Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program: **Bachelor of Engineering**

Branch: **Civil Engineering**   Semester: **IV**

Subject: **Structural Analysis – I**   Code: B020411(020)

Class Tests: **Two (Minimum)**   Assignments: **Two (Minimum)**

ESE Duration: **Three Hours**   Maximum Marks: **100**

Minimum Marks: **35**

Unit-1: Determinate Structures - Determinate vs. Indeterminate structures, plane frames and space frames, Static Indeterminacy - External and Internal, Indeterminacy of rigid and pin jointed frames, rules for determining degree of indeterminacy, Analysis of simple and determinate space trusses. Method of tension coefficient for pin jointed space truss.

Unit-2:Deflection and Slope - Moment curvature relation, the elastic curve, Relation between Loading, SF, BM, Slopeand Deflection, Deflection and slopes of statically determinate beams by Double integration method, Macaulay's method, Area moment method, Introduction ofConjugate beam method.

Unit-3: Strain Energy - Strain energy due to axial load, bending, shear and torsion, Castigliano's theorem for deflection and rotation,Betti's theorem, Maxwell's law of reciprocal deflections, unit load and strain energy method for determination ofdisplacementsof statically determinate beams, pin-joined trusses and rigid frames.

Unit-4: Rolling Loads & Influence Lines - Introduction to Rolling loads, concept of influence lines, influence lines forreaction, shear force and bending moment in simply supported beams, influence lines for forces in trusses, analysis for different types of rolling loads - single concentrated load, several concentrated loads,uniformlydistributed load shorter and longer than the span, Absolute maximum bending moment.

Unit-5: Cables, suspension bridges & arches - Analysis of forces in cables with concentrated and continuous loadings, suspension bridges with three-hinged stiffening girders, Theory of arches - Eddy's theorem, analysis of three-hinged arches.

Course Outcomes:

1. To be able to find out indeterminacies of structures and be capable of differentiating the structures.
2. To be able to find out and apply suitable method for analysis of structures to evaluate displacements.
3. To be capable of applying strain energy method to find displacements of determinate structures.
4. To be able to draw Influence Line Diagram for functions such as reactions at the supports, bending moment and shear force at a section and capable of evaluating maximum values of these functions for various load positions.
5. To be able to analyze suspension bridges and arches.

Text Books:

1. Mechanics of Materials – Dr. B. C. Punmia, Jain & Jain (Laxmi Publications)
2. Theory of Structures - Dr. B. C. Punmia, Jain & Jain (Laxmi Publications)

Reference Books:

1. Theory & Analysis of Structures (Vol. – I & II) – Jain, O.P. and Jain B.K. (Nem Chand)
2. Structural Analysis – R.C. Hibber (Pearson Publication)
3. Structural Analysis – Ghali, A. & Neville, M. (Chapman & Hall Publication. 1974)
4. Elementary Structural Analysis – Willbur and Norris (Tata McGraw Hill)
5. Structural Analysis – Negi L.S. &Jangid R.S. (Tata McGraw Hill)
6. Theory of Structures – Ramamurtham S. & Narayan R. (DhanpatRai Publications)
7. Basic Structural Analysis (Vol. I & II) – Bhavikatti S.S. (Vikas Publishing)

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program: **Bachelor of Engineering**
Branch: **Civil Engineering**   Semester: **IV**
Subject: **Hydraulic Engineering**   Code: B020412(020)
Class Tests: **Two (Minimum)**   Assignments: **Two (Minimum)**
ESE Duration: **Three Hours**   Maximum Marks: **100**
                                                                                Minimum Marks: **35**

UNIT-1: Turbulent flow in pipe - Nature of turbulence, free and wall turbulence, turbulent flow in pipes, equation for velocity distribution over smooth and rough surfaces, energy and momentum correction factor, Resistancecoefficient (Friction factor) and its variation, Colebrook-White equation, Moody's diagram, Explicit equation forfriction factors, concept of equivalent length, pipes in series and parallel, Analysis of pipe network (Hardy-Cross method).

UNIT-2: Boundary Layer Analysis - Boundary layer thickness, boundary layer over a flat plate, laminar boundary layer, turbulent boundary layer, and laminar sub layer, Application of momentum equation, local and average friction coefficient. Fluid flow past submerged bodies Drag and lift, drag on sphere, cylinder and disc, Magnus effect.

