MECHANICS OF B.E., III Semester, C [As per Choice Based Credit	MATERIALS Civil Engineering System (CBCS) scheme]	
Subject Code: 22CV32	CIE: 50	
Number of Lecture Hours/Week: 04	SEE: 50	
Total Number of Lecture Hours: 52	Exam Hours: 03	
CREDIT	S - 04	
<ul> <li>Course Objectives: This course will enable students;</li> <li>1. To understand the basic concepts of the stresses and structural elements.</li> <li>2. To know the importance of shear and bending mom</li> <li>3. To analyse and understand different internal forces, representative loads on structural elements.</li> <li>4. To analyze and understand effect of compound, pri components.</li> <li>5. To evaluate the behavior Thin &amp; Thick Cylinder fo</li> </ul>	d strains for different materials and strengt nent diagrams in beam analysis. bending and shear stresses induced due to ncipal stresses and torsional behavior of st r internal forces.	th of tructural RBT LE VE L/ HR S
Module -1		
Stresses and Strains: Introduction, Properties of Materials, Stress, Strain, Strain Diagram for structural steel, Principles of sup- bars of circular and rectangular cross sections. C expression for volumetric strain, Elastic constants, Thermal stress and strains.	Hook's law, Poisson's Ratio, Stress – erposition, Total elongation of tapering Composite section, Volumetric strain, relationship among elastic constants,	L1, L2, L4 10 HRS
Module -2		

<b>Bending moment and shear force diagrams in beams:</b> Definition of shear force and bending moment, Sign convention, Relationship between load, shear force and bending moment, Shear force and bending moment equations, development of Shear Force Diagram (SFD) and Bending Moment Diagram (BMD) with salient values for cantilever, simply supported and overhanging beams for point loads, UDL (Uniformly Distributed Load), UVL (Uniformly Varying Load) and Couple.	L1, L2, L3, L4 11 HRS
Module -3	
<ul> <li>Bending stress in beams:</li> <li>Introduction – Bending stress in beam, Pure bending, Assumptions in simple bending theory, derivation of Simple bending equation (Bernoulli's equation), modulus of rupture, section modulus, Flexural rigidity, Problems</li> <li>Shear stress in beams:</li> <li>Derivation of Shear stress intensity equations, Derivation of Expressions of the shear stress intensity for rectangular, triangular and circular cross sections of the beams.</li> <li>Problems on calculation of the shear stress intensities at various critical levels of T, I and Hollow rectangular cross sections of the beam</li> </ul>	L2, L3, L4 10 HRS
Module -4	
<ul> <li>Compound stresses: Introduction, Stress components on inclined planes, General two-dimensional stress system, Principal planes and stresses, maximum shear stresses and their planes (shear planes). Compound stress using Mohr's circle method.</li> <li>Torsion: Twisting moment in shafts, simple torque theory, derivation of torsion equation, tensional rigidity, polar modulus, shear stress variation across solid circular and hollow circular sections, Problems.</li> </ul>	L2, L3, L4 11 HRS
Module -5	
<ul> <li>Thin cylinders:</li> <li>Introduction: Longitudinal, circumferential (hoop) stress in thin cylinders. Expressions for longitudinal and circumferential stresses. Efficiency of longitudinal and circumferential joints. Problems on estimation of change in length, diameter and volume when the thin cylinder subjected to internal fluid pressure.</li> <li>Thick cylinders:</li> <li>Concept of Thick cylinders Lame's equations applicable to thick cylinders with usual notations, calculation of longitudinal, circumferential and radial stresses – simple numerical examples. Sketching the variation of radial stress (pressure) and circumferential stress across the wall of thick cylinder</li> </ul>	L1, L2, L3 10 HRS
<ul> <li>Course outcomes: After studying this course, students will be able;</li> <li>1. To evaluate the strength of internal forces such as compression, tension, shear, bending and structural components.</li> <li>2. To determine the bending moment and shear force in beam and draw its SFD and BMD.</li> <li>3. To evaluate the bending stress and shear stress in beams.</li> <li>4. To evaluate the behavior and strength of structural elements under the action of compound structural structural elements.</li> </ul>	torsion of

torsion.

5. To understand the basic concept in analysis of thin and thick cylinder.

## **Question Paper Pattern:**

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question carries 20 marks.
- There will be two full questions (with a maximum of four sub questions) from each module.
- Each full question will have sub questions covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module.

## CIE + Assignments: 15+35=50 Marks

There will be a 3 CIE's, the average of best of 2 CIE's will be considered and there will be a 35 marks for Assignments

# **TEXT BOOKS:**

1.SS Bhavikatti" Strength of Materials",3rd Edition ,Vikas Publishing House PVT LTD,2013

2.BK Kolhapure "mechanics of materials' 1st Edition, Eastern Book Promoters Belgaum 2016

3.B C Punmia "strength of materials" 10th edition, laxmi publications p ltd. 2018

4.Dh Bansal, "A Textbook of Strength of Materials", 4th Edition, Laxmi Publications, 2010

5.I B Prasad "mechanics of materials" Khanna publishers 1998.

