Priyadarshini Bhagwati College of Engineering

An Autonomous Institute Affiliated to RTM Nagpur University, Nagpur

Scheme of Teaching & Examination

Fourth Semester B. Tech Program

Scheme: BTECH/CE/2025-26

Fourth Semester

Sr. No.	Type of Course	Credits as per Category	Course Code	Course Title	Teaching Scheme (Clock Hours/ Week)			Credits	Maximum Marks			Minimum Marks			End Semester Exam Duration (Hrs)
					L	T	P		Continuous Evaluation	End Semester Exam	Total Marks	Continuous Evaluation	End Semester Exam	Total Marks	
1	PCC	10	CE401T	Structural Analysis	3	0	0	3	40	60	100	---	15	45	3
2			CE401P	Structural Analysis Lab	0	0	2	1	25	25	50	---	---	25	---
3			CE402T	Geotechnical Engineering	3	0	0	3	40	60	100	---	15	45	3
4			CE402P	Geotechnical Engineering Lab	0	0	2	1	25	25	50	---	---	25	---
5			CE403T	Water Resources Engineering	2	0	0	2	20	30	50	---	8	23	2
6	MDM	2	CSE / AI / ETC / EE / 404T	Branch wise Course (CSE / AI / ETC / EE)	2	0	0	2	20	30	50	---	8	23	2
7	OE	2	CSE / AI / ETC / EE /405T	Open Elective – II (Refer OE Basket)	2	0	0	2	20	30	50	---	8	23	2
8	VSEC	2	CE406P	Building design and drawing Lab	0	0	4	2	50	50	100	---	---	50	---
9	HSSM (AEC)	6	HUT407T	Refer Basket (ETC/Marathi/Hindi)	2	0	0	2	20	30	50	---	8	23	2
10	HSSM Entrepreneurship / Economics / Management courses		HUT408T	Entrepreneurship Development and Management	2	0	0	2	20	30	50	---	8	23	2
11	HSSM (VEC)		HUT409T	Digital and Technological Solutions	2	0	0	2	20	30	50	---	8	23	2
				Total =	18	0	8	22			700				

NOTE: - 1. Refer MDM Courses - CSE / AI / ETC / EE / 404T

2. Refer Exit Option of UG Diploma in Major Degree.

3. Any student admitted directly to the Second Year of Civil Engineering from a different engineering program is required to earn an additional 2 credits to meet the academic requirements under the NEP guidelines.

Abbreviations: -

PCC - Programme Core Course, MDM - Multidisciplinary Minor, OE- Open Elective other than program, VSEC- Vocational skill enhancement course, HSSM - Humanities Social Science and Management, AEC- Ability enhancement course, VEC - Value Education Course, MNC - Mandatory Course

Multidisciplinary Minor			
Sr. No.	Category	Course Code	Course Name
1	MDM	CE404T	Water Purification and Supply

Open Elective - II			
Sr. No.	Category	Course Code	Course Name
1	OE	CE405T	Environmental Engineering

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Department of Civil Engineering

Multidisciplinary Minor

List of Courses

Sr. No.	Semester	Course Code	Course Name	Marks	Credits
1	3rd	CE303T	Introduction to Civil Engineering	50	2
2	4th	CE404T	Water Purification and Supply	50	2
3	5th	CE505T	Building Construction and Elementary Building Drawing	100	3
4	5th	CE505P	Building Construction and Elementary Building Drawing Lab	50	1
5	6th	CE606T	Property Acquisition and Legal Aspects	50	2
6	7th	CE703T	Advanced Building Material	50	2
7	8th	CE805T	Estimating and Costing	50	2
			Total =	400	14

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Department of Civil Engineering

Open Elective

List of Courses

Sr. No	Semester	Course Code	Course Name	Marks	Credits
1	3rd	CE304T	Construction Material Testing & Evaluation	100	3
2	3rd	CE304P	Construction Material Testing & Evaluation	50	1
3	4th	CE405T	Environmental Engineering	50	2
			Total =	200	06

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Department of Civil Engineering

