SCHEME OF STUDIES & EXAMINATIONS

Department: Civil Engineering – 3rd Semester

Sr. No	Course No.	Course Title	Teaching Schedule			Marks of class work	Examination Marks		Total	Credit	Duration of Exam
			L	T	P		Theory	practical			
1	GES 201 B	ENVIRONMENTAL STUDIES	3	-	-	-	75*	-	75*	-	3
2	CE 201 B	STRENGTH OF MATERIALS	3	1	-	25	75	-	100	4	3
3	CE 203 B	SURVEYING	3	1	-	25	75	-	100	4	**3**
4	CE 205 B	FLUID MECHANICS	3	1	-	25	75	-	100	4	3
5	CE 207 B	BUILDING CONSTRUCTION AND DRAWING	3	-	3	25	75	-	100	4.5	3
6	CE 209 B	BUILDING MATERIALS	3	1	-	25	75	-	100	4	3
7	CE 211 B	STRENGTH OF MATERIALS LAB	-	-	2	20	-	30	50	1	3
8	CE 213 B	SURVEYNG LAB	-	-	2	20	-	30	50	1	3
9	CE 215 B	FLUID MECHANICS LAB	-	-	2	20	-	30	50	1	3
10	GES 203 B	ENVIRONMENTAL STUDIES	-	-	-	-	-	25	25*	-	
Total			18	4	11	235	375	115	725	25.5	

Note:

1. Every student has to participate in the sports activities. Minimum one hour is fixed for sports activities either in the morning or evening. Weightage of Sports is given in General Proficiency Syllabus.
2. The Environmental studies (GES-201 B) & Environment Studies Field work (GES-203B) are compulsory & qualifying courses.
3. The students will be allowed to use non-programmable scientific calculator. However, sharing/exchange of calculator is prohibited in the examination.
4. Electronics gadgets including Cellular phones are not allowed in the examination
5. * Assessment of workshop training undergone in summer vacations at the end of second semester will be based on seminar /viva voce/report and certificate of workshop training by the students from in house workshop.

SYLLABUS: B Tech (CE)

Department: Civil Engineering – 3rd Semester

Subject: Environmental Studies **Subject Code: GES-201B**

Detailed Content

Unit No.1

Topic No.1 : The Multidisciplinary nature of environmental studies
Topic No.2 : Definition, scope and importance
Topic No.3 : Need for Public awareness

Unit No.2 Natural resources:

Topic No.4 : Renewable and non-renewable resources
Topic No.5 : Natural resources and associated problems

Unit No.3 Ecosystems:

Topic No.6 : Concept of an ecosystem, Structure and function of an ecosystem
Topic No.7 : Producers, consumers and decomposers
Topic No.8 : Energy flow in the ecosystem
Topic No.9 : Ecological succession, Food chains
Topic No.10: Food webs and ecological pyramids
Topic No.11: Introduction, types, characteristic features
Topic No.12: Structure and function of the following eco-system
Topic No.13: Forest ecosystem, Grassland ecosystem
Topic No.14: Desert ecosystem.
Topic No.15: Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit No.4 Biodiversity and its conservations:

Topic No.16: Introduction – Definition: Genetic
Topic No.17: Biogeographically classification of India, Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values
Topic No.18: Biodiversity at global, National and local levels, India as a mega-diversity nation
Topic No.19: Hot-spots of biodiversity
Topic No.20: Endangered and endemic species of India

Unit No.5 Environmental pollution:

Topic No.21: Definition, causes, effects and control, measures of: Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal Pollution, Nuclear hazards
Topic No.22: Solid waste management: Causes effects and control measures of urban and industrial wastes

Unit No.6 Social issues and the environment:

Topic No.23: From unsustainable to sustainable development
Topic No.24: Urban problems related to energy
Topic No.25: Water conservation, rain water harvesting, watershed management

Unit No.7

Topic No.26: Human population and the Environment., Population growth
Topic No.27: Variation among nations. Population explosion
Topic No.28: Famility Welfare Programme, Environment

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	-	-	0	-	75	3 hours	75

REFERENCE BOOKS:

1. Agarwal, K.C. 2001, Environmental Biology, Nidi Pub. Ltd. Bikaner.
2. Bharucha, Franch, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad – 380013, India .
3. Brunner R.C. 1989, Hazardous Waste Incineration, Mc. Graw Hill Inc. 480p.