UNIT-3: Non-uniform flow in open channel - Specific energy,Specific energy curve, discharge curve, critical flow, analysis of flow over hump and transition, broad crested weir, equation of gradually varied flow,Classification of channel bottom slopes, Classification of surface profile, hydraulic jump and evaluation of its elements in rectangular channel.

UNIT-4: Compressibility effect in pipe flow - Transmission of pressure waves in rigid and elastic pipes, water hammer, **Dimensional analysis and Hydraulic similitude**Dimensional analysis, Buckingham's theorem, importantdimensionless numbers and their significances, geometric, kinematics and dynamic similarity, model study.

UNIT-5: Hydraulic Machines - Turbines: Classification of turbines, draft tube, specific speed, unit quantities, andcharacteristics curves of turbines, and governing of turbine**. Pump**: Classification of pumps, types, efficiencies,specific speed, selection, cavitations, characteristic curves.

Text Books:
1. Fluid Mechanics and Machines – Dr. A.K. Jain (Khanna Publications)
2. Fluid Mechanics and Machines – Dr. R.K. Bansal (Laxmi Publications)
3. Fluid Mechanics – Dr. P.N. Modi (Standard Book House)

Reference Books:
1. Mechanics of Fluid – Irving H. Shames (McGraw Hill)
2. Introduction to Fluid Mechanics – James A. Fay (Prentice Hall India)
3. Fluid Machines – Dr. JagdishLal (Metropolitan Book Company Private Ltd.)

Course Outcome:

At the end of the course the student will be able to:
1. Analyze turbulent flow in pipe and solve problems of pipe network.
2. AnalyzeBoundary layerand calculate drag and lift.
3. Analyze flow in open channel.
4. Apply the Dimensional analysisfor fluid flow problem.
5. Analyze the flow in Turbine & Pumps.

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program: Branch: **Bachelor of Engineering**
Branch: **Civil Engineering**   Semester: **IV**
Subject: **Surveying and Geomatics Surveying**   Code: B020413(020)
Class test: **Two (Minimum)**   Assignments: **Two (Minimum)**
ESE Duration: **Three Hours**   Maximum Marks: **100**
         Minimum Marks: **35**

UNIT-1: Trilateration and Triangulation - Principle of Trilateration, Principle and classification of Triangulation System, Triangulation chains, Station marks and Signals, Satellite station, intersected and Resected points, field work- Reconnaissance, Intervisibillty of station, Angular measurement, Base line measurement.

UNIT-2: Adjustment Computations - Weighting of observations. Treatment of random errors, probability equation, Normal law of error, Most Probable Value, Propagation of errors and variances. Most probable value, Principle of Least square, Observations and correlatives, Normal Equations. Adjustment of triangulation figures

UNIT-3: Tacheometery - Definitions, Principles of stadia systems. Instrument constants, Subtense and Tangential Systems.
Construction and use of Reduction Tacheometers, Range Finders, EDM instruments, Total Station and their uses. Study of Laser Distance Meter.

UNIT-4: Photographic and aerial surveying - Photo theodolite, principle of the method of terrestrial photogrammetry, aerial surveying, scale and distortion of the vertical and tilted photograph, comparison between air photograph and map, Study of GPS, GIS and Remote Sensing.

UNIT-5: Hydrographic surveying - Introduction, shore line survey, soundings methods, gauges, equipment required for hydrographic surveying, sounding party, methods of locating soundings, reduction of soundings and plotting of soundings, problems related to hydrographic surveying.

Text Books:

1. Surveying (Vol. I & II) – Punmia, B.C. (Laxmi Publications, New Delhi, 1996)
2. Surveying (Vol. II & III) – Agor, R. (Khanna publications, Delhi, 1995)
3. Surveying (Vol. I & II) – C. Venkataramaih (Universities Press Hyderabad)
4. Surveying (Vol. II) 4e – S.K. Duggal, McGraw Hill Publications

Reference Books:

1. Surveying (Vol. II & III) – Arora, K.R. (Standard Book House, Delhi)
2. Engineering Surveying Technology – Kennie, T.J.M. and Petrie G. (Blackie & Sons Pvt. Ltd., London, 1990)
3. An Introduction to Remote Sensing and its Applications- Shivangi Somvanshi, Maya Kumari (S.K. Kataria and Sons, New Delhi.
4. Surveying (Vol. I & II) – Kanetkar T.P. (Pune Vidyarthi Griha Prakashan, Pune)

Course Outcomes:

Students will be able to:
1. Deal with the various aspects of Trilateration and Triangulation
2. Do the relevant computations, errors and observations.
3. Gain and apply the knowledge of Tacheometery, various modern survey instruments.
4. Apply the concepts of Photographic and aerial surveying and GPS.
5. Efficiently deal with the Hydrographic surveying.