# **REFERENCE BOOKS:**

- 1. D.H. Young, S.P. Timoshenko " Elements of Strength of Materials" East West Press Pvt. Ltd., 5th Edition (Reprint 2014)
- 2. R K Bansal, "A Textbook of Strength of Materials", 4th Edition, Laxmi Publications, 2010
- 3. S.S. Rattan " Strength of Materials" McGraw Hill Education (India) Pvt. Ltd., 2nd Edition (Sixth reprint 2013)
- 4. Vazirani, V N, Ratwani M M. and S K Duggal "Analysis of Structures Vol. I", 17th Edition, Khanna Publishers, New Delhi.
- 5. B.S. Basavarajaiah, P.Mahadevappa "Strength of Materials" in SI Units, University Press (India) Pvt. Ltd., 3rd Edition, 2010
- 6. Ferdinand P. Beer, E. Russell Johnston and Jr.John T. DeWolf "Mechanics of Materials", Tata McGraw-Hill, Third Edition, SI Units

7.S Ramamrtham '' strength of materials'' Dhanpat Rai Publishing Company.

FLUIDS MEC B.E., III Semester, C [As per Choice Based Credit	HANICS ivil Engineering System (CBCS) scheme]	
Course Code: 22CV33	CIE Marks: 50	
Number of Lecture		
Hours/Week: 02+02	SEE Marks: 50	
Total Number of	E	
Lecture Hours: 42 hours	Exam Hours: 03	
Credits -	- 03	
Course Objectives: The objective of this course is to e	nable students to know:	
1. The Fundamental properties of fluids and its applicat	ions.	
2. Hydrostatic laws and application to practical problem	n solving.	
3. To apply Principles of Kinematics and Hydrodynami	cs for practical applications.	
4. To determine losses in pipe flow & design pipe netwo	orks.	
5. To measure flow rates.		
Module-1		
Fluids & Their Properties: Concept of fluid, Systems of Specific weight, Specific gravity, Specific volume, Y tension& Capillarity. Fluid as a continuum, Newton's Capillary rise in a vertical tube and between two planes of Surface tension and Capillarity. Numerical problems. Fluid Pressure and Its Measurements: Definition of p Variation of pressure with depth. Types of pressure. differential & inclined manometers (theory & problems	of units. Properties of fluid; Mass density, Viscosity, Cohesion, Adhesion, Surface s law of viscosity (theory & problems). urfaces (theory & problems). Applications pressure, Pressure at a point, Pascal's law, Measurement of pressure using simple, ).	L2, L3 9 HRS
<ul> <li>Module-2</li> <li>Hydrostatic forces on Surfaces: Definition, Total press horizontal, vertical, and inclined plane surface, total Problems.</li> <li>Fundamentals of fluid flow (Kinematics): Introduction Velocity and Total acceleration of a fluid particle. Type pattern. Basic principles of fluid flow, three-dimensional coordinate system. Potential function, stream function, equipotential lines. Numerical problems on Stream function</li> </ul>	sure, Centre of pressure, total pressure on pressure on curved surfaces. Numerical n. Methods of describing fluid motion. s of fluid flow, Description of flow al continuity equation in Cartesian orthogonality of streamlines and etion and velocity potential function.	L2, L4 9 HRS
Module-3		L2,
<b>Fluid Dynamics:</b> Introduction. Forces acting on fluid in a streamline and Bernoulli's equation. Assumptions Modified Bernoulli's equation. Problems on applicat without losses). problems Momentum equation. Pr Introduction. Venturi meter, Orifice meter, Pitot tube. N	motion. Euler's equation of motion along and limitations of Bernoulli's equation. ions of Bernoulli's equation (with and roblems on pipe bends. <b>Applications:</b> Jumerical Problems.	L4 8 HRS

