<u>Third</u> Semester

BTCE301A Strength of Material

- **CO1** To provide students with exposure to the systematic methods for solving engineering problems in solid mechanics.
- CO2 Apply the linear laws of elasticity as related to different stress and strain conditions.
- **CO3** To learn the concept of shear force and bending moment diagram for different structure component under various loading conditions.
- CO4 Determine the effect of combined axial and bending stress.
- CO5 Understand the behavior of columns and struts under axial loading.
- CO6 To learn about torsion, bending characteristics of shafts and various failure stress theories.

Chapter	1	2	3	4	5	6	7	8
C0								
CO 1	Μ							
		Μ						
CO 2			Μ					
CO 3				м				
003				IVI				
CO 4					М			
001								
CO 5						Μ		
CO 6							Μ	Μ

BTCE302A Fluid Mechanics

- **CO1** Able to describe appropriate physical properties of fluids and determine pressures and forces on submerged bodies.
- CO2 Able to understand the concepts of fluid dynamics and kinematic.
- **CO3** Ability to present data or governing equations in non-dimensional form, design experiments, and perform model studies.
- CO4 To study about laminar and turbulent flow, energy gradient and effects of head losses in pipes.
- CO5 To classify the flow in open channel and various momentum principles in open channels.
- **CO6** To learn the applications of specific energy to transitions and Broads crested weirs, Momentum and specific force in open channel flow.

Chapter	1	2	3	4	5	6	7	8
C0								
CO 1	Μ	Μ						
CO 2			Μ	Μ				
CO 3					Μ			
CO 4						Μ		
CO 5							Μ	
CO 6								Μ

BTCE303A Survey

- **CO1** Ability to use survey instruments in carrying out survey, collect data, write reports and able to perform required calculations to achieve the objective for different types of surveying for different Engineering projects.
- **CO2** Able to understand the different methods and techniques of surveying like levelling, compass survey, contouring and curve settings etc. and their applications in surveying.
- **CO3** Able to do field work and office work simultaneously with the help of plane table surveying
- **CO4** Apply the concept of Theodolite and Tachometry for surveying in different areas to obtain the topographical map of area.
- **CO5** To learn the different methods of setting out of curves.

Chapter CO	1	2	3	4	5	6	7
CO 1	Μ	Μ					
CO 2		Μ		Μ			
CO 3			Μ				
CO 4					Μ	Μ	
CO 5							Μ

BTCE304A Building Materials

- **CO1** Impart the knowledge about the characteristics, sources and defects in various materials used for construction purposes.
- **CO2** Able to design and test the materials either in the laboratory or in the field before their actual use at the site.
- **CO3** Learn to design concrete mixes by different methods.
- **CO4** Learn about different types of timbers being used in construction industry along with their uses characteristics ,defects and testing.
- **CO5** Able to know Paints and varnishes; Distempering; white and color washing; glass and glass products; Asphalt and Bitumen and their uses.

Chapter	1	2	3	4	5	6	7	8	9
C0									
CO 1	Μ	Μ		Μ			Μ		
CO 2		Μ	Μ						
CO 3				Μ	Μ	Μ			
CO 4							Μ		
CO 5								Μ	Μ

BTCE305A Fluid Mechanics Lab

CO1 Know the behavior of water current in rivers, canal and drains.

CO2 Use important practical results in common fluid flows.

CO3 Determine meta centre of a floating vessel.

CO4 Calibrate various flow measuring devices in pipe and open channel flow .

CO5 Determine various losses and velocity in pipe flow in field.

Chapter	1	2	3	4	5	6	7	8	9
C0									
CO 1				Μ	Μ	Μ			
CO 2	Μ	Μ							
CO 3	Μ						Μ		
CO 4								Μ	Μ
CO 5									Μ

BTCE306A Strength of Material Lab

- CO1 Know stress-strain curves of different materials used in the field under different loading conditions.
- CO2 Differentiate between properties of materials affect strength under various conditions.
- **CO3** Able to calculate simple tensile and shear stress using the appropriate guidelines and formats.
- CO4 Analyze the bending stress on different types of sections.
- CO5 Understand deflection of different sections at different loading conditions.

Chapter	1	2	3	4	5	6	7	8	9
со 🔨									
CO 1			Μ	Μ					
CO 2	Μ	Μ							
CO 3					Μ				
CO 4						Μ	Μ		
CO 5								Μ	Μ

BTCE307A Survey Lab

- **CO1** Prepare the survey sheet according to the method used.
- CO2 Application of theoretical considerations in field and other engineering projects.
- **CO3** Survey the area using different methods of plane tabling and compass survey and to adjust the compass traverse graphically.
- **CO4** Record the reduced levels using various methods of levelling and measurement of horizontal & vertical angles by Theodolite.
- CO5 Determine the location of any point horizontally and vertically using Tachometry.