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program: **Bachelor of Engineering**

Branch:**Civil Engineering**   Semester: **IV**

Subject:**Building Construction**   Code: B020414(020)

Class Tests: **Two (Minimum)**   Assignments: **Two (Minimum)**

ESE Duration: **Three Hours**   Maximum Marks: **100**

Minimum Marks: **35**

UNIT-1:Foundations - Types of foundations, Depth of foundation, contact pressure bellow footing such as strip and isolated footing. Construction of typical cross section for foundation under walls and R.C.C columns. Eccentrically loaded footing, purpose of pile foundation and its classification, well and caisson, shoring and deep cutting, foundation in black cotton soils, under reamed pile, foundation failures and remedial measures.

UNIT-2:Masonry - Technical terms in masonry, classification and brief specifications of stone masonry, bonds in Brick Masonry (English and Flemish), Walls Different types (load bearing and non load bearing walls, cavity –walls and partition walls) .common defects in construction and their effects on strength and performance of walls. Doors, windows and lintels different types based on materials and methods of construction, technical terms, size and locations.

UNIT-3:Floors - Introduction, Ground floors-components of floor, various types, and their suitability. Upper floor, construction of slab floor, R.C.C floor, precast concrete floor, timber floor etc .repair techniques for floor. **Roofs -** Technical terms and different types of pitched and flat roofs. Various roof coverings for Pitched and flat roofs. **Formwork** -Different types of formwork, stripping times.

UNIT-4:Damp Proofing - Causes and effect of Dampness, damp proofing treatment in building, parts of a building likely to be affected most, methods of Damp proofing, material used for damp proofing. **Plastering and Pointing -** Types and considerations during plastering and pointing. **Joints-** Construction, Contraction and Expansion Joints.

UNIT-5:Soundproofing - Materials and Methods of sound proof construction. **Fire protection** –fire resisting properties of materials, fire resistance construction, and requirement for multi-storied building

Text Books:

1. Building Construction – B.C. Punmia (Laxmi Publication Pvt. Ltd.)
2. Building Construction – Sushil Kumar (Standard Publication Distributors)

Reference Books:

1. Building Construction – Gurucharan Singh (Standard Publication Distributors)
2. Building Construction – S. C. Rangwala (Charotar Publishing House, Anand, Gujarat)

COURSE OUTCOME

1. To be able to recognize various parts of sub-structure with their functions.
2. To be able to recognize importance of safety in construction.
3. Identify the factors to be considered in construction of building and develop the construction practice and techniques.
4. Students are to be able to recognize construction procedure with safety procedure in various types of bonds.
5. Students are able to understand the suitability of various types of floors

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program: **Bachelor of Engineering**
Branch:**Civil Engineering**   Semester: **IV**
Subject: **Engineering Geology**   Cod B020415(020)
Class Tests: **Two (Minimum)**   Assignments: **Two (Minimum)**
ESE Duration: **Three Hours**   Maximum Marks:**100**
                                                                      Minimum Marks:**35**

UNIT-1:General Geology - Introduction to the subject of Geology -To understand fundamental concepts of engineering geology, engineering, strength, physical & mechanical properties of minerals, rock forming minerals its objects and methods division of the subject. Age, origin and interior of the earth.

UNIT-2:Mineralogy - Study of the physical properties of minerals, Moho's scale of hardness. The study of following minerals, Silica, Feldspars, Mica Tourmaline, Beryl Hornblende, Asbestos, Garnet, Stibnite, Kiyanite, Graphite, Topaz, Hematite, Iron Pyrites, Magnetite, Limonite, Galena, Malachite, Chalcopyrite :

UNIT-3:Petrology-Igneous rocks, mode of occurrence, structure and texture, classification. Study of Granite, Syentie, Diorite, Gabbro, Dunite, Dolerite, Pegmatite, Graphic Granite, Ryholite, Trachyte, Andesite, Basalt Pumics, Pitch stone, Obsidian.Concordant and Discordant. Sedimentary Rocks formation, classification. The study of : Laterite, Bauxite, Conglomerate Breccia, Sandstones (Ferruginous, Ripple Marks, Dentritic Markings), Grit, Arkose, Shale, Mudstone, Limestone, Shell and Coralline Limestones, Stalactites and Stalamites.