HSSM (AEC) BASKET

List of Courses

Sr. No	Semester	Course Code	Course Name	Marks	Credits
1	4th	HUM407-T1	Effective Technical Communication	50	2
2	4th	HUM407-T2	Samaj Madhayam Saathi Marathi		
3	4th	HUM407-T3	Samajik Madhayam ke liye Hindi		
			Total =	50	02

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DEPARTMENT OF CIVIL ENGINEERING

SYLLABUS OF SECOND YEAR BACHELOR OF TECHNOLOGY,

SEMESTER IV

COURSE :- STRUCTURAL ANALYSIS **COURSE CODE: CE401T**

Hours/ Week	Credits	Duration of End Sem Exam	Continuous Evaluation	End Sem Exam	Total Marks
Th- 3 Hrs	3	3 Hrs	40	60	100

Course Objectives:

1.	To study basic concepts of analysis of structural components.
2.	To study the behavior of structural components under the various combination of loads.
3.	To study various methods for the analysis of indeterminate structure.

Course Outcomes:

After completion of the course, the student will be able to

CO1	Analyse the continuous beam with and without sinking of support, by Three Moment Theorem.
CO2	Analyse the continuous beam with and without sinking of support, Non Sway and sway frames.
CO3	Analyse structural members for rolling loads by Influence Line Diagram.
CO4	Apply knowledge of Direct Stiffness Method to analyse Beams and Plane Frames.
CO5	Distinguish the theories involved in the analysis of columns.

SYLLABUS:

UNIT I: STATICALLY INDETERMINATE STRUCTURES (7 Hours) (12 Marks)
Introduction to Statically indeterminate Structures, Concept of Static indeterminacy. Analysis of Fixed and Continuous beams by Three moment theorem, effects of sinking of support.
UNIT II: ANALYSIS OF BEAMS AND FRAMES (8 Hours) (12 Marks)
Analysis of Continuous Beams and Portal frames by Slope Deflection Method. Analysis of Continuous Beams and Simple Portal frames (Sway and Non Sway) Using Moment Distribution Method.
UNIT III: INFLUENCE LINE DIAGRAM (7 Hours) (12 Marks)
Rolling loads on simply supported beams with concentrated and uniformly distributed loads, maximum B.M. and S.F. Influence Line Diagrams for Reactions, Shear Forces and Bending Moments in simply supported beam, cantilevers and beams with overhangs, ILD for forces in members of Simple Truss.
UNIT IV: MATRIX STIFFNESS METHOD - APPLICATION TO BEAMS AND PLANE FRAMES (8 Hours) (12 Marks)
Basic concept, degree of freedom, direct stiffness Method. Formulation of elemental/local stiffness matrix and global stiffness matrix for beam members (without axial deformation), for plane frame members. Member load matrix due to concentrated loads, uniformly distributed loads. Transformation matrix, Assembly of global/structural load matrix up-to three elements. Solution to problems with maximum degree of freedom three.
UNIT V: COLUMN AND TWO-HINGED ARCHES (6 Hours) (12 Marks)
Columns : Bucking of columns, Euler's and Rankine's formula, Two-Hinged Arches: Secant Formula Analysis of Two-Hinged Arches S.F. and normal thrust, parabolic arches.

List of Books:

Text Books:

1. Structural Analysis –I, Fourth Edition, S. S. Bhavikatti, Vikas Publishing house Pvt. Ltd.
2. Structural Analysis –II, Fourth Edition, S. S. Bhavikatti, Vikas Publishing house Pvt. Ltd.
3. Basic Structural Analysis, Second Edition, C. S. Reddy, Mc Graw-Hill India.
4. Basic Structural Analysis, Third Edition, C. S. Reddy, Mc Graw-Hill India.
5. Structural Analysis - A Matrix method, Second Edition, G. S. Pandit & S. P. Gupta, Mc Graw-Hill.
6. Advanced Structural Analysis, Devdas Menon, Narosa Publishing House, New Delhi.
7. Structural Analysis, R. C. Hibbeler, Sixth Edition, Pearson.
8. Theory of Structure, R.S. Khurmi & N. Khurmi, S-Chand Publication.

