

Discipline-Civil Engineering	Semestar- 5th	Name Of the teaching Faculty: Er. Manoranjan Nayak
SUBJECT- ENTREPRENEURS HIP and MANAGEMENT & Week	No. of Days/per week class a	Semestar From Date : 1/10/2021 To Date: 8/1/2022 No. Of Weeks: 13
	Class Day	Theory/Practical Topics
1st	1st	Concept /Meaning of Entrepreneurship
	2nd	Need of Entrepreneurship
	3rd	Characteristics, Qualities and Types of entrepreneur, Functions
	4th	Barriers in entrepreneurship
2nd	1st	Entrepreneurs vrs. Manager
	2nd	Forms of Business Ownership: Sole proprietorship, partnership forms and others
	3rd	Types of Industries, Concept of Start-ups
	4th	Entrepreneurial support agencies at National, State, District Level( Sources): DIC, NSIC,OSIC, SIDBI, NABARD, Commercial Banks, KVIC
3rd	1st	Technology Business Incubators (TBI) and Science and Technology Entrepreneur Parks
	2nd	Business Planning
	3rd	SSI, Ancillary Units, Tiny Units, Service sector Units
	4th	Time schedule Plan, Agencies to be contacted for Project Implementation
4th	1st	Assessment of Demand and supply and Potential areas of Growth
	2nd	Identifying Business Opportunity , Final Product selection
	3rd	Preliminary project report
	4th	Detailed project report, Techno economic Feasibility
5th	1st	Project Viability
	2nd	Definitions of management
	3rd	Principles of management
	4th	Functions of management (planning, organising, staffing, directing and controlling etc.)
6th	1st	Level of Management in an Organisation
	2nd	Production management ,Functions, Activities
	3rd	Productivity , Quality control , Production Planning and control
	4th	Need for Inventory management
7th	1st	Models/Techniques of Inventory management
	2nd	Functions of Financial management
	3rd	Management of Working capital
	4th	Break even Analysis
8th	1st	Brief idea about Accounting Terminologies: Book Keeping, Journal entry, Petty Cash book, P&L Accounts, Balance Sheets
		Concept of Marketing and Marketing Management

	2nd	Marketing Techniques
	3rd	Concept of 4P s (Price, Place, Product, Promotion)
	4th	Functions of Personnel Management
9th	1st	Manpower Planning, Recruitment, Sources of manpower, Selection process, Method of Testing, Methods of Training & Development, Payment of Wages
	2nd	Definition and Need/Importance
	3rd	Qualities and functions of a leader
	4th	Manager Vs Leader
10th	1st	Style of Leadership (Autocratic, Democratic, Participative
	2nd	Definition and characteristics , Importance of motivation
	3rd	Factors affecting motivation
	4th	Theories of motivation (Maslow)
11th	1st	Methods of Improving Motivation
	2nd	Importance of Communication in Business
	3rd	Types and Barriers of Communication
	4th	Human relationship and Performance in Organization
12th	1st	Relations with Peers, Superiors and Subordinates
	2nd	TQM concepts: Quality Policy, Quality Management, Quality system, Accidents and Safety, Cause, preventive measures, General Safety Rules , Personal Protection Equipment(PPE
	3rd	Intellectual Property Rights(IPR), Patents, Trademarks, Copyrights b) Features of Factories Act 1948 with Amendment c) Features of Payment of Wages Act 1936
	4th	Concept of IOT, How IOT works ☐ Components of IOT, Characteristics of IOT, Categories of IOT
13th	1st	Applications of IOT- Smart Cities, Smart Transportation, Smart Home, Smart Healthcare, Smart Industry, Smart Agriculture, Smart Energy Management

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Discipline-Civil Engineering	Semestar- 5th	Name Of the teaching Faculty: Er. Pramila Gouda
Subject-STRUCTURAL DESIGN-II	No. of Days/per week class allotted:4	Semestar From Date : 1/10/2021 To Date: 8/1/22 No. Of Weeks:15
Week	Class Day	Theory/Practical Topics
1st	1st	introduction:Common steel structures, Advantages & disadvantages of steel structures.Types of steel, properties of structural steel
	2nd	Rolled steel sections, special considerations in steel design.
	3rd	Loads and load combinations
	4th	Structural analysis and design philosophy
2nd	1st	Brief review of Principles of Limit State design
	2nd	<b>CHAPTER-2: Structural Steel Fasteners and Connections.</b> Bolted Connections, Classification of bolts, advantages and disadvantages of bolted connections.
	3rd	Different terminology, spacing and edge distance of bolt holes
	4th	Types of bolted connections.Types of action of fasteners, assumptions and principles of design.
3rd	1st	Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity), reduction factors, and shear capacity of HSFG bolts.Efficiency of a joint
	2nd	Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)
	3rd	Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)
	4th	Welded Connections: Advantages and Disadvantages of welded connection
4th	1st	Types of welded joints and specifications for welding
	2nd	Design stresses in welds.
	3rd	Strength of welded joints
	4th	<b>CHAPTER-3: Design of Steel tension Members.</b> Common shapes of tension members.
5th	1st	Maximum values of effective slenderness ratio.
	2nd	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	3rd	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)

