



# ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR



(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

## B.Tech. Scheme of Examination & Syllabus 2023-24

### CIVIL ENGINEERING

#### THIRD SEMESTER

Sr No	Course Code	Course Title	Hours per Week			Credits	Maximum Marks		
			L	T	P		Continual Assessment	End Sem Examination	Total
1	CV301T	Solid Mechanics	3	-	-	3	30	70	100
2	CV301P	Solid Mechanics Lab	-	-	2	1	25	25	50
3	CV302T	Transportation Engineering	3	-	-	3	30	70	100
4	CV302P	Transportation Engineering Lab	-	-	2	1	25	25	50
5	CV303T	Environmental Engineering	3	-	-	3	30	70	100
6	CV303P	Environmental Engineering Lab	-	-	2	1	25	25	50
7	CV304T	Geotechnical Engineering-I	3	-	-	3	30	70	100
8	CV304P	Geotechnical Engineering-I Lab	-	-	2	1	25	25	50
9	CV305T	Hydrology & Water Resources	3	-	-	3	30	70	100
10	H103	Constitution of India	2	-	-	0	Audit		
11	CV306T	Career Development- I	2	-	-	0	Audit		
Total			19	-	8	19	250	450	700

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Chairman - BoS	Dean – Academics	Date of Release	Version	



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## B.Tech. Scheme of Examination & Syllabus 2023-24

### CIVIL ENGINEERING

#### THIRD SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
CV301T	Solid Mechanics	3	-	-	3	30	70	100
<b>Course Objectives</b>		<b>Course Outcomes</b>						
1. To learn the fundamental principles of strength of materials. 2. To calculate stresses, strains and deformations of structural elements under the external forces.		At the end of the course, the students will be able to- 1. Recognize the concepts of stress and strain for deformable bodies 2. Sketch shear force & bending moment diagrams for beams. 3. Compute bending stress, shear stresses and deflection for a beam under various loads. 4. Understand the shear stress distribution within shafts subjected to torsion. 5. Compute combined stresses for structural members and sketch Mohr's circle of stress.						

<b>Unit I</b>	<b>[11 Hrs]</b>
Concept of simple stresses and strains: Introduction, stress, strain, types of stresses, stress and strain diagram for brittle & ductile material, elastic limit, Hooks law, modulus of elasticity, modulus of rigidity, factor of safety, analysis of tapered rod, analysis of composite section, thermal stress and strain. Longitudinal strain & stress, lateral stresses and strains, Poisson's ratio, volumetric stresses and strain with uni-axial, bi-axial & tri-axial loading, bulk modulus, relation between Young's modulus and modulus of rigidity, Poisson's ratio and bulk modulus. Basic concepts used in design of pressure vessels.	
<b>Unit II</b>	<b>[9 Hrs]</b>
Shear force and bending moment: Types of beam (cantilever beam, simply supported beam, overhung beam etc.). Types of loads (Concentrated and UDL), shear force and bending moment diagrams for different types of beams subjected to different types of loads as well as couple. Relation between load and shear force and bending moment.	
<b>Unit III</b>	<b>[11 Hrs]</b>
Bending stresses in simple beams, assumptions and derivations of simple bending theory, relation between bending moment, bending stress and curvature, homogenous and composite beams Shear stress in simple beams, shear flow and shear stress distribution. Combined effect of BM and shear force. Section modulus for various shapes of beam sections. Deflection of beams: Derivation of differential equation of elastic curve with the assumptions made in it. Deflection and slope of cantilever, simply supported, overhung beams subjected to concentrated load UDL, Relation between slope, deflection and radius curvature in Macaulay's method to determine deflection of beam. Buckling of columns and strut columns. Euler's and Rankine's formula.	
<b>Unit IV</b>	<b>[6 Hrs]</b>
Torsion of circular sections, assumptions and derivation of relations between torsional moment, shear stress and angle of twist, Torsional stress in solid circular sections, torsion in thin walled hollow sections closely coiled, helical spring, Leaf spring. Introduction of torsion in rectangular section.	
<b>Unit V</b>	<b>[8 Hrs]</b>
Principal stresses and strains: Definition of principal planes & principal stresses, analytical method of determining stresses on oblique section when member is subjected to direct stress in one plane in mutually perpendicular two planes, when member is subjected to shear stress and direct stresses in two mutually perpendicular planes, Mohr's circle for representation of stresses.	