<ul> <li>Module-4</li> <li>Orifice and Mouthpiece: Introduction, classification, flow through orifice, hydraulic coefficients, Numerical problems, Mouthpiece, classification, Borda's Mouthpiece (No problems).</li> <li>Notches and Weirs: Introduction. Classification, discharge over rectangular, triangular, trapezoidal notches, Cippoletti notch, broad crested weirs, ogee weir. Numerical problems. Ventilation of weirs submerged weirs</li> </ul>	L2,L4 8 HRS
<ul> <li>Module-5</li> <li>Flow through Pipes: Pipes in series, pipes in parallel, equivalent pipe-problems Pipe Networks, Numerical problems.</li> <li>Losses in pipes: Introduction. Major and minor losses in pipe flow. Darcy- Weisbach equation for head loss due to friction in a pipe. Minor losses in pipe flow, equation for head loss due to sudden expansion &amp; contraction. Numerical problems. Design of Pipe Network-numerical problems.</li> </ul>	L2, L4 8 HRS
<ol> <li>Measure of fluid pressure using manometers.</li> <li>Apply principles of mathematics to represent kinematic concepts related to fluid flow.</li> <li>Apply fundamental laws of fluid mechanics and the Bernoulli's principle for practical applied.</li> <li>Compute the discharge through pipes over notches and weirs.</li> <li>Calculate the major and minor losses in pipe flow.</li> </ol>	cations.
<ol> <li>Textbooks:         <ol> <li>P N Modi and S M Seth, "Hydraulics and Fluid Mechanics, including Hydraulic Machines edition, 2015, Standard Book House, New Delhi.</li> <li>R.K. Bansal, "A Textbook of Fluid Mechanics and Hydraulic Machines", Laxmi Publication Delhi.</li> <li>S K SOM and G Biswas, "Introduction to Fluid Mechanics and Fluid Machines", Tata McC Hill, New Delhi.</li> <li>Dr. Jagdish Lal, "Fluid Mechanics And Hydraulics With Computer Applications", 9<sup>th</sup> of Metropolitan.</li> </ol> </li> <li>Reference Books:         <ol> <li>Victor L Streeter, Benjamin Wylie E and Keith W Bedford, "Fluid Mechanics", Tata McGradient, and the participation of the streeter.</li> </ol></li></ol>	s", 20th ns, New Graw edition, aw Hill

2. K Subramanya, "Fluid Mechanics and Hydraulic Machines", Tata McGraw Hill Publishing Co. Ltd.

3. K Subramanya, "Fluid Mechanics and Hydraulic Machines-problems and solutions", Tata McGraw Hill Publishing Co. Ltd.

4. J. F. Douglas, J. M. Gasoriek, John Swaffield, Lynne Jack, "Fluid Mechanics", Pearson, Fifth Edition.

5. Mohd.Kaleem Khan, "Fluid Mechanics and Machinery", Oxford University Press.

BASIC SURVEYIN	G	
B.E., III Semester, Civil En	gineering	
[As per Choice Based Credit Syste	m (CBCS) scheme]	
Course Code :22CV34	CIE Marks:50	
Number of Lecture Hours/Week :02+02	SEE Marks :50	
Total Number of	Evam Hours :03	
Lecture Hours:42 Hours	Examiniours .05	
Credits – 03		
Course Objectives: This course will enable students to;		
1.Understand the classifications and its basic principles of s	urveying.	
2. Learn the measurement of horizontal distances by chain	ing/taping and concepts of cl	nain
surveying. 3. Employ conventional surveying data capturin	g techniques and process the	data for
computations.		
4.Learn the modern surveying equipment used for the acc	uracy of the work.	
		RBT
MODULE		LEVEL/HR
		S
Module-1		
Introduction: Definition of surveying, Objectives and	importance of surveying.	
Classification of surveys. Principles of surveying.		
Surveying measurements and errors, types of errors, pred	cision and accuracy.	
Classification of maps, map scale, conventional symbo	ls, topographic maps, map	
layout.		1112
Measurement of Horizontal Distances: Different Instrum	ents used for measurement,	
measuring tape & chain and types, ranging of lines, dire	ect and indirect methods of	051113
ranging. Field book and types, entries, Conventional sym	bols.	
Measurement of Directions and Angles: Compass survey	: Basic definitions; meridians,	
bearings, magnetic and True bearings. Prismatic and surve	eyor's compasses, temporary	
adjustments, declination. Quadrantal bearings, Whole Cir	cle Bearings, Local attraction	
and related problems.		
Module-2		1213
Theodolite Survey: Theodolite and types, parts of	Transit theodolite, uses of	08HRS
theodolite, Temporary adjustments of transit theodolite,	measurement of horizontal	

