Ground water, Water table, common types of ground water, springs, cone of depression, geological controls of ground water movement, ground water exploration.

UNIT - IV

Earth Quakes: Causes and effects, shield areas and seismic belts. Seismic waves, Richter scale, precautions to be taken for building construction in seismic areas. Landslides, their causes and effect;measures to be taken to prevent their occurrence.

Importance of Geophysical Studies: Principles of geophysical study by Gravity methods. Magnetic methods, Electrical methods. Seismic methods, Radio metric methods and geothermal method. Special importance of Electrical resistivity methods, and seismic refraction methods. Improvement ofcompetence of sites by grouting etc. Fundamental aspects of Rock mechanics and Environmental Geology.

UNIT - V

Geology of Dams, Reservoirs, and Tunnels: Types of dams and bearing of Geology of site in their selection, Geological Considerations in the selection of a dam site. Analysis of dam failures of the past. Factors contributing to the success of a reservoir. Geological factors influencing water Lightness and life of reservoirs - Purposes of tunneling, Effects of Tunneling on the ground Role of Geological Considerations (i.e. Tithological, structural and ground water) in tunneling over break and lining in tunnels.

TEXT BOOKS:

1. Engineering Geology by N. Chennakesavulu, McMillan, India Ltd. 2005
2. Engineering Methods by D. Venkat Reddy; Vikas Publishers 2015.
3. Engineering Geology by S K Duggal, H K Pandey Mc Graw Hill Education Pvt Ltd 2014
4. Principles of Engineering Geology by K.V.G.K. Gokhale – B.S publications

REFERENCE BOOKS:

1. F.G. Bell, Fundamental of Engineering B.S. Publications, 2005.
2. Krynine & Judd, Principles of Engineering Geology & Geotechnics, CBS Publishers &Distribution
3. Engineering Geology by Subinoy Gangopadhyay, Oxford university press.
4. Engineering Geology for Civil Engineers – P.C. Varghese PHI.

CE304PC: STRENGTH OF MATERIALS – I

B.Tech. II Year I Sem.

L	T	P	C
3	0	0	3

Pre-Requisites: Engineering Mechanics

Course Objectives: The objective of this Course is

- To understand the nature of stresses developed in simple geometries such as bars, cantileversand beams for various types of simple loads.
- To calculate the elastic deformation occurring in simple members for differenttypes of loading.
- To show the plane stress transformation with a particular coordinate system for differentorientation of the plane.
- To know different failure theories adopted in designing of structural members.
- To understand the variation of Shear Force & Bending moment in different types of beam for different loading condition.

Course Outcome: On completion of the course, the student will be able to:

CO1: Describe the concepts and principles, understand the theory of elasticity including strain/displacement and Hooke's law relationships; and perform calculations, related to the strength of structured and mechanical components.

CO2: Recognize various types loads applied on structural components of simple framing geometries and understand the nature of internal stresses that will develop within the components.

CO3: Calculate the bending & shear stresses of various beam cross-section for design of beams against bending & shear.

CO4: To evaluate the strains and deformation that will result due to the elastic stresses developed within the materials for simple types of loading.

CO5: Analyze various situations involving structural members subjected to plane stresses byapplication of Mohr's circle of stress.

UNIT – I

Simple Stresses and Strains: Concept of stress and strain- St. Venant's Principle-Stress and Strain Diagram - Elasticity and plasticity – Types of stresses and strains- Hooke's law – stress – strain diagram for mild steel – Working stress – Factor of safety – Lateral strain, Poisson's ratio and volumetric strain - Pure shear and Complementary shear - Elastic modulii, Elastic constants and the relationship between them – Bars of varying section – composite bars – Temperature stresses.

Strain Energy – Resilience – Gradual, sudden, and impact loadings – simple applications.

UNIT – II

Shear Force and Bending Moment: Types of beams – Concept of shear force and bending moment-S.F and B.M diagrams for cantilever, simply supported including overhanging beams subjected to point loads, uniformly distributed load, uniformly varying load, couple and combination of these loads –Point of contra flexure – Relation between S.F., B.M and rate of loading at a section of a beam.