SYLLABUS: B Tech (CE)

Department: Civil Engineering – 3rd Semester

Subject: Strength Of Materials (Theory) **Subject Code: CE-201B**

Detailed Content

Unit No.1 Introduction, Shear force and Bending moment diagrams

Topic No.1 : Concept of Equilibrium General Equilibrium equations, concept of free body diagrams
Topic No.2 : Concept of stress and strain, generalized Hooke's law
Topic No.3 : Stress-strain diagram of ductile and brittle material, compound and composite bars
Topic No.4 : Thermal stresses, Analysis of Principal stresses and Strains
Topic No.5 : Mohr's stress circle, Relationship among elastic constants
Topic No.6 : Types of load on beam and frames, classification of beams, statically determinate and indeterminate problems
Topic No.7 : Shear force and bending moment diagrams: simply supported, overhung and cantilever beams subjected to any combination of point loads
Topic No.8 : Uniformly distributed and varying load and moment, relationship between load, shear force and bending moment.

Unit No.2 Theory of pure bending, Shear Stresses in Beams

Topic No.9 : Centroid of simple and built up section, second moment of area
Topic No.10: Derivation of flexural formula for straight beams, bending stress calculation for beams of simple and built up section
Topic No.11: RCC beams
Topic No.12: Shear stress formula for beams, shear stress distribution in beams

Unit No.3 Torsion of Circular shafts, Columns & Struts

Topic No.13: Basic assumptions, torsion formula
Topic No.14: Power transmitted by shafts, design of solid and Hollow shafts based on strength and stiffness
Topic No.15: Column under axial load, concept of instability and buckling
Topic No.16: Slenderness ratio, derivation of Euler's formulae for the elastic buckling load
Topic No.17: Eulers, Rankine, Gordon's formulae Johnson's empirical formula for axial loading columns and their applications
Topic No.18: Eccentric compression of a short strut of rectangular & circular sections, Numericals

Unit No.4 Slope & Deflection, Strain energy

Topic No.19: Strain energy under axial, bending, shear
Topic No.20: Torsion, gradual, sudden and impact loading
Topic No.21: Theories of failures
Topic No.22: Relationship between bending moment, slope & deflection
Topic No.23: Moment area method, method of integration, Macaulay's method

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	100

TEXT BOOKS:

1. Strength of Materials by G H Ryder, ELBS publishers
2. Elements of Strength of Materials by Timoshenko & Young, East- West Press, New Delhi
3. Mechanics of Materials by Beer and Johnston, Tata McGraw Hill.
4. Elementary Structural Analysis, Norris & Wilbur, McGraw Hill Publisher
5. Engineering Mechanics Shames

REFERENCE BOOKS:

1. Strength of Materials by Sadhu Singh, Khanna Publishers
2. Basic Structural Analysis, C.S. Reddy, Tata McGraw Hill Publication.

3. Fundamentals of Solid Mechanics by M L Gambhir, Prentice Hall of India
4. Strength of Materials Ramamurtham and Narayanan, S. Chand & Co.
5. Fundamentals of Structural Analysis B D Nautiyal, New Age Publishers

Note:

1. In the semester examination, the examiner will set one question from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.
2. The use of scientific calculator will be allowed in the examination. However, programmable calculator and cellular phone will not be allowed.

SYLLABUS: B Tech (CE)

Department: Civil Engineering – 3rd Semester

Subject: Surveying (Theory) **Subject Code: CE-203B**

Detailed Content

Unit No.1 Introduction to Surveying, Compass surveying & Plane Table Surveying

Topic No.1 : Definition, importance, Objectives, Maps
Topic No.2 : Scale, Principles of survey, Classification of surveys
Topic No.3 : Different techniques of surveying, Chain Surveying: Ranging
Topic No.4 : Chaining, Offsets, Errors in Chaining, Corrections to length measured with a tape
Topic No.5 : Purpose of compass surveying, Comparison of compass surveying and chain surveying, Dip, Magnetic Declination
Topic No.6 : W.C.B., Q.B., and R.B Introduction to plane table surveying, principle
Topic No.7 : Instruments, working operations, setting up the plane table, centering
Topic No.8 : Leveling, Orientation, methods of plane table survey, danger circle
Topic No.9 : Lehmann's Rules, errors in plane tabling