and vertical angles.	
Traversing: Types of Traverse, Traverse Survey and Computations: Latitudes and	
departures, rectangular coordinates, Traverse adjustments, Bowditch rule and transit	
rule, Numerical Problems	
Module-3	
Leveling: Basic terms and definitions, fundamental lines and their relationship,	
Methods of leveling, Dumpy level, auto level. Curvature and refraction corrections.	111213
Booking and reduction of levels. Differential leveling, profile leveling & cross	
sectioning, fly leveling & check levelling.	001113
Trigonometric leveling (heights and distances-single plane and double plane	
methods).	
Module-4	
Contouring: Contours, horizontal equivalent, Contour interval, characteristics of	
contour. Methods of contour: Direct and Indirect(interpolation)	
Tacheometry: basic principle, types of tacheometry, methods of measuring constants	121314
of tacheometer distance equation for horizontal and inclined line of sight in fixed hair	
method (staff held vertical and normal).	001113
Electronic distance measurement (EDM): Definition, working principles, uses.	
Total Station: Definition, Parts, working principle. uses, theory of Total Station,	
Advantages and disadvantages.	
Module-5	
Curves: types of curves Simple Curve-necessity-designation-Numerical on elements	
of simple curve, methods of setting out curve-linear method (offsets from long chord	
method & offsets from chord produced), angular method-Rankine's deflection	L2,L3,L4
method, Compound Curve: Definition, elements, relation between various elements	09HRS
of compound curve (case I), Reverse curve: Definition, elements, relation between	
various elements of reverse curve. Transition curve: Definition, elements, requirements	
of ideal transition curve.	
Course outcomes: After a successful completion of the course, the student will be able	e to:
1. Incorporate fundamental principles of surveying.	
2. Measurement of vertical and horizontal distances to arrive at solutions to ba	sic surveying
problems.	
3. Understand the computations of linear and angular dimensions to arrive at ba	sic surveying
problems.	

4. Understand the nature of ground profile by taking levelling.

5. Exposure to various modern equipment used for the advanced survey work.

# Question Paper Pattern:

• The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.

- The question paper will have ten full questions carrying equal marks.
- Each full question carries 20 marks.
- There will be two full questions (with a maximum of four sub questions) from each module.
- Each full question will have sub questions covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module.

# CIE + Assignments: 15+35=50 Marks

There will be a 3 CIE's, the average of best of 2 CIE's will be considered and there will be a 35 marks for Assignments

#### TITLE OF THE COURSE: Building Materials & Construction Technology B.E.III Semester, Civil Engineering [As per Choice Based Credit System (CBCS) scheme]

[As per Choice Based Cred	int System (CBCS) scheme]
Course Code: 22CV35	CIE Marks: 50
Number of Lecture Hours/Week: 04	SEE Marks: 50
Total Number of Lecture Hours: 42	Exam Hours:03
Credi	ts – 03

Course Objectives: This course will develop a student;

1. In recognizing the good materials to be used for the construction work

- 2. Investigation the soil condition, Deciding suitable type foundation for different structures
- 3. Classify the different types of masonry

4. In selection of materials and supervision of suitable type of floor and roof.

To gain knowledge about doors, windows, plastering, painting, damp proofing, scaffolding, shoring, underpinning and to take suitable engineering measures.

MODULE	RBT LEVELS/ HRS
Module-1 Building Materials:	
<b>Stone</b> as building material; Requirement of good building stones, Dressing of stones. <b>Bricks</b> Classification, Manufacturing of clay bricks, Types of Kilns and Clamps. Field and laboratory tests on bricks; compressive strength, water absorption, efflorescence, dimension and warpage. <b>Blocks:</b> Cement Concrete blocks, Stabilized Mud Blocks, Sizes, requirement of good blocks. <b>Mortar:</b> types and requirements. <b>Timber</b> as construction material	L1,L2 10 HRS
Advanced construction material:	
Autoclaved Aerated block (AAC) manufacturing process and uses, Laminates, types and its application. Gypsum board, Insulating materials.	
Module-2	
Foundation:	
Preliminary investigation of soil, safe bearing capacity of soil Function and requirements of good foundation, types of foundation, introduction to spread, combined, strap, mat and pile foundation	
<b>Masonry:</b> Definition and terms used in masonry. Brick masonry, characteristics and requirements of good brick masonry, Bonds in brick work, Header, Stretcher, English, Flemish bond, Stone masonry, Requirements of good stone masonry, Classification, characteristics of different stone masonry, Joints in stone masonry. Types of walls; load bearing, partition walls, cavity walls.	L1,L2,L3 8 HRS
<b>Lintels and Arches</b> : Definition, function and classification of lintels, Balconies, chejja and canopy. Arches; Elements and Stability of an Arch.	
Module-3	
<b>Doors, Windows and Ventilators</b> : Location of doors and windows, technical terms, Materials for doors and windows, Paneled door, Flush door, Collapsible door, Rolling shutter, PVC Door, Paneled and glazed Window, Bay Window, French window. Ventilators. Sizes as per IS recommendations.	L2,L3 8 HRS
Roofs: Requirement of good roof, Types of roof, Elements of a pitched roof, Trussed roof, Flat	