#### Text Books

S.N	Title	Authors	Edition	Publisher
1	Strength of Materials	R K Bansal	4 <sup>th</sup> Edition	Laxmi Publications
2	Strength of Materials	S. Ramamrtham	20 <sup>th</sup> Edition	Dhanpat Rai and Sons
3	Strength of Material	R. K. Rajput	7 <sup>th</sup> Edition	S. Chand Publications

#### Reference Books

S.N	Title	Authors	Edition	Publisher
1	Mechanics of Material	Beer and Johnston	8 <sup>th</sup> Edition	Tata McGraw Hill
2	Strength of Materials	U. C. Jindal	2 <sup>nd</sup> Edition	Umesh Publications

		July 2023	1.0	Applicable for 2023-24
Chairman - BoS	Dean - Academics	Date of Release	Version	



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## B.Tech. Scheme of Examination & Syllabus 2023-24

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#### THIRD SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
CV301P	Solid Mechanics Lab	-	-	2	1	CA	ESE	Total
						25	25	50
Course Objectives		Course Outcomes						
-		At the end of the course, the students will be able to- 1. Perform tension, compression, bending, shear and torsion tests on specimens. 2. Perform impact and hardness tests on specimens. 3. Sketch stress diagrams using Mohr's Circle method. 4. Demonstrate stiffness determination of a helical spring						

Expt. No.	Title of the experiment
1	To perform Tension test for a metal specimen.
2	To perform Hardness test on a metal specimen.
3	To perform Impact test on a metal specimen.
4	To perform Torsion test on a metal specimen.
5	To perform Compression test on Bricks
6	To perform Shear test on a metal specimen
7	To perform Bending test on a wooden specimen
8	To perform a test for calculation of deflection of a beam.
9	To determine stresses using Mohr's Circle method.
10	To demonstrate stiffness determination of a helical spring.

#### Text Books

S.N	Title	Authors	Edition	Publisher
1	Relevant BIS Codes	-	-	-
2	Virtual Labs	-	-	-

		July 2023	1.0	Applicable for 2023-24
Chairman - BoS	Dean – Academics	Date of Release	Version	



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## B.Tech. Scheme of Examination & Syllabus 2023-24

### CIVIL ENGINEERING

#### THIRD SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
CV302T	Transportation Engineering	3	-	-	3	30	70	100
<b>Course Objectives</b>		<b>Course Outcomes</b>						
1. To know about Highway, its classification and modern methods of transportation engineering. 2. To understand the design of Highways based on traffic and geometrics. 3. To learn about materials required for construction of Highways. 4. To learn the basics of Bridge Engineering.		At the end of the course, the students will be able to- 1. Classify and plan of the highways and introduce to Intelligent Transportation System. 2. Design the highway based on volume and speed data and Traffic Safety Audit. 3. Design the highway based on geometric features. 4. Understand the highway materials with their properties. 5. Understand the various IRC loadings on bridge.						

<b>Unit I</b>	[7 Hrs]
Highway Development & Planning: Principles of Highway planning, Road development in India Classification of roads. Highway Alignment: Requirements, Engineering Surveys. Current road projects in India; project preparation. Use of intelligent transportation system. Introduction to BRTS, Metro and other modern methods of transportation.	
<b>Unit II</b>	[7 Hrs]
<b>Traffic Studies:</b> Volume studies, speed studies, parking studies and accident studies. <b>Traffic Safety :</b> Causes and types of accidents, Urban traffic management, highway lighting, Traffic safety audit	
<b>Unit III</b>	[8 Hrs]
<b>Highway Geometric Design:</b> Cross Section elements, carriageways, camber, stopping & overtaking sight distances, Horizontal alignment- Curves, design of super elevation, widening, transition curves, vertical curves.	
<b>Unit IV</b>	[8 Hrs]
<b>Highway Materials:</b> Properties of sub grade and pavement component materials, Tests on sub grade soils, aggregates and bituminous materials. Highway Maintenance – Material recycling. Application of Geosynthetics.	
<b>Unit V</b>	[7 Hrs]
<b>Bridge Engineering:</b> Classification, identification and site selection. Flood discharge, waterways, scour depth, economic span. IRC classification of Loads, Forces, Stresses: IRC Specification & code of practices, Critical combinations.	