Unit No.2 Leveling, Trigonometric Leveling

Topic No.10: Definitions of terms used in leveling, different types of levels, parallax
Topic No.11: Staves, adjustments, bench marks, classification of leveling
Topic No.12: Booking and reducing the levels, rise and fall method, line of collimation method
Topic No.13: Errors in leveling, permanent adjustments, Two peg test, reciprocal leveling
Topic No.14: Corrections to curvature and refraction, setting out grades, longitudinal leveling
Topic No.15: Definitions & terms, curvature & refraction Methods: direct & reciprocal
Topic No.16: Eye and object correction, coefficient of refraction
Topic No.17: Definition, representation of reliefs, horizontal equivalent, contour interval, characteristics of contours, methods of contouring, contour gradient, uses of contour maps

Unit No.3 Tachometry, Theodolite Traversing

Topic No.18: Definitions and terms used in tachometry, angular tachometry with staff vertical and staff inclined
Topic No.19: Analytic lens theory, Tachometric field work, tangential method of tachometry
Topic No.20: Subtense method of tachometry, direct reading tachometer
Topic No.21: Types of theodolities, measurement of angles, temporary and permanent adjustments
Topic No.22: Closed & open traverse, omitted measurements, consecutive and independent coordinates
Topic No.23: Advantages & disadvantages of traversing closing error
Topic No.24: Bowditch, Transit rules

Unit No.4 Triangulation, Curves

Topic No.25: Triangulation systems, classification, strength of figure
Topic No.26: Selection of triangulation stations, grade of triangulation
Topic No.27: Field work of triangulation, triangulation computations, Introduction to EDM
Topic No.28: Total Station and its working, survey adjustment and treatment of observation
Topic No.29: Adjustment of triangulation figures by method of least squares
Topic No.30: Definition, elements of a simple curve, different methods of setting out a simple circular curve
Topic No.31: Elements of a compound curve, reverse curves, transition curves, their characteristics

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	100

TEXT BOOKS:

1. Surveying by R. Agor, Khanna Publishers, New Delhi
2. Surveying-1 by Sanjay Mahajan, Satya Prakashan, New Delhi

3. Surveying Vol. I and II by B.C. Punmia, Luxmi Publications, New Delhi
4. Syrveying and Levelling by R. Subramanian, Oxford University Press.

REFERENCE BOOKS:

1. Surveying by N. Singh, Tata McGraw Hill, New Delhi.
2. A Text Book of Surveying by C.Venkataramiah, Universities Press, Hyderabad

Note:

1. In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.
2. The use of scientific calculator will be allowed in the examination. However, programmable calculator and cellular phone will not be allowed.

SYLLABUS: B Tech (CE)

Department: Civil Engineering – 3rd Semester

Subject: Fluid Mechanics (Theory) **Subject Code: CE-205B**

Detailed Content

Unit No.1 Scope & development of Fluid Mechanics Fluid properties

Topic No.1 : Density, Specific weight, Viscosity, Kinematic and Dynamic viscosity
Topic No.2 : Surface tension, Compressibility, Newtonian and Non Newtonian fluids
Topic No.3 : Types of fluids, capillary action. Kinematics of fluid motion
Topic No.4 : Classification of flow: Laminar and Turbulent flows, Reynolds experiments
Topic No.5 : Stream lines, Path lines, Streak lines. Continuity equations in Cartesian coordinates
Topic No.6 : Rotational and Irrotational flows, Velocity Potential, Stream Function and Flow nets

Unit No.2 Fluid statics

Topic No.7 : Absolute and Gauge pressure, Measurement of pressure, Mechanical gauges
Topic No.8 : Barometers, Piezometers, Simple and Differential manometer, Inclined manometer
Topic No.9 : And Micro manometer. Hydrostatic forces on plane horizontal, Vertical and Inclined surfaces
Topic No.10: Curved surface. Buoyant force, Archimedes principle
Topic No.11: Metacentric height, Theoretical and Experimental determination of metacentric height
Topic No.12: Stability of floating and submerged bodies, Static fluid subjected to uniform acceleration and fluid rotation about a vertical axis

Unit No.3 Fluid dynamics and pipe flows

Topic No.13: Euler's equation of motion, Bernoulli's equation and its limitations.
Topic No.14: Momentum equation, Energy and Momentum correction factors
Topic No.15: Energy losses in pipe flows, Darcy-Weisbach equation, Estimation of friction factor
Topic No.16: Loss at sudden expansion, contraction and bends, Pipe flow computations
Topic No.17: Hydraulic gradient and total energy lines, Pipes in series and parallel
Topic No.18: Flow measuring devices: Venturimeter and Orifice meters, etc