Reference Book:

1. Theory of Structure, S. Ramamurtham, R. Narayanan, Eleventh Edition, Dhanpat Rai Publishing Company.
2. Theory and Analysis of Structures, Volume – 1, O.P. Jain & B.K. Jain, Third Edition, Nem Chand Brothers.
3. Theory of Structures, Timoshenko S. P. & Young D.H., International Edition, McGraw-Hill.
4. Intermediate Structural Analysis, C. K. Wang, Indian Edition, McGraw-Hill.

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SYLLABUS OF SECOND YEAR BACHELOR OF TECHNOLOGY,

SEMESTER IV

COURSE: - STRUCTURAL ANALYSIS LAB **COURSE CODE: CE401P**

Hours/ Week	Credits	Continuous Evaluation	End Sem Exam	Total Marks
2 Hrs	1	25	25	50

1) The practicals are based on theory subject of Structural Analysis and CO's.

2) Minimum eight practicals shall be performed from list of experiments.

3) Any one practical may be performed using virtual lab.

LIST OF PRACTICAL'S:

- Verification of Maxwell's reciprocal theorem using simply supported beam.
- Verification of Maxwell's reciprocal theorem using simply supported truss.
- Horizontal thrust in two hinged arch.
- ILD for Horizontal thrust in two hinged arch.
- Verification of flexural rigidity using simply supported beam.
- Analysis of a continuous beam using computer software.
- Analysis of a plane frame using computer software.
- Study practical on strain gauge.
- Comparison of different types of column buckling load.
- Horizontal thrust in portal frame.
- Introduction of different method of structural analysis.
- To determine the deflection of two Span Continuous beam.

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DEPARTMENT OF CIVIL ENGINEERING

SYLLABUS OF SECOND YEAR BACHELOR OF TECHNOLOGY,

SEMESTER IV

COURSE :- GEOTECHNICAL ENGINEERING **COURSE CODE: CE402T**

Hours/ Week	Credits	Duration of End Sem Exam	Continuous Evaluation	End Sem Exam	Total Marks
3 Hrs	3	3 Hrs	40	60	100

Course Objectives:

1.	To impart knowledge about formation of soil and phases of soil.
2.	To understand the index properties and classification of soil particles.
3.	To learn the principle permeability and seepage in the soil.
4.	To get information of consolidation process of soil.
5.	To understand the concept of compaction of soil.

Course Outcomes:

After completion of the course, the student will be able to

CO1	Know formation, classification of soil and its phases.
CO2	Identify the index and Engineering properties of the soil.
CO3	Determine properties and Evaluate permeability and seepage losses in soil.
CO4	Compute principles of consolidation and settlements of soil.
CO5	Analyze the principles of compaction of soil.

SYLLABUS :-

UNIT I : INTRODUCTION AND PHASES OF SOIL (7 Hours) (12 Marks)
Formation of soil, residual and transported soil, major deposits found in India. Soils generally used in practice such as organic soil, clay, Bentonite clay, black cotton soil etc. Soil structure, various soil weight and volume inter-relationship.
UNIT II : INDEX PROPERTIES AND CLASSIFICATION OF SOIL (8 Hours) (12 Marks)
Identification and determination of various index properties of soil such as water content, specific gravity, sieve analysis, particle size distribution curve, sedimentation analysis. Consistency of soil, Atterberge's limits, particle size classification, Textural classification, Unified and IS classification system of soil.
UNIT III : PERMEABILITY AND SEEPAGE (7 Hours) (12 Marks)
Darcy's law and its validity, discharge and seepage velocity, factors affecting permeability, determination of coefficients of permeability by laboratory and field methods, permeability of stratified soil. Seepage pressure, quick sand condition, characteristics and uses of flow nets, method to draw flow nets, preliminary problems of discharge estimation for homogeneous soils.
UNIT IV : CONSOLIDATION (7 Hours) (12 Marks)
Compression of laterally confined soil, terzaghi's1-d consolidation theory, determination of coefficient of consolidation, degree of consolidation, determination of pre-consolidation pressure, settlement, rate of settlement.
UNIT V : COMPACTION (7 Hours) (12 Marks)
Mechanism of compaction, factors affecting compaction, standard and modified proctor tests, field compaction equipment's, Advance compaction techniques.