#### Text Books

S.N	Title	Authors	Edition	Publisher
1	Highway Engineering	S.K.Khanna, .E.G.Justo	-	Nem Chand & Bros
2	Principles and Practice of Highway Engineering	L.R.Kadiyali	-	Khanna Publishers
3	Bridge Engineering	Rangwala S. C.	-	Charotar Publications

#### Reference Books

S.N	Title	Authors	Edition	Publisher
1	Principles of Transportation and Highway Engineering	Rao G.V.	-	Tata McGraw Hill
2	Bridge Engineering	S. Ponnuswami	-	Tata McGraw Hill

		July 2023	1.0	Applicable for 2023-24
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## B.Tech. Scheme of Examination & Syllabus 2023-24

### CIVIL ENGINEERING

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Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
CV302P	Transportation Engineering Lab	-	-	2	1	CA	ESE	Total
						25	25	50
Course Objectives		Course Outcomes						
-		At the end of the course, the students will be able to- 1. Perform the laboratory tests on natural and treated subgrade. 2. Perform the laboratory tests on materials used for grade course. 3. Perform the laboratory tests on materials used for surface and wearing course. 4. Study the traffic volume, spot speed and prepare report.						

Expt. No.	Title of the experiment
<b>Minimum 10 experiments out of the following.</b>	
1	CBR test on soil to determine the strength of subgrade.
2	CBR test on the treated soil (soil with admixtures) to determine the improvement in the subgrade.
3	AASHTO classification of subgrade soil and its applications.
4	Aggregate Crushing Value test
5	Aggregate Impact Value test
6	Aggregate Abrasion Value test by Los Angeles Machine.
7	Aggregate Shape Test
8	Aggregate water absorption test
9	Bitumen penetration value test
10	Bitumen ductility test
11	Bitumen softening point test
12	Bitumen Flash and Fire Point test
13	Traffic Volume Calculation (Field work)
14	Spot Speed Studies (Field Work)

#### Text Books

S.N	Title	Authors	Edition	Publisher
1	Relevant BIS codes	-	-	-
2	Highway Engineering	S.K.Khanna, E.G.Justo	-	Nem Chand & Bros

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Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
CV303T	Environmental Engineering	3	-	-	3	30	70	100
<b>Course Objectives</b>		<b>Course Outcomes</b>						
1. To understand the physical, chemical and bacteriological characteristics of water and waste water. 2. To understand the basic principles and processes of various units involved in water and wastewater treatment.		At the end of the course, the students will be able to- 1. Recognize the necessity of water treatment based on its characteristics. 2. Recognize the units' processes involved in water treatment plants. 3. Understand hydraulic design concepts and conveyance of treated water. 4. Recognize the units' processes involved in primary treatment of wastewater. 5. Understand the units' processes involved in secondary treatment of wastewater and working & maintenance of sewer appurtenances.						