roof, King post Truss, Queen Post Truss, Steel Truss, Different roofing materials.	
Module-4	
<b>Floors:</b> Floors: Requirement of good floor, Components of ground floor, Selection of flooring material, Laying of Concrete, Mosaic, Marble, Granite, Tile flooring, Ceramic tiles and	
vitrified tiles.	12121415
<b>Stairs:</b> Definitions, technical terms and types of stairs, Requirements of good stairs. Geometrical design of RCC doglegged and open-well stairs.	8 HRS
<b>Formwork:</b> Introduction to form work, scaffolding, shoring, under pinning.	
<b>Plastering and Pointing</b> : purpose, materials and methods of plastering and pointing,	
defects in plastering-Stucco plastering, lathe plastering	
Module-5	
<b>Plumbing:</b> Introduction-plumbing services, water meter, valves, Storage Tanks, general	
principles of house drainage, pipes and traps, sanitary fittings, system of plumbing	L1,L2
<b>Damp proofing</b> - causes, Effects and methods.	8 HRS
<b>Paints</b> - Purpose, types, ingredients and defects, Preparation and applications of paints to	
new and old plastered surfaces, wooden and steel surfaces.	
Course outcomes: After a successful completion of the course, the student will be able to	:
1. Select suitable materials for buildings and adopt suitable construction techniques.	
2. Suitable type of foundation and masonry for buildings.	
3. Select suitable Doors, Windows and Roofs materials to give good aesthetic looks for the buildi	ngs.
4. Select suitable flooring materials, Stairs, formwork and plastering.	
5. Select advanced plumoling, Damp proofing and Paints materials to reduce maintenance cost.	
Text Books:	
1 Sushil Kumar "Building Materials and construction" 20th edition reprint 2015 Standa	rd
Publishers	
2. Dr. B.C.Punmia, Ashok kumar Jain, Arun Kumar Jain, "Building Construction,	
Laxmi Publications (P) ltd., New Delhi.	
Rangawala S. C. "Engineering Materials", Charter Publishing House, Anand, India.	

## **Reference Books:**

- 1. S.K.Duggal, "Building Materials", (Fourth Edition)New Age International (P) Limited, 2016 National Building Code(NBC) of India
- 2. P C Vergese, "Buliding Materials", PHI Learning Pvt. Ltd
- 3. Building Materials and Components, CBRI, 1990, India
- 4. Jagadish.K.S, "Alternative Building Materials Technology", New Age International, 2007

	BUILDING MATER	RIAL TESTING LAB
	[As per Choice Based Cree	lit System (CBCS) scheme]
	SEMES'	ΓER – III
	Subject Code: 22CVL36	<b>CIE:</b> 50
	Number of Lecture Hours/Week:03	<b>SEE:</b> 50
	Total Number of Lecture Hours: 20	Exam Hours: 03
CRED	ITS – 01	
Course O	bjectives: The objective of this course is to m	ake students to learn:
1. Ability	to apply knowledge of mathematics and engine	ering in calculating the mechanical properties of
structural	materials.	
2. Ability	to function on multi-disciplinary teams in the a	rea of materials testing.
3. Ability	to use the techniques, skills and modern engine	ering tools necessary for engineering.
4. Unders	tanding of professional and ethical responsibility	y in the areas of material testing.
5. Ability	to communicate effectively the mechanical proj	perties of materials.
SL NO	EXPERIMENT NAME	
1	Tension test on mild steel and HYSD bars	L2.L3.L5
2	Compression test on mild steel and wood.	L1,L2,L3,L5
3	Bending Test on Wood Under single and two	point loading. L1,L2,L3,L5
4	Shear Test on Mild steel- single and double sh	ear. L1,L2,L3,L5
5	Impact test on Mild Steel (Charpy & Izod).	L1,L2,L3,L5
6	Hardness tests on ferrous and non-ferrous met	als- Brinell's, Rockwell and Vicker's. L1,L2,L3,L5
7	Compression and water absorption tests on Br	icks and Tiles. L1,L2,L3,L5
0	Tests on Fine aggregates-Moisture content, Sp	ecific gravity, Bulk density, Sieve analysis and
ð	Bulking.	L1,L2,L3,L5
0	Tests on Coarse aggregates-Absorption, Moist	ure content, specific gravity, Bulk density
9	and Sieve analysis.	L1,L2,L3,L5

11Demonstration of Strain gauges and Strain indicators.NOTE: All tests to be carried out as per relevant latest BIS Codes

Torsion test on Mild Steel and HYSD bar.

**Course outcomes:** After successful completion of the course, the students will be able to:

1. Reproduce the basic knowledge of mathematics and engineering in finding the strength in tension, compression, shear and torsion.

L1,L2,L3,L5 L1,L2,L3,L5

2. Identify, formulate and solve engineering problems of structural elements subjected to flexure.

3. Evaluate the impact of engineering solutions on the society and also will be aware of contemporary issues regarding failure of structures due to unsuitable materials.

# Question paper pattern:

10

Group experiments - Tension test, compression test and bending test.

□ □ Individual Experiments - Remaining tests.

 $\Box$   $\Box$  Two questions are to be set - One from group experiments and the other as individual experiment.