UNIT – III

Flexural Stresses: Theory of simple bending – Assumptions – Derivation of bending equation- Section Modulus Determination of flexural/bending stresses of rectangular and circular sections (Solid and Hollow), I,T, Angle and Channel sections – Design of simple beam sections.

Shear Stresses: Derivation of formula for shear stress distribution – Shear stress distribution across various beam sections like rectangular, circular, triangular, I, T angle and channel sections.

UNIT – IV

Deflection of Beams: Slope, deflection and radius of curvature – Differential equation for the elastic line of a beam – Double integration and Macaulay's methods – Determination of slope and deflection for cantilever and simply supported beams subjected to point loads, U.D.L, Uniformly varying load andcouple -Mohr's theorems – Moment area method – Application to simple cases.

Conjugate Beam Method: Introduction – Concept of conjugate beam method - Difference between a real beam and a conjugate beam - Deflections of determinate beams with constant and different moments of inertia.

UNIT – V

Principal Stresses: Introduction – Stresses on an oblique plane of a bar under axial loading – compound stresses – Normal and tangential stresses on an inclined plane for biaxial stresses – Two perpendicular normal stresses accompanied by a state of simple shear –Principal stresses – Mohr's circle of stresses – ellipse of stress - Analytical and graphical solutions.

Theories of Failure: Introduction – Various theories of failure - Maximum Principal Stress Theory, Maximum Principal Strain Theory, Maximum shear stress theory- Strain Energy and Shear Strain Energy Theory (Von Mises Theory).

TEXT BOOKS:

1. Strength of Materials by R. K Rajput, S. Chand & Company Ltd.
2. Mechanics of Materials by Dr. B.C Punmia, Dr. Ashok Kumar Jain and Dr. Arun Kumar Jain
3. Strength of Materials by R. Subramanian, Oxford University Press

REFERENCE BOOKS:

1. Mechanics of material by R.C. Hibbeler, Prentice Hall publications
2. Engineering Mechanics of Solids by Egor P. Popov, Prentice Hall publications
3. Strength of Materials by T.D.Gunneswara Rao and M.Andal, Cambridge Publishers
4. Strength of Materials by R.K. Bansal, Lakshmi Publications House Pvt. Ltd.
5. Strength of Materials by B.S.Basavarajaiah and P. Mahadevappa, 3rd Edition, UniversitiesPresss.

CE305PC: FLUID MECHANICS

B.Tech. II Year I Sem.

L	T	P	C
3	0	0	3

Course Objectives: The objectives of the course are to

- Introduce the concepts of fluid mechanics useful in Civil Engineering applications.
- Provide a first level exposure to the students to fluid statics, kinematics and dynamics.
- Learn about the application of mass, energy and momentum conservation laws for fluid flows.
- Train and analyses engineering problems involving fluids with a mechanistic perspective isessential for the civil engineering students
- To obtain the velocity and pressure variations in various types of simple flows.

Course Outcomes: Upon completion of this course, students should be able to:

CO1: Understand the broad principles of fluid statics, kinematics and dynamics.
CO2: Understand the broad principles of fluid dynamics & kinematics.
CO3: Understand definitions of the basic terms used in fluid mechanics and characteristics of fluids and its flow.
CO4: Understand classifications of fluid flow.
CO5: Be able to apply the continuity, momentum and energy principles

UNIT – I

Properties of Fluid

Distinction between a fluid and a solid; Properties of fluids – Viscosity, Newton law of viscosity; vapourpressure, boiling point, cavitation; surface tension, capillarity, Bulk modulus of elasticity, compressibility.**Fluid Statics**

Fluid Pressure: Pressure at a point, Pascals law, Hydrostatic law, Piezometer, U-Tube Manometer, Single Column Manometer, U-Tube Differential Manometer, Micromanometers. Pressure gauges, Hydrostatic pressure and force: horizontal, vertical and inclined surfaces.