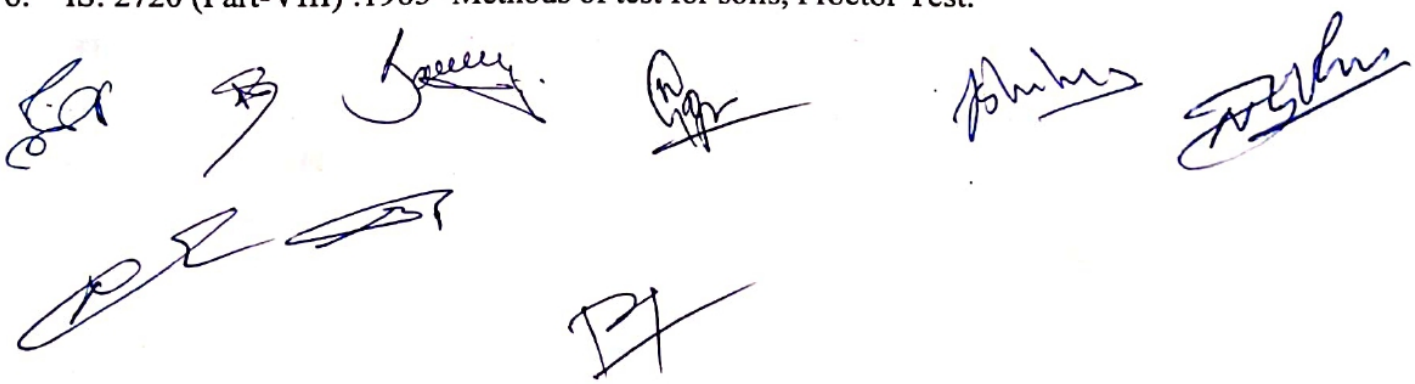
List of Books:

Text Books:

1. Textbook of Soil Mechanics and Foundation Engineering by V.N.S. Murthy, CBS Publisher.
2. Basic and Applied Soil Mechanics by Ranjal Gopal, 2, New Age International Publishers.
3. Geotechnical Engineering (Soil Mechanics) by Ramamurthy T. N., S. Chand Publication
4. Soil Mechanics and Foundation Engg by K.R. Arora, Standard Publisher.

List of Code:

1. IS: 2720 (Part-VII) : 1980- Methods of test for soils.
2. IS: 2720 (PART-17): 1986- Methods of test for soils, Laboratory determination of Permeability.
3. IS: 2720 (Part-29):1975- Core cutter Method (Reaffirmed 1988).
4. IS: 2720 (Part-28):1974- Sand Replacement Method (Reaffirmed 1988).
5. IS: 2720 (Part-XIII) : 1965- Methods of test for soils, Direct shear test.
6. IS: 2720 (Part-VIII) :1965- Methods of test for soils, Proctor Test.



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SYLLABUS OF SECOND YEAR BACHELOR OF TECHNOLOGY,

SEMESTER IV

COURSE :- GEOTECHNICAL ENGINEERING LAB **COURSE CODE: CE402P**

Hours/ Week	Credits	Continuous Evaluation	End Sem Exam	Total Marks
2 Hrs	1	25	25	50

1) The practicals are based on theory subject of Geotechnical Engineering and CO's.

2) Minimum eight practicals shall be performed from list of experiments.

3) Any one practical may be performed using virtual lab.

LIST OF EXPERIMENTS

- To determine the moisture content of soil
- To evaluate the specific gravity of soil.
- To know the grain size analysis of soil.
- To find out the Atterberge's limits of soil
- To ascertain the field density of soil by sand replacement method.
- To check the field density of soil by core cutter method.
- To find out the constant head permeability of soil
- To ascertain the unconfined compression test of soil.
- To find out the compaction of soil by proctors compaction test
- Study of plate load test.
- One field visit / site visit with report submission.

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DEPARTMENT OF CIVIL ENGINEERING

SYLLABUS OF FOURTH YEAR BACHELOR OF TECHANOLOGY

SEMESTER IV

WATER RESOURCE ENGINEERING

Total Credit: 2
Teaching Scheme
Lectures: 2 Hrs. / Week,
Tutorials: 0 Hr/Week

Subject Code: CE403T
Examination scheme
Theory (E): 30 Marks & T(I): 20 Marks
Duration of End semester Exam : 2 Hrs

Course Objectives:

1.	To understand the concept of Hydrology and evaporation
2.	To know the concept of infiltration, runoff and hydrograph
3.	To validate perform real time flood forecasting.