<b>Unit I</b>	<b>[8 Hrs]</b>
<b>Introduction to water And its Treatment:</b> Importance and necessity of water supply scheme. All types of water demand, empirical formulae, factors affecting per capita demand, variation in demand, design period, population forecasting methods and examples. <b>Water quality:</b> Physical, Chemical and bacteriological characteristics of water.	
<b>Unit II</b>	<b>[8 Hrs]</b>
Water treatment Objectives, Unit operations and processes in surface water treatment – Principles, functions and preliminary design of flash mixers, clariflocculators, sedimentation tanks, Slow and Rapid sand filters, Aeration, Iron and Manganese removal, Defluoridation and Demineralization – water softening, Disinfection.	
<b>Unit III</b>	<b>[8 Hrs]</b>
<b>Conveyance of water:</b> Types of pipes, joints, fittings, valves & appurtenances. <b>Hydraulic design aspects:</b> Friction, Manning's, Darcy Weishbach & Hazen Williams equation and problem. Concept of rising main, Classification, working, merits and demerits, selection of pumps. <b>Water treatment :</b> Typical layouts and water distribution.	
<b>Unit IV</b>	<b>[7 Hrs]</b>
<b>Introduction to Waste Water Treatment:</b> Study of waste water, black water & grey water. Physical and chemical characteristics of wastewater, significance of BOD, COD, BOD rate constant, Quantity and flow variation. <b>Primary treatment :</b> Principles, functions and preliminary design of screen, grit chambers and primary sedimentation tanks.	
<b>Unit V</b>	<b>[7 Hrs]</b>
<b>Secondary Treatment of Waste Water :</b> Activated Sludge Process and Trickling filter; Other treatment methods – Stabilization Ponds and Septic tanks <b>Sewer Appurtenances :</b> Manhole street inlets, storm water overflows, inverted syphons, flushing and ventilation, Sewer testing and maintenance.	

#### Text Books

S.N	Title	Authors	Edition	Publisher
1	Theory and Practice of water & wastewater treatment	Droste R.L.	-	John Wiley & sons.
2	Environmental Engineering	S. K. Garg	-	Khanna Publishers
3	Water supply & Sanitary Engineering	Rangwala S. C.	-	Charotar Publishers

#### Reference Books

S.N	Title	Authors	Edition	Publisher
1	Environmental Engineering	Peavy H.S., Rowe D.R and George T	-	McGraw Hill
2	Wastewater Engineering, Treatment and reuse	Metcalf and Eddy	-	Tata McGraw Hill

		July 2023	1.0	Applicable for 2023-24
Chairman - BoS	Dean – Academics	Date of Release	Version	



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### CIVIL ENGINEERING

#### THIRD SEMESTER

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						CA	ESE	Total
CV303P	Environmental Engineering Lab	-	-	2	1	25	25	50

Course Objectives	Course Outcomes
-	At the end of the course, the students will be able to- 1. Assess the quality of water. 2. Assess the quality of wastewater. 3. Summarize the treatment processes based on site visit(s).

Expt. No.	Title of the experiment
<b>Part A (Any eight experiments out of the following)</b>	
1	Determination of pH of water
2	Determination of Conductivity of water
3	Determination Chlorides present in water
4	Determination of Alkalinity and Acidity of Water
5	Determination of Turbidity of Water
6	Determination of Dissolved Oxygen of Water
7	Jar Test for determining the optimum coagulant dose
8	Determination of Available Chlorine and Residual Chlorine in Water
9	Study practical of BOD & COD Test of Waste Water
<b>Part B : Brief Report on Water Treatment and Waste Water Treatment Plant Visit.</b>	

#### Text Books

S.N	Title	Authors	Edition	Publisher
1	Water supply and Sanitary Engineering	Birdie G.S.	-	Dhanpat Rai Publications
2	Water supply & Sanitary Engineering	B. C. Punmia	-	Laxmi Publications
3	Other relevant BIS codes	-	-	-

		July 2023	1.0	Applicable for 2023-24
Chairman - BoS	Dean - Academics	Date of Release	Version	



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## B.Tech. Scheme of Examination & Syllabus 2023-24

### CIVIL ENGINEERING

#### THIRD SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
CV304T	Geotechnical Engineering - I	3	-	-	3	30	70	100
<b>Course Objectives</b>		<b>Course Outcomes</b>						
1. To acquire knowledge for classifying the soil based on index and engineering properties. 2. To understand the fundamental concepts of compaction, flow through soil, stress transformation, stress distribution, consolidation and shear strength of soils. 3. To know the stability analysis of infinite and finite slopes.		At the end of the course, the students will be able to- 1. Identify various types of soils and their properties. 2. Explain the flow through soil and its effect for engineering solution. 3. Understand the basic concept of stress distribution in loaded soil medium and soil settlement due to consolidation. 4. Compute the shear strength of soils and understand its importance for providing engineering solutions to the loaded soil medium. 5. Analyze infinite and finite slopes using analytical and/or graphical methods.						