UNIT - II

Fluid Kinematics

Classification of fluid flow: steady and unsteady flow; uniform and non-uniform flow; laminar and turbulent flow; rotational and irrotational flow; compressible and incompressible flow; ideal and realfluid flow; One, two- and three-dimensional flows; Streamline, path line, streak line and stream tube; stream function, velocity potential function , flow net , One, two- and three-dimensional continuity equations in Cartesian coordinates applications.

Fluid Dynamics

Surface and Body forces -Euler's and Bernoulli's equation; Momentum equation. correction factors.Bernoulli's equation to real fluid flows.

UNIT - III

Flow Measurement in Pipes

Practical applications of Bernoulli's equation: venturi meter, orifice meter and pitot tube, applicationsof Momentum equations; Forces exerted by fluid flow on pipe bend, sudden enlargement in pipes.

Flow Over Notches & Weirs

Flow through rectangular; triangular and trapezoidal notches and weirs; End contractions; Velocity ofapproach. Broad crested weir.

UNIT – IV

Flow through Pipes

Reynolds experiment, Reynolds number**,** Loss of head through pipes, Darcy-Wiesbatch equation, minor losses, total energy line, hydraulic grade line, Pipes in series, equivalent pipes, pipes in parallel, siphon, branching of pipes, three reservoir problem, power transmission through pipes. Analysis ofpipe networks: Hardy Cross method and EPA NET, water hammer in pipes and control measures.

UNIT - V

Laminar & Turbulent Flow

Laminar flow through circular pipes, and fixed parallel plates.

Boundary Layer Concepts

Prandtl contribution, Assumption and concept of boundary layer theory. Boundary-layer thickness, displacement, momentum & energy thickness concepts of laminar and turbulent boundary layers on a flat plate; Laminar sub-layer, smooth and rough boundaries. Local and average friction coefficients. Separation and Control. Drag and Lift and types of drag, magnus effect.

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TEXT BOOKS:

1. Fluid Mechanics by Modi and Seth, Standard Book House.
2. Fluid Mechanics and Hydraulic machines by Manish Kumar Goyal, PHI learning Private Limited,2015.
3. Fluid Mechanics by R.C. Hibbeler, Pearson India Education Services Pvt. Ltd.

REFERENCE BOOKS:

1. Fluid Mechanics – Frank M. White – 8th Edition – Mc Graw Hill Education.
2. *Theory and Applications of Fluid Mechanics, K.Subramanya, Tata McGraw Hill
3. Introduction to Fluid Mechanics and Fluid Machines by SK Som, Gautam Biswas, SumanChakraborthy, Mc Graw Hill Education (India) Private Limited
4. Fluid Mechanics and Machinery,C.S.P. Ojha, R. Berndtsson and P. N. Chadramouli, OxfordUniversity Press, 2010
5. Fluid mechanics & Hydraulic Machines, Domkundwar & Domkundwar Dhanpat Rai &Co
6. Fluid Mechanics and Hydraulic Machines, R. K. Bansal, Laxmi Publication Pvt Ltd.

CE306PC: SURVEYING LABORATORY – II

B.Tech. II Year I Sem. **L T P C**

0 0 2 1

Course Objectives:

1. Student will be able to learn and understand the various basic concept and principles used insurveying like Chain Surveying, Compass Surveying, Plane Table Surveying, and Levelling Surveying.
2. Student will be able to learn and understand about theodolite and total station in surveying.
3. Student will learn and understand how to calculate Area of plot and Ground.
4. Student will learn and understand about Horizontal Angle, Vertical Angle, Horizontal distanceand Vertical distance to study the ground profile using total station.
5. Student will learn and understand missing line measurement.

Course Outcomes: At the end of the course student will be able to:

CO1: Prepare Map and Plan for required site with suitable scale.

CO2: Prepare contour Map and Estimate the Quantity of earthwork required for formation level forRoad and Railway Alignment.

CO3: Judge which type of instrument to be used for carrying out survey for a Particular Area andestimate the area.

CO4: Judge the profile of ground by observing the available existing contour map.

CO5: Apply knowledge about simple circular curve setting.