Unit No.4 Laminar flow, Drag and lift

Topic No.19: Navier stokes equation of motion (no derivation), Laminar flow through pipes
Topic No.20: parallel plates, Couttee flow, Flow past a sphere, Stokes law
Topic No.21: Boundary layer - development of boundary layer on a flat surface, boundary layer thickness
Topic No.22: Laminar and turbulent boundary layers, separation of boundary layer and methods for prevention
Topic No.23: Definitions, Pressure drag and Friction drag, Stream line and Bluff bodies
Topic No.24: Total drag, Drag at different Reynolds numbers, Profile drag
Topic No.25: Drag characteristics of two dimensional bodies, Circulation
Topic No.26: Lift and Magnus effect, Lift characteristics of Aerofoils

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	100

TEXT BOOKS:

1. R. J. Garde and Mirajgaonkar, "Engineering Fluid Mechanics", Nem Chand & Brothers, Roorkee.
2. K L Kumar, "Engineering Fluid Mechanics", Eurasia Publishing House.

REFERENCE BOOKS:

1. H. Schlichting, "Boundary Layer Theory", McGraw Hill Publishing Company, New York.
2. Fox R. W. and McDonald, A T, "Introduction to Fluid Mechanics", John Wiley Wilson
3. Fluid Mechanics Through Problems, R J Garde, Nem Chand & Brothers, Roorkee
4. Hydraulics and Fluid Mechanics, P N Modi & S M Seth
5. Streeter, V L and Benjamin, W E , "Fluid Mechanics", McGraw Hill.

SYLLABUS: B Tech (CE)

Department: Civil Engineering – 3rd Semester

Subject: Building Construction And Drawing **Subject Code: CE-207B**

Detailed Content

Unit No.1 Components of a building, Masonry

Topic No.1 : Components of a building and building specifications, Site preparation and setting out of works
Topic No.2 : Building layout, Building bye-laws
Topic No.3 : Stone masonry, basic terms, materials for stone masonry
Topic No.4 : Classification, dressing of stones, joints in stone masonry
Topic No.5 : Brick Masonry, laying tools, basic terms, bonding of bricks, tools
Topic No.6 : Inspection of brickwork, strength of brick work, Cavity walls
Topic No.7 : Features, wall ties, construction of cavity wall, Lintels, classifications, Arches
Topic No.8 : Classification and construction, Temporary works: Formwork and Scaffolding, Drawings

Unit No.2 Doors & windows, Roofs & roof coverings

Topic No.9 : Introduction, location in buildings, basic terms, standard sizes, size of timber
Topic No.10: Types of doors, fittings for doors, door frames, types of doors
Topic No.11: Types of windows, standard sizes of windows, drawings
Topic No.12: Types of roofs, pitched roofs, Flat roofs etc, Roof covering
Topic No.13: Tiles, ACC, Tin & G.I. Sheets with details at joints bearings and ridges. Drawings

Unit No.3 Earthwork, Damp proof course

Topic No.14: Points of its requirement in buildings, D.P.C. at Plinth level
Topic No.15: Basement and roof tops etc., Anti-termite treatment
Topic No.16: Basement & Retaining walls. Drawings
Topic No.17: Types and suitability, spread, arch
Topic No.18: Combined, cantilevered, Raft, Grillage, Piles & wells
Topic No.19: Footings in block cotton soil, IS Specifications and drawings

Unit No.4 Housing, Stairs & Stair cases

Topic No.20: Introduction, definitions, Acoustics and sound proofing
Topic No.21: Ventilation and air-conditioning, Fire hazards, fire fighting system means of escape alarms system
Topic No.22: Fire prevention measures, maintenance standards
Topic No.23: Maintenance of floorings, doors, windows, sanitary appliances
Topic No.24: Electrical systems and septic tanks
Topic No.25: Suitability of location, stairs in multi-storeyed buildings
Topic No.26: Residential and public buildings, dimensions, Requirements, classification

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	-	3	4.5	25	75	3 hours	100

TEXT BOOKS:

1. Building Construction by Sushil Kumar, Standard Publisher and Distributors.
2. Building Construction by B. C. Punima, Laxmi Publisher House

REFERENCE BOOKS:

1. Indian Practical Civil Engg. Handbook, P N Khanna, Engineers Publishers, 2000.
2. National Building Code, B. I. S.
3. Handbook of Building Construction, M M Goel, Amrindia Consultancy.
4. Building Construction by P C Varghese, PHI
5. Masonry & timber structures including earthquake resistant design, A S Arya, Nem Chand & Bros.