Chapter	1	2	3	4	5	6	7
C0							
CO 1		Μ					Μ
CO 2	Μ	Μ					
CO 3		Μ				Μ	
CO 4			Μ	Μ			
CO 5					Μ	Μ	

BTCE308A Workshop Training

- **CO1** Useful during the field working in the industry & Civil Engineering works.
- **CO2** Understand modern manufacturing operations, including their capabilities, limitations and how to design economically.
- **CO3** Gain insight into how designers influence manufacturing schedule and cost, and cost of different components.
- **CO4** Learn how to analyze products and be able to improve their manufacturability and make the cost effectively.
- **CO5** Able to acquire skills in basic engineering practice and identify the hand tools and instruments.

BTCE311A Rock Mechanics & Engineering Geology

- **CO1** Appreciate importance of seismic activity considerations in a terrain.
- **CO2** Learn geology and its types, various structural features like folds, faults, joints, weathering etc., minerals, rocks, and rock formations in relation to civil engineering projects.
- **CO3** Understand various techniques to determine engineering properties of rocks etc. and distinguish the different types of rocks and minerals.
- **CO4** Understand various techniques to analyze and to make possible solutions for various Geological Engineering problems.

Chapter	1	2	3	4	5	6	7
C0 >>>							
CO 1	Μ						
CO 2		Μ	Μ				
CO 3				Μ	Μ		
CO 4				Μ		Μ	Μ

BTCE312A Principles and Economics of Management

- **CO1** To impart knowledge, with respect to concepts, principles and practical applications of Economics, which govern the functioning of a firm/organization under different market conditions.
- **CO2** To help the students to understand the fundamental concepts and principles of management; the basic roles, skills, functions of management, various organizational structures and basic knowledge of marketing.

Chapter	1	2	3	4	5	6	7
CO							
CO 1	Μ	Μ	Μ	Μ	Μ		
CO 2						Μ	Μ

BTCE-313A TOWN PLANNING

CO1 Able to explain the tools of town planning.

CO2 Able to explain different components of town and their effect in town planning.

CO3 Able to describe the facts relating to the Industrial areas of a town.

CO4 Able to describe the aspects involved in a Development Plan.

CO5 Able to apply land use regulation for planning issues.

Chapter CO	1	2	3	4	5	6	7
CO 1	Μ						
CO 2		M	M				
CO 3				M	M		
CO 4					Μ	M	
CO 5							Μ

BTHU-301A (PROFESSIONAL SKILLS)

LTP

002

Personality Development: General overview of Personality. Understanding Self Concept andSelf esteem, Building Self Esteem, Self Confidence, Assertiveness (activity Based training) Understanding assessment of Personality.

Mental Abilities: Understanding Intelligence, emotional intelligence, successful intelligence, development of emotional intelligence.

Social Etiquettes and Personal Grooming: Importance of social image, Do's and Dont's in dressing up, Developing an Understanding of Social Etiquettes.

Communication Skills: Features of an effective Communication. Verbal and Non- verbal Communication, Understanding role of body language in effective communication.

Recommended Books:

- 1. Personality Development by Harold Wallace and L. Ann Masters, Cengage Learning.
- 2. Psychology by Baron, Prentice Hall India.
- 3. Educational Psychology by Anita Woolfolk, Pearson
- 4. Organisational behaviour by Stephen Robbins, Pearson Education.
- 5. Communication in organisations by Dalmer Fisher, Jaico Publishing House, New Delhi.



BTCE401A STRUCTURAL ANALYSIS- I

CO1 To interpret the various methods of structural displacements.

- CO2 To analyse the determinate structure and its reaction diagram.
- **CO3** Draw the influence line diagram for rolling loads.
- CO4 To compute the pressure on supporting tower, suspension bridge etc.

CO5 Calculation of loads for no tension criteria on domes chimneys and retaining walls.

Chapter	1	2	3	4	5
co	_				
CO 1	Μ	Μ			
CO 2		М			
CO 3			М		
CO 4				Μ	
CO 5					Μ

BTCE402A CONSTRUCTION MACHINERY & WORKS MANAGEMENT

CO1 To describe the requirement of planning and management.

CO2 To recognize the critical path and pert suitability for research projects.