CYCLE - I

Theodolite surveying:

1. Measurement of horizontal angles and vertical angles.
2. Distance between two inaccessible points.
3. Measurement of area by theodolite traversing (Gales traverse table).
4. Determination of tachometer constants.
5. Distance between two inaccessible points using the principles of tachometer surveying.
6. Distance between two inaccessible points using the principles of trigonometric surveying

CYCLE - II

Total Station:

7. Area Measurement 8. Stake Out
9. Remote Elevation Measurement
10. Missing Line Measurement
11. Longitudinal & Cross Section Profile
12. Contouring
13. Providing a Simple Circular Curve
14. Demonstration using DGPS

CE307PC: STRENGTH OF MATERIALS LABORATORY

B.Tech. II Year I Sem. **L T P C**

0 0 2 1

Course Objectives:

- To conduct the Tension test, Compression test on various materials
- To conduct the Shear test, Bending test on determinate beams
- To conduct the Compression test on spring and Hardness test using various machines
- To conduct the Torsion test, Impact test on various materials
- To conduct the experiment for verifying Maxwell Reciprocal Theorem.

Course Outcomes: After the completion of the course, students should be able to

CO1: Determine the yield stress, ultimate tensile stress, percentage elongation of steel

CO2: Determine the ultimate shear stress, modulus of elasticity of steel

CO3: Determine the stiffness of the close coiled helical spring and hardness number of mild steel, brass, copper and aluminium.

CO4: Determine the modulus of rigidity and impact strength of steel.

CO5: Determine the compressive strength of brick & concrete.

List of Experiments:

1. Tension test
2. Bending test on (Steel / Wood) Cantilever beam.
3. Bending test on simple support beam.
4. Torsion test
5. Hardness test
6. Spring test
7. Compression test on concrete.
8. Impact test
9. Shear test
10. Verification of Maxwell's Reciprocal theorem on beams.
11. Use of electrical resistance strain gauges.
12. Continuous beam – deflection test.

CE308PC: COMPUTER AIDED DRAFTING LABORATORY

B.Tech. II Year I Sem.

L	T	P	C
0	0	2	1

Course Objectives:

- To be able to plan buildings as per NBC**.**
- To understand various types of conventional signs and brick bonds.
- To draw the plan section and elevation for doors, trusses and staircases.
- To use AutoCAD tools to draw building plans, sections and elevations from a given line diagramand specifications.
- To develop working drawings of residential buildings & services.

Course Outcomes: After completion of the course, the student should be able to

CO1: Plan buildings as per NBC.

CO2: Use different Commands of selected drafting software to draw Conventional signs and brick bonds, Plan, Section and Elevation of buildings.

CO3: Draw section and elevation of panelled doors and trusses & detailing of stair cases.

CO4: Develop and draw single /two storey residential building and public building as per the Building by-laws.

CO5: Draw Electrical layout, Plumbing layout for residential buildings.

List of Experiments:

1. Planning Aspects of Building systems as per National Building Code (NBC).
2. Brick bonds: English bond & Flemish bond – Odd and Even courses.
3. Developing plan and section of dog-legged staircase.
4. Developing plan of single storied residential building.
5. Developing section and elevation of single storied residential building.
6. Developing plan of single /two storied Residential building as per Building by-laws.
7. Developing plan of public building as per building by-laws.
8. Developing section and elevation of public building.
9. Development of working drawing of building –Electrical Layout.
10. Development of working drawing of building – Plumbing Layout.

TEXT BOOKS:

1. Computer Aided Design Laboratory by M. N. Sesha Praksh & Dr. G. S. Servesh –LaxmiPublications.
2. Engineering Graphics by P. J. Sha – S. Chand & Co.
3. Civil Engineering Drawing-I by N. Sreenivasulu, S. Rama Rao – Radiant Publishing House.
4. Civil Engineering Drawing-II by N. Sreenivasulu – Radiant Publishing House.

REFERENCE BOOKS:

1. Engineering Graphics by P. J. Sha - S. Chand & Co
2. Civil Engineering Drawing-I by S. Mahaboob Basha – Falcon Publishers
3. Building drawing by M. G. Shah - Tata McGraw-Hill Education
4. Structural Engineering Drawing by S. Mahaboob Basha – Falcon Publishers.