SYLLABUS: B Tech (CE)

Department: Civil Engineering – 3rd Semester

Subject: Building Materials **Subject Code: CE-209B**

Detailed Content

Unit No.1 Mechanical Properties of Materials, Bricks

Topic No.1 : Hardness, Creep, Fatigue and fracture, Wear properties
Topic No.2 : Corrosion Process: Corrosion, Cause of corrosion
Topic No.3 : Types of corrosion, protection against corrosion
Topic No.4 : Composition of good brick earth, harmful ingredient
Topic No.5 : Manufacture of bricks, characteristics of good bricks, classification of bricks as per IS 1077-1985
Topic No.6 : Classification of rocks, test for stones, characteristics of a good building stone
Topic No.7 : Deterioration of stones, common building stones of India
Topic No.8 : Comparison of the brick work and stone work

Unit No.2 Cement, Lime

Topic No.9 : Types, Manufacture, basic properties of cement compounds
Topic No.10: Grades, packing, storage, quality control and curing
Topic No.11: Additives, special cements, testing
Topic No.12: Classifications & Properties, and tests
Topic No.13: Preparation, types and tests for mortars

Unit No.3 Timber, Steel

Topic No.14: Classification and identification of timber, defects in timber
Topic No.15: Characteristics of good timber, seasoning of timber and its methods
Topic No.16: Preservation of timber, varieties of industrial timber
Topic No.17: Famous Indian timber trees, Plywood
Topic No.18: Manufacture of steel, market forms of steel e.g. mild steel and HYSD steel bars
Topic No.19: Rolled steel sections, stainless steel

Unit No.4 Building glasses, Paints and Varnishes

Topic No.20: Characteristics and performance, uses, manufacture and classification
Topic No.21: Treatment, testing
Topic No.22: Classification, selection criteria, distempers, varnishes
Topic No.23: Industrial paints, Properties and uses of Bitumenous materials
Topic No.24: Flyash, Geosynthetics, Adhesives and Admixtures in civil works

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	100

TEXT BOOKS:

1. Building Materials by P C Varghese, PHI.
2. Engineering Materials, by S.C. Rangawala, Charotar Publishing House, Anand.

REFERENCE BOOKS:

1. Engineering Materials, by Sushil Kumar, Metropolitan Press
2. Engineering Materials by N.C. Choudhary, Technical Publishers.
3. Materials Science, J.C. Anderson & KDB Lever, ELBS fifth Edn., 2004.
4. Indian Practical Civil Engg. Handbook, P N Khanna, Engineers Publishers, 2000.
5. National Building Code, B. I. S.

SYLLABUS: B Tech (CE)

Department: Civil Engineering – 3rd Semester

Subject: Strength Of Materials Lab **Subject Code: CE-211B**

Detailed Content

List of Experiments:

1. To determine Rockwell hardness number of the specimen of steel/soft metal.
2. To determine Brinnel hardness number of the specimen of steel/soft metal.
3. To determine Vickers hardness number of the specimen of steel/soft metal.
4. To study the behavior of ductile material under tension on Universal Testing Machine
5. To study the behavior of brittle material under tension on Universal Testing machine
6. To study the behavior of brittle material under comprssionon Universal Testing machine
7. To determine the modulus of rigidity of brass bar on torsion testing machine
8. To determine the impact strength of M.S./C.I. specimen on Izod impact testing machine.
9. To determine the impact strength of M.S./C.I. specimen on Charpy impact testing machine.
10. To determine Young's modulus of the material of a beam simply supported at the ends and carrying a concentrated load at the centre

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
-	-	2	1	20	30	3 hours	50

Note:
Seven experiments are to be performed from the above list. Remaining three experiments should be performed as designed & set by the concerned Institution as per the scope of the syllabus.

SYLLABUS: B Tech (CE)

Department: Civil Engineering – 3rd Semester

Subject: Surveying Lab **Subject Code: CE-213B**

Detailed Content

List of Experiments:

1. Chain Survey of an area
2. Leveling Exercises.
3. Measurement of vertical and horizontal angles with Theodolite.
4. Tachometric Survey
5. Tachometric Constants.
6. Two point / three point problem.
7. Plane table survey of an area.
8. Setting out a simple circular curve by different methods.
9. Setting out transition curve.
10. Measurements with Total Station.