<b>Unit I</b>	<b>[8 Hrs]</b>
<b>Classification of soils:</b> Formation of soil, Soil classification systems, IS and Unified Classification, Soil structure, Phase diagram and functional relationship, Index properties. <b>Compaction of soils:</b> Theory, Laboratory and field tests, Field Compaction methods, Factors influencing compaction of soils.	
<b>Unit II</b>	<b>[7 Hrs]</b>
<b>Effective Stress:</b> Effective stress concepts in soils, Capillary phenomena <b>Permeability:</b> Darcy's law, factors affecting permeability, validity of Darcy's law, Laboratory Determination (Constant head and falling head methods) and field methods. Seepage - Two-dimensional flow, Laplace's equation, Introduction to flow nets.	
<b>Unit III</b>	<b>[8 Hrs]</b>
<b>Stress distribution in soil Mass:</b> Boussinesque equation, point load and uniformly distributed load over rectangular & circular areas, Use of Newmark's charts <b>Consolidation:</b> Compression of laterally confined soil, Terzaghi's 1-D consolidation theory (formation of Differential equation), Determination of coefficient of consolidation, Degree of consolidation. Determination of pre-consolidation pressure, Settlement, Rate of settlement.	
<b>Unit IV</b>	<b>[7 Hrs]</b>
<b>Shear strength of soils:</b> Introduction, Mohr Coulombs theory, Drainage condition, Measurement of shear strength by direct shear test, tri-axial test, unconfined compression test, vane shear test, sensitivity.	
<b>Unit V</b>	<b>[8 Hrs]</b>
<b>Stability Analysis of Slopes:</b> Stability Analysis of Infinite slopes and finite slopes, Effect of Water table, Friction circle method, Use of Taylor's stability number, Method of slices, Fellenious Method and Slope protection measures.	

#### Text Books

S.N	Title	Authors	Edition	Publisher
1	Soil Mechanics and Foundation Engineering	V. N. S. Murthy	-	CBS Publishers
2	Basic and Applied Soil Mechanics	Gopal Ranjan and Rao	-	New Age International
3	Soil Mechanics & Foundation Engineering	K. R. Arora	-	Standard Publications

#### Reference Books

S.N	Title	Authors	Edition	Publisher
1	Principles of Geotechnical Engineering	Brija M. Das	-	Cengage Publishers
2	Relevant BIS Codes	-	-	-

		July 2023	1.0	Applicable for 2023-24
Chairman - BoS	Dean - Academics	Date of Release	Version	





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## B.Tech. Scheme of Examination & Syllabus 2023-24

### CIVIL ENGINEERING

#### THIRD SEMESTER



Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
CV304P	Geotechnical Engineering – I Lab	-	-	2	1	25	25	50

Course Objectives	Course Outcomes
-	At the end of the course, the students will be able to- 1. Conduct tests related to index properties of soils. 2. Conduct tests for In-Situ Density and Compaction Characteristics. 3. Determine engineering properties of soils.

Expt. No.	Title of the experiment
<b>Any 10 experiments out of the following</b>	
1	Moisture content and Specific gravity of soil.
2	Grain size Analysis – (Sieve Analysis)
3	Consistency limit: plastic limit and liquid limit of soil.
4	Hydrometer Analysis
5	Constant Head Permeability test / Falling Head Permeability test
6	Consistency limit of soil (shrinkage limit)
7	Field Density by sand replacement method
8	Field Density by core cutter method
9	Proctor's Compaction Tests
10	Unconfined compression test
11	Direct shear Test
12	Triaxial shear test (Demonstration)