□ □ Instructions as printed on the cover page of answer script for split up of marks to be strictly followed.

#### **Reference Books:**

1. Davis, Troxell and Hawk, "Testing of Engineering Materials", International Student Edition – McGraw Hill Book Co. New Delhi.

2. M L Gambhir and Neha Jamwal, "Building and construction materials-Testing and quality control", McGraw Hill education(India)Pvt. Ltd., 2014

3. Fenner, "Mechanical Testing of Materials", George Newnes Ltd. London.

4. Holes K A, "Experimental Strength of Materials", English Universities Press Ltd. London.

5. Suryanarayana A K, "Testing of Metallic Materials", Prentice Hall of India Pvt. Ltd.New Delhi.

6. Kukreja C B, Kishore K. and Ravi Chawla "Material Testing Laboratory Manual", Standard Publishers & Distributors 1996.

# 7. Relevant latest IS Codes

	TITLE OF THE COURSE: Surv B.E., III Semester, Civil [As per Choice Based Credit Syst	eying Practice-I Lab Engineering em (CBCS) scheme]	
	Course Code: 22CVL37	CIE Marks :50	
	Number of Lecture Hours/Week :02	SEE Marks: 50	
	<b>Total Number of Hours: 28</b>	Exam Hours: 03	
	Credit	s – 01	
Сс	ourse Objectives: The objectives of this course is to make	students to:	
	1. Apply the basic principles of engineering surveying	ig and measurements	
	2. Follow effectively field procedures required for a	professional surveyor	
	3. Use techniques, skills and conventional surveying	instruments necessary for	
	engineering practice.		
	Experiments:		
1.	Measurements of distances using chain & tape by o	direct ranging. L3,L4	
2.	Setting out perpendiculars using cross staff, chain a	ind tape. L3,L4	
3.	Setting out of geometrical figures using chain, Tape	and prismatic compass.	
	L3		
4.	Measurement of bearings of sides of a closed trave	rse and adjustment of closing error by	
	Bowditch method.		
	L3		
5.	Determination of distance between two inaccessibl	e points using compass and accessories.	
		14	
6.	Measurement of horizontal angle by repetition and	reiteration method.	

7. Measurement of vertical angle by theodolite	e. L4
8. To determine reduced levels of points using	dumpy level/auto level (simple leveling).
L4	
9. To determine reduced levels of points using	dumpy level/auto level (differential leveling and
inverted leveling).	L4
10. To determine the difference in elevation bet	ween two points using Reciprocal leveling.
L4	
11. Demonstration on planimeter.	L3
<ul> <li>Course outcomes: After a successful completion</li> <li>1. Apply the basic principles of engineering s</li> <li>2. Comprehend effectively field procedures r</li> <li>3. Use techniques, skills and conventional surrengineering practice.</li> </ul>	on of the course, the student will be able to: surveying for linear and angular measurements. equired for a professional surveyor. rveying instruments necessary for
Question paper pattern:	
Question paper pattern: • All are individual experiments.	
Question paper pattern: • All are individual experiments. • Instructions as printed on the cover page o	f answer script for split up of marks to be strictly
<ul> <li>Question paper pattern:</li> <li>All are individual experiments.</li> <li>Instructions as printed on the cover page of followed.</li> </ul>	f answer script for split up of marks to be strictly
<ul> <li>Question paper pattern:</li> <li>All are individual experiments.</li> <li>Instructions as printed on the cover page of followed.</li> <li>All exercises are to be included for practical printed on the cover page of the practical printed on the cover page of the practical printed on the printed on the practical printed on the practical printed on the practical printed on the printed on</li></ul>	f answer script for split up of marks to be strictly I examination.
<ul> <li>Question paper pattern:</li> <li>All are individual experiments.</li> <li>Instructions as printed on the cover page of followed.</li> <li>All exercises are to be included for practical Reference Books:</li> </ul>	f answer script for split up of marks to be strictly
<ul> <li>Question paper pattern:</li> <li>All are individual experiments.</li> <li>Instructions as printed on the cover page of followed.</li> <li>All exercises are to be included for practical Reference Books:</li> <li>B.C. Punmia, "Surveying Vol.1", Laxmi Public</li> </ul>	f answer script for split up of marks to be strictly l examination. cations pvt. Ltd., New Delhi 2009.
<ul> <li>Question paper pattern:</li> <li>All are individual experiments.</li> <li>Instructions as printed on the cover page of followed.</li> <li>All exercises are to be included for practical Reference Books:</li> <li>B.C. Punmia, "Surveying Vol.1", Laxmi Public 2. Kanetkar T P and S V Kulkarni, Surveying and S V Kulkarni (Surveying and S V Kulkarni)</li> </ul>	f answer script for split up of marks to be strictly I examination. cations pvt. Ltd., New Delhi 2009. <b>nd Levelling Part I</b> , Pune VidyarthiGrihaPrakashan
<ul> <li>Question paper pattern:</li> <li>All are individual experiments.</li> <li>Instructions as printed on the cover page of followed.</li> <li>All exercises are to be included for practical Reference Books:</li> <li>B.C. Punmia, "Surveying Vol.1", Laxmi Public 2. Kanetkar T P and S V Kulkarni, Surveying at 1988</li> </ul>	f answer script for split up of marks to be strictly l examination. cations pvt. Ltd., New Delhi 2009. <b>nd Levelling Part I</b> , Pune VidyarthiGrihaPrakashan
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		Auto- Cad Lab				
B.E., III Semester, Civil Engineering						
[As per Choice Based Credit System (CBCS) scheme]						
Subject Code	22CVL38	CIE:	50			
Number of Lecture Hours/Week:	03	SEE:	50			
Total Number of Lecture Hours:	40	Exam Hours:	03			
	CREDITS	-01				
Course objectives: Provide students with a basic understanding <ul> <li>Achieve skill sets to prepare computer aided engineering drawings</li> <li>Understand the details of construction of different building elements.</li> <li>Visualize the completed form of the building and the intricacies of construction based on the engineering drawings.</li> </ul>						
	Modules		RBT Level/hrs			
Module -1 Drawing Basics: Selection of dimensioning, abbreviations Simple engineering drawing Multiline, Polygon, Rectang Offset, Array, Move, Rotate and Fillet, Using Text: Sing Features: View tools, Layer toolbars, Working with mul	10 Hours L1,L2					
Module -2 Drawings Related to Different Building Elements: Following drawings are to be prepared for the data given using CAD Software a. Cross section of Masonry Wall Foundation, b. RCC columns with isolated & combined footings. c. Different types of staircases – Dog legged, Open well d. Lintel and chajja e. RCC slabs and beams f. Cross section of a pavement Module -3 Building Drawings: Principles of planning, Planning regulations and building bye- laws, factors affecting site selection, Functional planning of residential and public buildings, design aspects for different public buildings. Recommendations of NBC. Submission drawing (sanction drawing) with access to terrace including all details and			10 Hours L2,L3,L4,L5, L6 20 Hours L2,L3,L4,L5, L6			