MC309: CONSTITUTION OF INDIA

B.Tech. II Year I Sem.

L	T	P	C
3	0	0	0

COURSE OBJECTIVE: Students will be able to:

1. Understand the premises informing the twin themes of liberty and freedom from a civil rights perspective.
2. To address the growth of Indian opinion regarding modern Indian intellectuals' constitutional role and entitlement to civil and economic rights as well as the emergence of nationhood in the early years of Indian nationalism.
3. To address the role of socialism in India after the commencement of the Bolshevik Revolution in 1917 and its impact on the initial drafting of the Indian Constitution.
4. To address the federal structure and distribution of legislative and financial powers between unions and states.
5. Understand the scheme of fundamental rights.

COURSE OUTCOME: Students will be able to:

1. Discuss the growth of the demand for civil rights in India for the bulk of Indians before the arrival of Gandhi in Indian politics.
2. Discuss the intellectual origins of the framework of argument that informed the conceptualization of social reforms leading to revolution in India.
3. Discuss the circumstances surrounding the foundation of the Congress Socialist Party [CSP] under the leadership of Jawaharlal Nehru and the eventual failure of the proposal of direct elections through adult suffrage in the Indian Constitution
4. Discuss the passage of the Hindu Code Bill of 1956.
5. Discuss the judicial activism and its historic contributions in the world.

Unit - 1

History of Making of the Indian Constitution- History of Drafting Committee.

Unit - 2

Philosophy of the Indian Constitution- Preamble Salient Features

Unit - 3

Contours of Constitutional Rights & Duties - Fundamental Rights: Right to Equality • Right to Freedom • Right against Exploitation • Right to Freedom of Religion • Cultural and Educational Rights • Right to Constitutional Remedies • Directive Principles of State Policy • Fundamental Duties.

Unit - 4

Organs of Governance: Parliament, Composition, Qualifications and Disqualifications, Powers and Functions, Executive, President, Governor, Council of Ministers, Judiciary, Appointment and Transfer of Judges, Qualifications, Powers and Functions

Unit - 5

Local Administration: District's Administration head: Role and Importance, Municipalities: Introduction, Mayor and role of Elected Representative, CEO of Municipal Corporation. Panchayat raj: Introduction, PRI: Zila Panchayat. Elected officials and their roles, CEO ZilaPanchayat: Position and role. Block level: Organizational Hierarchy (Different departments), Village level: Role of Elected and Appointed officials, Importance of grass root democracy.

Unit - 6

Election Commission: Election Commission: Role and Functioning. Chief Election Commissioner and Election Commissioners. State Election Commission: Role and Functioning. Institute and Bodies for the welfare of SC/ST/OBC and women.

TEXT BOOKS:

1. The Constitution of India, 1950 (Bare Act), Government Publication.
2. Dr. S. N. Busi, Dr. B. R. Ambedkar framing of Indian Constitution, 1st Edition, 2015.
3. M. P. Jain, Indian Constitution Law, 7th Edn., Lexis Nexis, 2014.

D.D. Basu, Introduction to the Constitution of India, Lexis Nexis, 2015.

REFERENCE BOOKS:

1. Rajeev Bhargava (ed), Ethics and Politics of the Indian Constitution, Oxford University Press, New Delhi, 2008.
2. Granville Austin, The Indian Constitution: Cornerstone of a Nation, Oxford University Press, Oxford, 1966.
3. Zoya Hassan, E. Sridharan and R. Sudarshan (eds), India's Living Constitution: Ideas, Practices, Controversies, Permanent Black, New Delhi, 2002.

Subhash C. Kashyap, Our Constitution, National Book Trust, New Delhi, 2011.

WEB REFERENCES:

1. Cec.Ugc. Reference Consortium for Educational Communication, New Delhi, India.
2. https://legislative.gov.in/constitution-of-india.
3. https://www.refworld.org/docid/3ae6b5e20.html.

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