#### Text Books

S.N	Title	Authors	Edition	Publisher
1	Soil Mechanics Laboratory Manual	Brij M. Das	-	Oxford University Press
2	Relevant BIS Codes	-	-	-
3	Virtual Lab	-	-	-

		July 2023	1.0	Applicable for 2023-24
Chairman - BoS	Dean – Academics	Date of Release	Version	



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## B.Tech. Scheme of Examination & Syllabus 2023-24

### CIVIL ENGINEERING

#### THIRD SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
CV305T	Hydrology and Water Resources	3	-	-	3	30	70	100
<b>Course Objectives</b>		<b>Course Outcomes</b>						
To impart the knowledge of hydrology that deals with the occurrence, distribution, movement and properties of water on the earth		At the end of the course, the students will be able to- 1.Analyse the concept of hydrological cycle and the function of precipitation 2.Explain basic terms about infiltration, evaporation and transpiration 3.Understand the concept of runoff from hydrograph analysis and Determine the yield from a catchment 4.Understand the importance of floods for their forecasting by rational and statistical methods 5.Explain the presence of ground water for the availability of use for different purposes and Analyse the ground water recharge						

<b>Unit I</b>	[9 Hrs]
<b>Introduction to Hydrology:</b> Definition, importance, applications in Engineering. Hydrologic cycle, water budget, water resources of India. <b>Precipitation:</b> Definition, types, forms, factors affecting precipitation, measurement, selection of site for rain gauges, density and adequacy of rain gauge stations, optimum number of rain gauges, determination of missing rainfall data, methods of estimation of mean rainfall, test for consistency of rainfall record, mass curve of rainfall, Hyetograph; Depth-Area-Duration Relationship, Frequency of point rainfall.	
<b>Unit II</b>	[9 Hrs]
<b>Infiltration:</b> Definition, mechanism, factors affecting infiltration, measurement, infiltration capacity, infiltration indices and its application. <b>Evaporation:</b> Definition, mechanism, factors affecting evaporation, estimation. <b>Evapotranspiration:</b> Definition, factors affecting Evapotranspiration, measurement, use of Blaney-cridle and Thornthwaite formula.	
<b>Unit III</b>	[9 Hrs]
<b>Runoff:</b> Source, components, factors affecting runoff, basin parameters, estimation methods, classification of streams, measurement of discharge of streams, stage discharge relationship, yield of the river. Flow mass curve, determination of reservoir storage volume. <b>Hydro-graphics:</b> Definition, typical flood hydrograph and its components, baseflow and base flow separation, unit hydrograph theory, S-curve and its use	
<b>Unit IV</b>	[9 Hrs]
<b>Floods:</b> Causes and effects, factors affecting peak flows and its estimation, low flow, basin flood, flood routing and flood forecasting <b>Statistical Methods:</b> Statistics in hydrological analysis, probability and probability distributions, average measure of dispersion, co-relation. Analysis of time series, frequency analysis.	
<b>Unit V</b>	[9 Hrs]
<b>Geo-hydrology:</b> Introduction, occurrence and distribution of ground water. Water table and its maps. Groundwater exploration, confined and unconfined aquifer, porosity, permeability, specific yield, specific retention, Darcy's law, introduction to hydraulic wells, open wells, safe yield test.	

#### Text Books

S.N	Title	Authors	Edition	Publisher
1	Hydrology and Water Resource Engineering	S. K. Garg	-	Khanna publication
2	Engineering Hydrology	Subramaniam	-	Tata McGraw Hill publication
3	Hydrology and Water Resource Engineering	Reddy	-	-
4	Water power engineering	B.C. Punmia	-	Laxmi Publication

#### Reference Books

S.N	Title	Authors	Edition	Publisher
1	Water Resources systems	P R Bhave	-	Narosa Publishing house

		July 2023	1.0	Applicable for 2023-24
Chairman - BoS	Dean – Academics	Date of Release	Version	