Course Outcomes:

After completion of the course, the student will be able to

CO1	Understand the importance of hydrological data and evaporation.
CO2	Analyze measured hydrological parameters by applying various theories and equations in infiltration theory and rainfall-runoff models.
CO3	Evaluating the flood discharge by statistical methods.

SYLLABUS

UNIT – I HYDROLOGY AND EVAPORATION **(8 Hours) (10 Marks)**
Introduction : Hydrological cycle, Meteorological factors affecting hydrological cycle, hydrological equation.
Precipitation : Definition, various forms. Determination of optimum numbers of rain gauges and estimation of missing rainfall data. Various methods of estimation of mean rainfall over the catchment.
Evaporation : Factors affecting evaporation. Measurement of evaporation by IS class 'A' pan, Evaporimeter. Estimation of evaporation by using empirical formulas.
Evapotranspiration : Definition, factors affecting evapotranspiration.

UNIT – II INFILTRATION AND RUNOFF (8 Hours) (10 Marks)
Infiltration : Definition, factors affecting infiltration. Infiltration capacity curve and its application. Infiltration indices and its application. **Runoff :** Definition, components of runoff, factors affecting runoff and estimation methods, hydrograph and S-curve.
UNIT – III ESTIMATION OF FLOOD (8 Hours) (10 Marks)
Statistical Methods for estimation of Peak flood and Design flood : Probability and recurrence interval of a flood magnitude. Frequency of point rainfall. Rational method. Design floods and its types. Introduction to IS:11223-1985.

Text Books

1. Hydrology and Water Resource Engineering by JayaRami Reddy P., University Science Press, Edition 2013 & Latest
2. Hydrology and Water Resource Engineering by Subramanyam K., Tata McGraw Hill publication, Edition 2011 & Latest.

References

1. Hydrology and Water Resource Engineering, by S.K.Garg, Khanna publication, Edition 2015& Latest
2. Water Power Engineering by B. C. Punmia, Laxmi Publication.
3. Water Resources Engineering by Ray K. Linsley (McGraw-Hill series in Water Resources And Environmental Engineering).
4. Applied Hydrology by Ven Te Chow, David R. Maidment, Larry W. Mays (McGraw-Hill Book Company)

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DEPARTMENT OF CIVIL ENGINEERING

SYLLABUS OF SECOND YEAR BACHELOR OF TECHANOLOGY

MULTIDISCIPLINARY MINOR SUBJECT AS PER NEP

SEMESTER IV

COURSE:-Water Purification and Supply **COURSE CODE: CE404T**

Hours/ Week	Credits	Duration of End Sem Exam	Continuous Evaluation	End Sem Exam	Total Marks
TH- 2Hrs.	2	02 Hrs.	20	30	50

Course Objectives:

1.	To provide knowledge regarding the sources of water demands, population forecasting Methods.
2.	To provide knowledge regarding the various characteristics of water, estimation of the quantity of water & it's Treatment process.
3.	To provide knowledge regarding conveyance of water from source to consumer.

Course Outcomes:

After completion of the course, the student will be able to

CO1	Understand the importance and necessity of water supply.
CO2	Identify the characteristics of water, drinking water standards, necessity of water treatment & it's process
CO3	Adopt appropriate conveyance systems and the appurtenances used.

SYLLABUS

Unit I: Demand of water	**(8 Hours) 10 Marks**
Need for protected water supply, water borne diseases, Surface and subsurface sources of water. Intake structures definition and types. Demands of water, Rate of demand, Factor's affecting rate of demand, variations of rateof demand. Design period for water supply scheme , Forecasting of population – Methods of forecasting, Numerical problem on forecasting of population,Estimation of total quantity of water for atown/city	
Unit – II: Quality of water and Treatment of water	**(8 Hours) 10 Marks**
Meaning of potable water ,Impurities present in water and it's classification , Need for analysis of water ,Tests on water- Physical test , Chemical test& Bacteriological test of water, Water quality standards as per IS specifications, Components of water treatment plant, Modern water purification processes.	
Unit – III: Conveyance and Distribution of water:	**(8 Hours) 10 Marks**
Different types of pipes used for conveyance of water, choice of pipe material , Joints in cast iron pipes and concrete pipes, Laying of pipes, testing of pipe line – pressure test and leakage test, Valves – types, functions, use and location on a pipe line , Methods of distribution of water Gravity, pumping and combined system.	