Drawing of Plan, elevation and sectional elevation including electrical, plumbing and	
sanitary services using CAD software for:	
a. Single story residential building	
b. Hostel building	
c. School building	
d. Draw the Single story residential building plan, elevation,	
sectional and site plan with all detailed naming as per municipal	
corporation rules	

Course Outcomes: After studying this course, students will be able to

1. Gain a broad understanding of planning and designing of buildings

2. Prepare, read and interpret the drawings in a professional set up.

3. Know the procedures of submission of drawings and Develop working and submission drawings for building

4. Plan and design a residential or public building as per the given requirements

Program Objectives

- Engineering knowledge
- Problem analysis
- Interpretation of data

Question paper pattern:

- There will be two full questions with sub divisions if necessary from Module 2 with each full question carrying *twenty* marks. Students have to answer one question.
- There will be two full questions from Module 3 with each full question carrying *thirty* marks. Students have to one answer one question.

Text book:

1. MG Shah, CM Kale, SY Patki, "Building drawing with an integrated approach to Built Environment Drawing", Tata Mc Graw Hill Publishing co. Ltd., New Delhi

2. Gurucharan Singh, "Building Construction", Standard Publishers, & distributors, New Delhi.

3. Malik R S and Meo G S, "Civil Engineering Drawing", Asian Publishers/Computech Publications Pvt Ltd.

Reference Books:

- 1. Time Saver Standard by Dodge F. W., F. W. Dodge Corp.,
- 2. IS: 962-1989 (Code of practice for architectural and building drawing)
- 3. National Building Code, BIS, New Delhi.

SOFT SKILLS [As per Choice Based Credit System (CBCS) scheme] SEMESTER –III				
Subject Code 22HSM310B	[310B CIE:50			
Number of Lecture Hours/Week: 03	SEE	: 50		
Total Number of Lecture Hours: 40	Exam H	ours:03		
CREDIT	ГS —01			
<ul> <li>Course Objectives : <ul> <li>To enable the students to obtain the basic knowledge about Communication Skills - I in the following topics:-</li> <li>The Meaning, definition, importance, purpose, process, types, barriers and Essential of communication.</li> <li>Develop reading and understanding ability</li> <li>Learn effective writing</li> <li>Learn how to write different types of letter.</li> <li>Case method of learning</li> </ul></li></ul>				
Modules		<b>RBT Level/hrs</b>		
Module - I INTRODUCTION TO COMMUNICATION: Meaning, Definition, Importance & Purpose of Communication, Process of Communication, Types of Communication, Communication network in an organization, 7c's of communication, Barriers to Communication and Essential of good Communication.		6 HOURS		
<b>Module – II</b> READING AND UNDERSTANDING – Reading Comprehension – Reading rate and reading comprehension, Paraphrasing, Book reading and summarizing it.		6 hours		
Module -III				
EFFECTIVE WRITING. Purpose of Writing, Clarity in Writing, Principle of writing using personal Experiences – Describir memorable events etc	5 Hours			
Module -IV				
DRAFTING OF LETTERS:6 HoursWriting different types of letters – writing for employment, joining letter, complaints & follows up , Enquiries, representation etc. Official Communication – e-mail & Social Media, environmental related issues.6 Hours				