CO3 To determine projects schedule and estimate the activity time of CPM.

CO4 To discuss resource scheduling and planning of civil engineering Projects.

CO5 To illustrate various construction equipments and machinery, their utility.

Chapter	1	2	3	4	5	6	7
C0							
CO 1	Μ						
CO 2		Μ	Μ				
CO 3			Μ				
CO 4				Μ			
CO 5					Μ	Μ	Μ

BTCE403A IRRIGATION ENGINEERING

- **CO1** To understand various techniques and parameters of irrigation.
- **CO2** To analyse the design of lined canal and its problems.
- **CO3** Able to calculate losses in canals ,water logging Seepage force and uplift pressure using different theories of seepage.
- CO4 To analyse the design and classification of river training works according to ISI recommendations.
- **CO5** Learn about the weirs and energy dissipating devices, Design Different cross drainage works at canals, location and necessity of canal falls.

Chapter	1	2	3	4	5	6	7
C0							
CO 1	Μ	Μ					
CO 2			Μ				
CO 3			Μ				
CO 4				Μ			
CO 5					Μ	Μ	Μ

BTCE404A Building Construction

CO1 Able to learn about different types of masonry bonds used in construction techniques.

CO2 To know about ill effect of dampness in construction and its remedial measures.

CO3 Able to learn about arches, lintels, roof trusses and roof covering.

CO4 To know about the various door and windows fitting techniques.

CO5 To learn about different types of flooring ,Plastering, Pointing and Painting.

Chapter	1	2	3	4	5	6	7	8
C0 >>>								
CO 1	Μ	Μ						
CO 2		Μ						
CO 3			Μ	Μ				
CO 4					Μ			Μ
CO 5						Μ	Μ	

BTCE405A Structural Analysis Lab

- **CO1** Knowledge of the experimental study in structural analysis helps to check the stability of various structures in the field.
- CO2 Able to design and conduct experiments, as well as being able to analyze and interpret data.
- CO3 Able to design a system, component, or process to meet desired needs.
- **CO4** Able to function in multi-disciplinary teams.
- CO5 Able to identify, formulate, and solve engineering problems.

Chapter CO	1	2	3	4	5	6	7	8	9	10	11	12
CO 1	Μ	Μ	Μ									
CO 2			Μ	Μ	М							
CO 3							Μ	Μ	Μ			
CO 4						Μ						Μ
CO 5	Μ									Μ	Μ	Μ

BTCE 411AGeomatics Engineering

CO1 To understand the basic principles of aerial photogrammetry and its instrumental knowledge.

CO2 Illustration of different types of satellites and their characterstics.

CO3 To analysis the data based on GIS Systems and GIS errors.

CO4 Classification of Coordinate SYSTEM BASED ON GPS and its applications.

Chapter	1	2	3	4	5
$\frac{co}{co1}$	м				
COT	IVI				
CO 2		Μ			
CO 3			Μ		
CO 4				Μ	
CO 5					M

BTCE412A DISASTER MANAGEMENT

- CO1 To be familiar with disasters, their types, causes disaster management.
- **CO2** To learn the importance of capacity building, vulnerability, Risk mapping, stages in disaster recovery and associated problems.
- **CO3** To gain knowledge about Emergency medical and essential public health services, response and recovery operations, reconstruction and rehabilitation, role of different agencies during disasters.
- **CO4** To learn the use of modern techniques like Remote Sensing Systems (RSS) and GIS in disaster Management, role of knowledge based expert systems in hazard scenario, using risks-time charts to plan for the future, early warning systems.
- **CO5** To learn about Planning and design of infrastructure for disaster management, Community based approach in disaster management, Lessons and experiences from various important disasters. Civil Engineering.

Chapter	1	2	3	4	5	6	7	8
C0								
CO 1	Μ	Μ						
CO 2			Μ		Μ			
CO 3				Μ				
CO 4						Μ		
CO 5							Μ	Μ

BTCE413A Building Maintenance

CO1 Able to explain the meaning of terms commonly used in the building maintenance.

CO2 Able to explain design and economic consideration in maintenance .

CO3 Able to make decisions about the management and maintenance of building systems.

CO4 Able to use material commonly used in the building maintenance.

CO5 To learn various tests and design considerations regarding diagnosis and repair of structure.

CO6 Able to learn various defects in buildings and their remedial measures.

Chapter	1	2	3	4	5	6
CO >>>						
CO 1	Μ					
CO 2		Μ				
CO 3			Μ			
CO 4				Μ		
CO 5					Μ	
CO 6						Μ