	4th	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
		Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
6th	1st	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	2nd	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	3rd	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	4th	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
7th	1st	<b>CHAPTER-4: Design of Steel Compression members.</b> Common shapes of compression members.
	2nd	Buckling class of cross sections, slenderness ratio
	3rd	Design compressive stress and strength of compression members.
	4th	Design compressive stress and strength of compression members.
8th	1st	Design compressive stress and strength of compression members.
	2nd	Design compressive stress and strength of compression members.
	3rd	Analysis and Design of compression members (axial load only).
	4th	Analysis and Design of compression members (axial load only).
9th	1st	Analysis and Design of compression members (axial load only).
	2nd	Analysis and Design of compression members (axial load only).
	3rd	<b>CHAPTER-5: Design of Steel beams:Common cross sections and their classification.</b>
	4th	Common cross sections and their classification.
10th	1st	Deflection limits, web buckling and web crippling.
	2nd	Deflection limits, web buckling and web crippling.
	3rd	Deflection limits, web buckling and web crippling.
	4th	Design of laterally supported beams against bending and shear.
11th	1st	Design of laterally supported beams against bending and shear.
	2nd	Design of laterally supported beams against bending and shear.

	3rd	Design of laterally supported beams against bending and shear.
	4th	Design of laterally supported beams against bending and shear.
12th	1st	<b>CHAPTER-6: Design of Tubular Steel Structures:Round Tubular Sections, Permissible Stresses</b>
	2nd	<b>:Round Tubular Sections, Permissible Stresses</b>
	3rd	Tubular Compression & Tension Members
	4th	Tubular Compression & Tension Members
13th	1st	Joints in Tubular trusses
	2nd	Joints in Tubular trusses
	3rd	<b>CHAPTER-7:Design of Masonry Structures.Design considerations for Masonry walls &amp; Columns</b>
	4th	Load Bearing & Non-Load Bearing walls
14th	1st	Load Bearing & Non-Load Bearing walls
	2nd	Permissible stresses,
	3rd	Permissible stresses,
	4th	Slenderness Ratio,
15th	1st	Slenderness Ratio,
	2nd	Effective Length, Height & Thickness.
	3rd	Effective Length, Height & Thickness.

  
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Discipline-Civil Engineering	Semestar- 5th	Name Of the teaching Faculty: Er.Diptirani Mishra
Subject-Structural Mechanics <i>Railway &amp; Bridge</i>	No. of Days/per week class allotted 4	Semestar From Date : 1/10/2021 To Date:8/1/2022
Week	Class Day	Theory/Practical Topics
1st	1st	Railway terminology, Advantages of railways
	2nd	Classification of Indian Railways
	3rd	Definition and components of a permanent way
	4th	Concept of gauge
2nd	1st	Different gauges prevalent in India
	2nd	Different gauges prevalent in India, suitability of these gauges
	3rd	Different gauges prevalent in India, suitability of these gauges
	4th	Rails, Functions and requirement of rails
3rd	1st	Types of rail sections, length of rails
	2nd	Rail joints – types, requirement of an ideal joint
	3rd	Purpose of welding of rails & its advantages
	4th	Creep- definition, cause & prevention, Theories of Creep
4th	1st	Sleepers, Definition, function & requirements of sleepers, Classification of sleepers
	2nd	Advantages & disadvantages of different types of sleepers
	3rd	Ballast, Functions & requirements of ballast, Materials for ballast
	4th	Fixtures for Broad gauge, Connection of rails to fishplate
5th	1st	Fish bolts, Connection of rails to sleepers
	2nd	Typical cross – sections of single & double broad gauge railway track in cutting and embankment
	3rd	Typical cross – sections of single & double broad gauge railway track in cutting and embankment
	4th	Permanent & temporary land width
6th	1st	Gradients for drainage
	2nd	Gradients for drainage
	3rd	Super elevation – necessity & limiting values
	4th	Super elevation – necessity & limiting values
7th	1st	Problems on super elevation
	2nd	Problems on super elevation
	3rd	Definition, necessity of Points and crossings
	4th	Definition, necessity of Points and crossings
8th	1st	Types of Points
	2nd	Types of Points
	3rd	Types of Crossings
	4th	Methods of Laying & maintenance of track
	1st	Methods of Laying & maintenance of track