UNIT-4: Structural Geology - Introduction Folds: Part of fold classification of folds based on different geometrical parameters, Relation between major folds and minor folds. Joints: Types of Joints. Unconformity and Overlap Faults. Effect on out crop of beds, Classification of faults. Criteria for recognition of faults with folds. Morphology of principal types of secondary planer, structure in rocks relation of schistosity and cleavage to folds.

UNIT-5: Engineering Geology - Preliminary Geological Investigations, relation between Geology and Civil Engineering. Engineering properties of rocks and their relation to rock mass deformation. .Landslides, Land subsidence and Geological Hazards, Landslides, its causes, classification and preventive measures, land subsidence, its causes and preventive measures, major geological hazards & geological considerations in design of constructed facilities and infrastructure, mitigation of landslide hazard: A case study.

Text Books:

1. A Textbook of Geology – Mukherjee P.K. (World Press Publishers)
2. Engineering Geology – D.S. Arora (Mohindra Capital Publisher, Chandigarh)

Reference Books:

1. Geology and Engineering – Leggot, R.F. (Mc-Graw Hill, New York)
2. A Geology for Engineers – Blyth, F.G.M. (Arnold, London)
3. Civil Engineering Geology – Cyril Sankey Fox (C. Lockwood and son, U.K.)
4. Engineering and General Geology – Prabin Singh (Katson Publication House)

Course Outcomes:

Students will be able to:
1. Show the knowledge about basic concept of geology.
2. Show knowledge of the Mineralogy and Crystallography
3. Show knowledge of the petrology
4. Understand the structural geology and earthquake.
5. Get the knowledge about the. Engineering geology and landslide.

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program:**Bachelor of Engineering**
Branch:**Civil Engineering**   Semester:**IV**
Subject:**Hydraulics Lab**   Code: B020421(020)
Maximum Marks:**40**   MinimumMarks: **20**

List of Experiments: (At leastTen experiments are to be performed by each student)

1. To study the transition from laminar to turbulent flow and to determine the lower acritical Reynolds's number.
2. To study the velocity distribution in pipe and to compute the discharge by integrating Velocity profile
3. To study the variation of friction factor for pipe flow.
4. To determine the roughness coefficient of an open channel.
5. To determine the coefficient of discharge of a weir.
6. To determine the coefficient of discharge of a venturiflume.
7. Study of the hydraulic jump in an open channel.
8. To determine the coefficient of discharge of a spillway.
9. To study the performance characteristics of Pelton wheel turbine.
10. To study the performance characteristics of Francis turbine.
11. To study the performance characteristics of Kaplan turbine.
12. To study the performance characteristics of variable speed centrifugal pump.
13. To study the performance characteristics of rated speed centrifugal pump.
14. To study the performance characteristics of multistage pump.
15. To study the performance characteristics of reciprocating pump.

Equipment/Machines/Instruments/Tools/Software Required:

- Pipe Flow Apparatus Tilting Flume
- Pelton Wheel Turbine Francis Turbine
- Kaplan Turbine
- Variable Speed Centrifugal Pump Rated Speed Pump
- Multistage Pump
- Reciprocating Pump

Recommended Books:

1. Hydraulics Laboratory Manual – S.K. Likhi (New Age International Ltd.)
2. Fluid Mechanics – JagdishLal (Metropolitan Educational, New Delhi)

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program:**Bachelor of Engineering**
Branch:**Civil Engineering**   Semester:**IV**
Subject:**Surveying and Geomatics Lab**   Code: B020422(020)
Maximum Marks:**40**   Minimum Marks:**20**

List of Experiments: (At leastTen experiments are to be performed by each student)
1. To perform the experiment for reduction to centre from different positions of a satellite station when: (i) Satellite station in north position, (ii) Satellite station in left position.
2. To perform the experiment for reduction to centre from different positions of a satellite station when: (i) Satellite station in south position, (ii) Satellite station in right position.
3. To find the most probable value of angle for combined triangle by method of difference.
4. To find the most probable value of triangles of a quadrilateral shapes by method of correlates.
5. To find the most probable value of triangles by the method of Gauss rule.
6. Adjustment of two connected triangles.
7. Adjustment of quadrilateral by method of least square.
8. Adjustment of geodetic triangles with central station by method of least square.
9. Determination of Tacheometric constants.
10. Determination of elevation and distance when line of sight inclined upward.
11. Determination of elevation and distance when line of sight inclined downward.
12. Determination of elevation and height by tangential method when both angles are angles of elevation.
13. Study of Electronic Digital Theodolite.
14. Study of Total Station.
15. Study of Auto level.
16. Measurement of sides of a triangle using Laser Distance Meter.