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
-	-	2	1	20	30	3 hours	50

Note:

Ten experiments are to be performed in the Semester taking atleast seven experiments from the above list. Remaining three experiments should be performed as designed & set by the concerned Institution as per the scope of the syllabus.

SYLLABUS: B Tech (CE)

Department: Civil Engineering – 3rd Semester

Subject: Fluid Mechanics Lab **Subject Code: CE-215B**

Detailed Content

List of Experiments:

1. Verification of Bernoulli's Theorem.
2. Calibration of Venturimeter.
3. Calibration of an orifice meter.
4. Determination of Coefficients of Contraction, Velocity and Discharge of a circular orifice.
5. Determination of friction factor for pipes.
6. Visualization of laminar and turbulent flow and estimating critical Reynold's number.
7. Determination of metacentric height of a ship model.
8. To measure the velocity distribution over a flat surface in a wind tunnel and to determine the Reynold's no. and boundary layer thickness along the plate.
9. To measure the pressure distribution around a cylinder in a wind tunnel and to calculate the coefficient of drag at different Reynold's number.

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
-	-	2	1	20	30	3 hours	50

Note:
Students are required to complete at least eight experiments from the above list.

SYLLABUS: B Tech (CE)

Department: Civil Engineering – 3rd Semester

Subject: Environmental Studies Field Work **Subject Code: GES-203B**

Detailed Content

FIELD WORK:

- Visit to a local area to document environmental assets – river/ forest/ grassland/ hill/ mountain.
- Visit to a local polluted site-Urban/ Rural/ Industrial/ Agricultural.
- Study of common plants, insects, birds.
- Study of simple ecosystems – pond, river, hill slopes, etc. (Field work equal to 5 lectures hours).

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
-	-	-	0	25	-	-	25

Note:
The awards of this paper shall not be counted in the award of the Degree/DMC.

SYLLABUS: B Tech (CE)

Department: Civil Engineering – 3rd Semester

Subject: Engineering Economics **Subject Code: MGT-201B**

Detailed Content

Unit No.1 Definition of economics

Topic No.1 : Various definitions, nature of Economic problem
Topic No.2 : Micro and macro economics- their feature and scope
Topic No.3 : Production possibility curve, Economic laws and their nature
Topic No.4 : Relation between Science, Engineering Technology and Economics
Topic No.5 : Concept and measurement of utility, Law of Diminishing Marginal Utility
Topic No.6 : Law of equi-marginal utility – its practical application and importance

Unit No.2

Topic No.7 : Meaning of Demand, Individual and Market demand schedule
Topic No.8 : Law of demand, shape of demand curve. Elasticity of demand, measurement of elasticity of demand
Topic No.9 : factors effecting elasticity of demand, practical importance & application of the concept of elasticity of demand
Topic No.10: Various concepts of cost-Fixed cost, variable cost, average cost, marginal cost
Topic No.11: Money cost, real cost, opportunity cost. Shape of average cost
Topic No.12: Marginal cost, total cost etc. in short run and long run

Unit No.3

Topic No.13: Meaning of production and factors of production
Topic No.14: Law of variable proportions, Law of Return to Scale
Topic No.15: Internet and External economics and diseconomies of scale
Topic No.16: Meaning of Market, Type of Marker– perfect Competition
Topic No.17: Monopoly, Oligopoly, Monopolistic competition

Unit No.4

Topic No.18: Supply and Law of Supply, Role of Demand & Supply in Price Determination
Topic No.19: Nature and characteristics of Indian economy
Topic No.20: Privatization – meaning, merits and demerits
Topic No.21: Globalisation of India economy – merits and demerits
Topic No.22: Elementary Concept of WTO & TRIPS agreement, Monitory Policy & Fiscal Policy

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
4	-	-	4	25	75	3 hours	100

TEXT BOOKS:

1. Ahuja H.L"Micro Ecomomic Theory" S. Chand Publication, New Delhi
2. Dewett K.K "Modern Ecomomic Theory" S. Chand Publication, New Delhi
3. Jain T.R, Grover M.L, Ohri V.K Khanna O.P,"Economics for engineers" V.K .Publication ,New Delhi

Note:

1. In the semester examination, the examiner will set two questions from each unit (total 08 questions in all), covering the entire syllabus. The students will be required to attempt only 5 questions selecting at least one question from each unit.
2. The use of scientific calculator will be allowed in the examination. However, programmable calculator and cellular phone will not be allowed.