Text Books:

1. Water Supply Engineering by B. C. Punmia, Laxmi Publications; Second edition, 2016 .
2. Water Supply And Sanitary Engineering S. C. Rangwala Charotar Publishing House, 2005.
3. Water Supply and Sanitary Engineering G. S. Birdie, J. S. Birdie, Standard Publishers Distributors

Reference Book:

1. Elements of water supply and wastewater disposal Gordon Maskew Fair; John C New York : Wiley u.a., 1981harles,Geyer; Daniel A Okun

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DEPARTMENT OF CIVIL ENGINEERING

SYLLABUS OF SECOND YEAR BACHELOR OF TECHNOLOGY,

FOURTH SEMESTER

OPEN ELECTIVE-II

COURSE :- ENVIRONMENTAL ENGINEERING **COURSE CODE: CE405T**

Hours/ Week	Credits	Duration of End Sem Exam	Continuous Evaluation	End Sem Exam	Total Marks
2Hrs	2	2 Hrs	20	30	50

Course Objectives:

1.	Understanding the concept and principles of environment.
2.	To impart knowledge on the sources, effects and control techniques of water pollution.
3.	To understand the behaviour of air pollutants and the strategies to control their presence in the ambient atmosphere.

Course Outcomes:

After completion of the course, the student will be able to

CO1	Explore the components of biosphere and impact of human activity on environment.
CO2	Summarize the causes and sources of pollutants, and their impact on water & waste water.
CO3	Develop ethics and scientific awareness about Air Pollution .

SYLLABUS:

Unit No.I: Introduction to Environment	**(8 Hours) (10 Marks)**
Basic ideas of environment, basic concepts, man, society & environment, their interrelationship. Environmental degradation: Natural environmental Hazards like Flood, earthquake, Landslide causes, effects and control/management; Water demands; Per capita demand; Variations in demand, Factors affecting demand,Design period, Population Forecasting. Role and responsibility of engineer in environmental protection.	
UNIT II: Water Pollution & Waste Water Treatment Method	**(8 Hours) (10 Marks)**
Water resources, Classification of water, Origin, composition and characteristics of domestic water, . Water conservation, watershed management, Rain water harvesting: Definition, methods and benefits. Waste water,Biochemical oxygen demand, Water pollution standards Classification of waste water, Chemical oxygen demand. Basic processes of water treatment. Meaning of primary, secondary and tertiary treatment of waste water treatment.	
UNIT III: Air Pollution	**(8 Hours) (10 Marks)**
Standard definition of air pollution, Composition of natural air, Names of air pollutants, Classification of air pollutants, primary and secondary pollutants. Classification of source of air pollutants on different bases, Effect of air pollution on: human health, material properties, vegetation. Major toxic metals and their effects. Major environmental phenomenon e.g., acid rain, global warming, greenhouse effect, ozone layer depletion.	

References

1. Environmental Engineering, Peavy and Rowe, McGraw Hill India, 2013 .
2. Wastewater Engineering: Treatment and Reuse, Metcalf and Eddy, 4th ed.
3. Environmental pollution control Engineering, C.S. Rao.
4. Air Pollution & Control, M. N. Rao

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DEPARTMENT OF CIVIL ENGINEERING

SYLLABUS OF SECOND YEAR BACHELOR OF TECHNOLOGY,

SEMESTER IV

COURSE: -BUILDING DESIGN & DRAWING LAB **COURSE CODE: CE406P**

Hours/ Week	Credits	Continuous Evaluation	End Sem Exam	Total Marks
4 Hrs	2	50	50	100

Course Objectives:

1	To get knowledge about building bylaws and importance of building drawing.
2	To prepare the working and submission drawing.
3	To develop the fundamental concept and functions of various building components.

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

CO1	Understand building bye laws & building code
CO2	Draw submission/working thawing.
CO3	Develop and sketch the different types of building component.