Equipment/Machines/Instruments/Tools/Software Required:
- Metric Chain(30 m) Tape (15m, 30 m)
- Ranging Rod (2m, 3m) Plumb bob
- Arrows
- Theodolite
- Electronic Digital Theodolite Auto level
- Total Station
- Leveling Staff (Folding and Non-folding) Wooden Pegs
- Cross Staff
- Laser Distance Meter.

Recommended Books:

1. Surveying (Vol. I & II) – Punmia, B.C. (Laxmi Publications, New Delhi, 1996)
2. Surveying (Vol. I & II) – Kanetkar T.P. (Pune VidyarthiGrihaPrakashan, Pune)

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program: **Bachelor of Engineering**
Branch: **Civil Engineering**   Semester: **IV**
Subject: **Engineering Geology Lab**   Code: B020423(020)
Maximum Marks: **40**   Minimum Marks: **20**

List of Experiments: (At leastTen experiments are to be performed by each student)
1. Identification of granite, pegmatite, syenite megascopic observations.
2. Identification of basalt, gabbro, charnokite, dolerite.
3. Identification of limestone, sand - stone, shale.
4. Identification of conglomerate, breccias, clay.
5. Identification of slate, phyllite, marble.
6. Identification of quartzite, schist, gneiss.
7. A study on simple geological maps
8. To draw a cross section, filling of geological data there in.
9. To make a sketch of faults, with identification of folds, faults and unconformity.
10. A case Study of structural folds, faults and unconformity.
11. A study of Talc, gypsum, calcite, fluorite apatite.
12. A study of feldspar, quartz, topaz, corundum.
13. A study of hornblende, garnet, tourmaline asbestos, olivine.
14. A study of serpentine, barite, muscovite, biotite, orpiment, realgar, sulphur, amethyst & varieties of quartz, zeolite.
15. A study of hematite, magnetite, pyrite, chalespyrite, pyrolusite, psilomelane, beryl, magnesite, bauxite, zincite, galena etc.

Equipment/Machines/Instruments/Tools/Software Required:
- Crystallographic Model
- Wooden Cabinet
- Axis of symmetrical of 6 System
- Planes of symmetrical of 6 System
- Crystallographic Axis & Centre of System
- Mohr Scale of Hardness
- Streak Plates
- Hardness Testing Knife
- Model Showing Strike, Dip, Pitch
- Symmetrical Anticline Showing Axis-Axial Plane
- Asymmetrical Anticline Showing Axis-Axial Plane
- Isoclinals Anticline & Syncline
- Recumbent Fold
- Fan Fold
- Step Fault
- Rock Specimen
- Wooden Specimen Tray
- Polarizing Petrological Microscope
- Mineral Specimens

Recommended Books:
1. Geology and Engineering – Leggot, R.F. (Mc-Graw Hill, New York)
2. Engineering and General Geology – Prabin Singh (Katson Publication House)

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program:**Bachelor of Engineering**
Branch:**Civil Engineering**   Semester:**IV**
Subject:**Virtual Lab**   Code: B020424(020)
Maximum Marks:**40**   MinimumMarks: **20**

Course objective:
The objective of this course is to inculcate a habit of self learning in our students through virtual lab. Virtual Labs is a project initiated by the Ministry of Human Resource Development, Government of India, under the National Mission on Education through Information and Communication Technology. Virtual lab provides remote experimentation which furnishes basic learning skill, and built advanced concepts as well. It provide complete Learning Management System around the Virtual Labs where the students can avail the various tools for learning, including additional web-resources, video-lectures, animated demonstrations and self evaluation.