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### CIVIL ENGINEERING

#### THIRD SEMESTER

Course Code	Course Name	Th	Tu	Pr	Audit	Evaluation		
						CA	ESE	Total
CV306T	Career Development- I	2	-	-	Internal	50	-	50
<b>Course Objectives</b>		<b>Course Outcomes</b>						
-		-						

	<b>[6 Hrs]</b>
<b>Introduction to Microsoft Excel:</b> Creation of files/Tool Bars, Entering data and basic formula, Formatting, Key shortcuts, Conditional Formatting, Generation of graphs, Applications in Civil Engineering problems	
	<b>[2 Hrs]</b>
<b>Introduction to Microsoft Word:</b> Creation of files, Tool Bars, Formatting, Key shortcuts, Tables, graphs, pictures, etc. Generation of report	
	<b>[4 Hrs]</b>
<b>Introduction to Microsoft Powerpoint:</b> Creation of Files, Toolbars, Generating slides and formatting, Designing, Slide shows, Videos, Hyperlinks, Preparation of PPT on technical or non-technical content, Group presentation	
	<b>[6 Hrs]</b>
<b>Aptitude :</b> Quantitative Aptitude, Mathematical Concepts, Logical Reasoning, Patterns, Sequences etc	
	<b>[2 Hrs]</b>
<b>Introduction to Civil Engineering-related Software :</b> Brief idea about <b>AutoCad SAP, and STAAD</b> Solving simple problem	

#### Text Books

S.N	Title	Authors	Edition	Publisher
1.	Quantitative Aptitude	Dr. R. S. Agarwal	-	S.Chand Publications
2.	Verbal Reasoning	Dr. R. S. Agarwal	-	S.Chand Publications
3.	Non-Verbal Reasoning	Dr. R. S. Agarwal	-	S.Chand Publications

		July 2023	1.0	Applicable for 2023-24
Chairman - BoS	Dean – Academics	Date of Release	Version	



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### CIVIL ENGINEERING

#### THIRD SEMESTER

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
H103	Constitution of India	2	-	-	0	-	-	-
<b>Course Objectives</b>		<b>Course Outcomes</b>						
To sensitize students to the social, political and economic perspective of Indian Society through the study of the Indian Constitution.		At the end of the course students will be able to: 1. Understand the role of constitution in democratic India 2. Know their fundamental rights and duties 3. Understand multiple perspectives using six hat thinking technique. 4. Understand emergency, presidential provisions and electoral politics. 5. Understand the roles and responsibilities of the members of the parliament.						

<b>Unit I</b>	[4Hrs]
1. Constitution - meaning, scope and importance, making of the Indian Constitution 2. Outstanding Features of the Indian Constitution, Unitary and Federal System	
<b>Unit II</b>	[4Hrs]
1. Fundamental Rights and duties 2. Directive Principles of State Policy	
<b>Unit III</b>	[5Hrs]
1. Liberalization, Privatization, Globalization using Six Hat Thinking Technique. 2. Role of Bureaucracy in Modern Society	
<b>Unit IV</b>	[6Hrs]
1. Industrial Democracy 2. Legislative measures for Labour Welfare	
<b>Unit V</b>	[5Hrs]
1. Parliamentary Role Play 2. Discussion of regional, national and International Issues in the student Parliament.	

#### Text Books

S.N	Title	Authors	Edition	Publisher
1.	The Constitution of India	Dr. B. R. Ambedkar	January 2019	Buddham Publishers
2.	The Constitution of India (Coat Pocket Edition)	Gopal Shankararayanan	January 2015	EAstern Book Co.

#### Reference Books

S.N	Title	Authors	Edition	Publisher
1.	Introduction to Constitution of India	Durga Das Basu	21st edition	LexisNexis
2.	Working in a Democratic Constitution: A History of the Indian Experience	Austin Granville	7th edition	Oxford University Press
3.	The Indian Political System	Mahendra Pratap Singh	3rd revised edition	Pearson Education India
4.	A New Look into Social Sciences	Shabbir, Sheikh and Dwadashiwar	3rd edition	S.Chand

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Chairman - BoS	Dean - Academics	Date of Release	Version	