SYLLABUS

Introduction: -

Site requirements, requirements of owner, Importance of Building drawings. Use of building byelaws and National building code. Introduction to building components. Selection of scales for various drawings, Abbreviations and conventional representations as per IS 962. Introduction to working and submission drawings.

Planning and Designing of Buildings:

Introduction: Climate and design consideration, orientation, recommendations of CBRI, Roorki and general principles of planning (Aspect & Prospect) with emphasis on functional planning. Graph paper design (line plans) is based on various requirements for residential, public, education and industrial buildings.

Building Drawing:

(A) Two-point perspective of Residential building neglecting small elements of building such as plinth offset, chajja projections etc.

(B) Drawings and Detailing of Building services; electrical, plumbing, sanitary, etc.

LIST OF PRACTICALS: -

Minimum 07 Practical's shall he performed out of 10 listed below.

1. Working drawing of residential single-story building with foundation plan of load bearing structure. (Manually).
2. Working drawing of residential single-story building with foundation plan of load bearing structure. (With Computer Aided Drafting).
3. Submission drawing of single/multi-storied residential building (framed structure) with access to terrace including all details and statements as per the local byelaws. (Manually).
4. Submission drawing of single/multi-storied residential building (framed structure) with access to terrace including all details and. statements as per the local byelaws. (With Computer Aided Drafting).
5. Two-point perspective of the single storied Residential building neglecting small building elements. (one assignment - pitched or terraced roof). (Manually).

6. Minimum 5 manual self-explanatory dimensioned sketches of various building elements.
7. Minimum 5 (with Computer Aided Drafting) self-explanatory dimensioned sketches of various building elements.
8. Line plans of various types of buildings e.g. public/educational/industrial/hospital; community on graph sheets (Manually).
9. Line plans of various types of buildings e.g. public/educational/industrial/hospital/
10. community on graph sheets (With Computer Aided Drafting).
11. Working drawing of multistoried Public/Educational/Health/Community/Industrial building including structural details and layout of services. (One assignment).

List of Books:

Textbooks:

1. Building Construction by Rangwala, Charotar Pub. House
2. Building Construction and Construction Materials by G. S. Birds and T. D.Ahitja, Dhanpat Rai Pub. Company
3. Building drawing, Shah M.G., Kale C.M., Patki, Mcgraw Hill publishing company Ltd.
4. Principal of Perspective Drawing, Shah M.G., Kale C.M., Patki, Mcgraw Hill publishing company Ltd.

Reference Book:

1. Building. Construction by Arun kr. Jain, Ashok kr. Jain, B, C. Punmia, Laxmi publication

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DEPARTMENT OF CIVIL ENGINEERING

Syllabus for Fourth Semester B.Tech (Civil Engineering) - Additional Credit Course For Diploma Holders Having Diploma other than Civil Engineering

Course Code	Type of Course	Course Name	Hours/week			Maximum Marks			ESE Duration (Hrs.)
			L	T	P	Continuous Evaluation	End Sem Exam	Total	
CE AC410P	VSCE	Civil Engineering Practices	-	-	4	50	50	100	

Objectives:

1. To Use basic measuring instruments.
2. To Check good quality of bricks
3. To Prepare concrete mix, check its workability and strength
4. To prepare various brick masonry bond.

Course Outcome: After completion of practical the students will be able to

1. Measure area of field and determine elevations.
2. Identify good quality of bricks
3. Prepare concrete by volume batching, find workability and strength of concrete
4. Execute various brick masonry bonds.
5. Demarcate building layout on field.

List of Experiments:

Minimum 10 Practical's to be performed from following list-

1) Study and use of metric chain.
2) Determination of area of field using chain and cross staff.
3) Determination of area of field using Plane table survey.
4) Determination of elevation using auto level.
5) Determination of crushing strength of brick.
6) Determination of water absorption of brick.
7) Preparation of Concrete by weight/volume batching.
8) Workability of concrete using Slump cone test.
9) Determination of compressive strength of Concrete.
10) To execute volume batching and mixing for mortar.
11) Construction of various brick masonry bonds.
12) Demarcation of small building layout at field.
13) Study of various curing methods.
14) Preparation of DPR (Daily progress report)
15) **One compulsory field visit.**