List of Experiments

Sl.	Name of Virtual Lab	Website link	
A.	Hydraulics and Fluid Mechanics Lab	**http://eerc03-iiith.vlabs.ac.in/** **https://fmc-nitk.vlabs.ac.in/fluid-machinery/**	**(Any 03)**
	• Bernoulli's Experiment • Venturi Meter Experiment • Jets Experiment • Performance Characteristics of Centrifugal Pump • Performance Characteristics of Kaplan Turbine • Performance Characteristics of Pelton Turbine		
B.	Structural Analysis Lab	**http://bsa-iiith.vlabs.ac.in/**	**(Any 03)**
	• Single Span Beams Experiment • Continuous Beams Experiment • Column Analysis Experiment • Portal Frames Experiment • Arches Experiment		
C.	Surveying Lab	**http://sl-iitr.vlabs.ac.in/sl-iitr/**	**(Any 03)**
	• Profile Leveling using Auto Level • Observations of Vertical and Horizontal angles using Total Station • Carry out Contouring in the field • Study of Global Positioning System (GPS) and its Accessories • Observations using GPS		
D.	Strength-of-Materials lab	**http://sm-nitk.vlabs.ac.in/**	**(Any 03)**
	• Charpy Impact Test • Direct Shear Test on Mild Steel Rod • Direct Shear Test on Timber Specimen • Rockwell Hardness Test • Torsion Test on Mild Steel		

Equipment/Machines/Instruments/Tools/Software Required:	
1.	Computer system with good connectivity to Internet, any specific software is not required.

Note:	
1.	Refer Virtual Labs website which is an initiative of ministry of education under the national mission on education through ICT to conduct virtual lab. Link: https://www.vlab.co.in/
2.	It is advised to visit https://www.vlab.co.in/broad-area-civil-engineering frequently for any update and new experiments on the listed subjects.

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program: **Bachelor of Technology**
Branch: **Common to All Branches**   Semester: **IV**
Subject: **Indian Culture and Constitution of India**   Code: B000406(046)
Total Theory Periods: **2/Week**   Total Tutorial Periods: **NIL**
Assignments: **Two (Minimum)**   Total Marks in ESE: **NIL**   Marks in TA: **10**

Objective: The Constitution is the supreme law and it helps to maintain **integrity** in the society and to promote unity among the citizens to build a great nation. The main objective of the Indian Constitution is to promote harmony throughout the nation.

Course Objectives

Upon completion of this course, the student shall be able

- To understand Meaning and concepts of Traditional and Modern of Culture
- To understand Sources of the Study of Indian Culture
- To Enable the student to understand the history and importance of constitution
- To understand philosophy of fundamental rights and duties
- To understand the powers and functions of executive, legislature and judiciary
- To understand the powers and functions of state government
- To understand the recent trends in Indian constitutional and election commission of India.

UNIT-I

Meaning and concepts of Culture: Traditional and Modern concepts of Culture-Notions of Culture in textual tradition, anthropological, archaeological and sociological understanding of the term culture. Elements of Culture, concept of Indianness and value system. Relation between culture and civilization. Historiography and approaches to the study of Indian Culture– Stereotypes, Objectivity and Bias, Imperialist, Nationalist, Marxist and Subaltern. Heritage of India and world's debt to Indian Culture.

UNIT–II

Sources of the Study of Indian Culture: Archaeological: cultural remains, Monuments, Numismatics, Epigraphy; Literary sources and Oral traditions; Foreign Accounts; Archival sources.

UNIT–III

History of Indian Constitution Constitutional History, Preamble salient features, citizenship, Method of Amendment and Recent Amendments. **Rights and Duties** Fundamental Rights and Directive Principles of State Policy. Fundamental Duties. Difference between Fundamental Rights and Directive Principles of State Policy

Union Government a) President-powers and functions. Vice president powers and functions, Prime Minister and council of ministers powers and functions. b) Parliament- Loksabha, Rajyasabha- composition powers and functions. c) Judiciary (Supreme Court) composition powers and functions Judicial Activism

UNIT–IV

State Government a) Governor: powers and functions b) Chief minister: powers and functions c) State Legislative Assembly and Legislative Council- composition powers and functions. d) High Court : composition powers and functions

UNIT–V

Recent Trends in Indian Constitutional a) Basic structure of Indian Constitution. b) Electoral Reforms c) Panchayati Raj system in India.

Books of Reference

1. Dr. P. K. Agrawal Indian Culture, Art and Heritage,

2. P. Raghunadha Rao Indian Heritage and Culture

3. M.V.Pylee, An Introduction to the Constitution of India,NewDelhi,Vikas,2005.

4. Subhash C.Kashyap, Our Constitution: An Introduction to India's Constitution and constitutional Law, New Delhi, National Book Trust, 2000.

5. Durga Das Basu, Introduction to the Constitution of India ,NewDelhi,Prentice Hall of India,2001.

6. D.C.Gupta, Indian Government and Politics,VIII Edition,New Delhi, Vikas, 1994.

7. V.D.Mahajan, Constitutional Development and National Movement inIndia, New Delhi, S. Chand and Co., latest edition.