Module - V			
CASE METHOD OF LEARNING: Understand Case method of learning, different type of cases, overcoming the difficulties of the case method, analyzing the case. Do's & Don'ts for case preparation.		5 HOURS	
Course		1	
	CO 1	Explain about basic of Communication C 2	
CO 2 Develop reading and understanding ability. ,C 2			
	<b>CO 3</b>	Learn effective writing. C 2	

CO 5Analyze a Case study and solveC 2Outcomes: At the end of the course the students will be able to

#### Pattern of question paper

**CO 4** 

Solve all five full questions selecting atleast one question from each module .

Learn how to write different types of letter C 2

#### **Text Books :**

- 1. Scot ofer, contemporary business communication, Biztant ra
- 2. Chaturvedi P D & Mukesh chaturvedi Business communication:Concepts, cases & applications- 2/e, pearson education.
- 3. Essential of Business communication Rajendra Pal and J.S Korlhall Sultan Chand & Sons, New Delhi.

## **Reference Books :**

- Business correspondence & report writing R.C.Sharma, Krishna Mohan Tata Megraww Hill Publising Company Ltd, New Delhi.
- ¤ Business Communcation K.K. Sinha Galgotio Publishing Company, New Delhi.

τιτι ε οε της ζοιμ	28F: Microsoft Office	
B.E., III Semester.	Civil Engineering	
[As per Choice Based Credi	it System (CBCS) scheme]	
Course Code:	Course Code: 22ACV311A	
Number of Lecture Hours/Week :03	Number of Lecture Hours/Week :03Number of Lecture Hours/Week :03otal Number of Hours: 30Total Number of Hours: 30	
Total Number of Hours: 30		
Cred	its – 01	
Course Objectives: The objectives of this course is to r	nake students to:	
Basic to Advanced topics of MS Word, MS Excel, MS F	PowerPoint and Internet and Emailing.	
Modules		RBT LEVE L/ HRS
<b>Module -1</b> <b>Introduction</b> Introduction to MS Windows, Computer Basics, MS V Emailing	Vord, MS Excel, MS Power point, Internet and	L1,L2 02 HRS
<b>Module -2</b> <b>MS Word</b> Text Basics, Text Formatting and saving file, Worl Working with bullets and numbered lists, Tables, Sharing and Maintaining Document ,Proofing the	king with Objects, Header & Footers, Styles and Content, Merging documents e document ,Printing	L1,L2 07 HRS
Module -3 MS Excel Introduction to Excel, Formatting excel work book Sort and Filter Data with Excel, Create Effective C Data Using PivotTables and Pivot Charts, Protecti Macros to Automate Tasks, Proofing and Printing	k, Perform Calculations with Functions, Charts to Present Data Visually, Analyze ng and Sharing the work book, Use	L2,L3 07 HRS
<b>Module -4</b> <b>MS Power point</b> Setting Up PowerPoint Environment, Creating sl bullets and numbering, Working with Objects, Hy Working With Movies and Sounds, Using Sma Transition, Using slide Master , Slide show option	ides and applying themes, Working with perlinks and Action Buttons rtArt and Tables, Animation and Slide , Proofing and Printing	L2,L3 07 HRS
Module -5 INTERNET & E-MAIL What is Internet?, Receiving Incoming Messag addressing, Email attachments, Browsing, Searc	es, Sending Outgoing Messages, Email h engines, Text chatting, Job Searching,	L2,L3 07 HRS

Downloading video and Music, Uploading Video or Music, Voice chatting, Webcam Chatting etc.

#### Question paper pattern:

- The question paper will have ten questions.
- Each full question consists of 10 marks.
- There will be 2 full questions (with a maximum of four sub questions) from each module.
- Each full question will have sub questions covering all the topics under a module.

The students will have to answer 5 full questions, selecting one full question from each module.

# **REFERENCE BOOKS:**

- 1. Mastering MS OFFICE by Bittu Kumar, Publisher: <u>V&S Publishers</u>
- 2. MS Office Skill Enhancement Course By MEPL Classes Dipak Agarwal