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9th	2nd	Duties of a permanent way inspector
	3rd	Duties of a permanent way inspector
	4th	Definition & Components of Bridge, Classification of bridges
10th	1st	Classification of bridges, Requirements of an ideal bridge
	2nd	Selection of bridge site, Alignment
	3rd	Determination of Flood Discharge
	4th	Waterway & economic span
11th	1st	Afflux, clearance & free board
	2nd	Scour depth minimum depth of foundation
	3rd	Types of Bridge Foundation
	4th	Types of Open Foundation
12th	1st	Types of Pile Foundation
	2nd	Types of Pile Foundation
	3rd	Types of Pile Foundation
	4th	Well Foundation & it's components
13th	1st	Sinking of wells
	2nd	Caission Foundation
	3rd	Types of piers
	4th	Types of piers
14th	1st	Types of abutments
	2nd	Types of wing walls
	3rd	Approaches
	4th	Types of culvers
15th	1st	Types of culvers
	2nd	Types of culvers
	3rd	Types of causeways
	4th	Types of causeways

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Discipline-Civil Engineering	Semestar- 5th	Name Of the teaching Faculty: Er. Jagannath Das
Subject-Water Supply & Sanitary Engineering	No. of Days/per week class allotted:4	Semestar From Date : 1/10/2021 To Date: 8/01/2022 No. Of Weeks: 13
Week	Class Day	Theory/Practical Topics
1st	1st	Necessity of treated water supply , Per capita demand, variation in demand and factors affecting demand
	2nd	Methods of forecasting population, Numerical problems using different methods
	3rd	Impurities in water – organic and inorganic, Harmful effects of impurities 1.5 Analysis of water –physical, chemical and bacteriological
	4th	Water quality standards for different uses
2nd	1st	Surface sources – Lake, stream, river and impounded reservoir
	2nd	Underground sources – aquifer type & occurrence – Infiltration gallery, infiltration well, springs, well
	3rd	Yield from well- method s of determination, Numerical problems using yield formulae
	4th	Intakes – types, description of river intake, reservoir intake, canal intake
3rd	1st	Pumps for conveyance & distribution – types, selection, installation
	2nd	Pipe materials – necessity, suitability, merits & demerits of each type
	3rd	Pipe joints – necessity, types of joints, suitability, methods of jointing Laying of pipes – method
	4th	Flow diagram of conventional water treatment system
4th	1st	Aeration ; Necessity
	2nd	Plain Sedimentation : Necessity, working principles,
	3rd	Sedimentation tanks – types, essential features, operation & maintenance
	4th	Sedimentation with coagulation: Necessity, principles of coagulation,
5th	1st	ypes of coagulants, Flash Mixer, Flocculator, Clarifier
	2nd	Filtration : Necessity, principles, types of filters
	3rd	Slow Sand Filter, Rapld Sand Filter and Pressure Filter
	4th	Disinfection : Necessity, methods of disinfection
		Chlorination – free and combined chlorine demand, available chlorine, residual chlorine, pre-chlorination, break point chlorination, super chlorination



6th	1st	Softening of water – Necessity, Methods of softening
	2nd	Lime soda process and Ion exchange method
	3rd	General requirements, types of distribution system-gravity, direct and combined
	4th	Methods of supply – intermittent and continuous
7th	1st	Distribution system layout – types, comparison, suitability
	2nd	Valves-types, features, uses, purpose-slucce valves, check valves, air valves, scour valves, Fire hydrants, Water meters
	3rd	Method of connection from water mains to building supply
	4th	General layout of plumbing arrangement for water supply in single storied and multi-storied building as per I.S. code
8th	1st	Aims and objectives of sanitary engineering
	2nd	Definition of terms related to sanitary engineering
	3rd	Systems of collection of wastes– Conservancy and Water Carriage System – features, comparison, suitability
	4th	Quantity of sanitary sewage – domestic & industrial sewage, variation in sewage flow, numerical problem on computation quantity of sanitary sewage.
9th	1st	Computation of size of sewer, application of Chazy's formula, Limiting velocities of flow : self-cleaning and scouring
	2nd	General importance, strength of sewage, Characteristics of sewage-physical, chemical & biological
	3rd	Concept of sewage-sampling, tests for – solids, pH, dissolved oxygen, BOD, COD
	4th	Types of system-separate, combined, partially separate , features, comparison between the types, suitability
10th	1st	Shapes of sewer – rectangular, circular, avoid-features, suitability
	2nd	Laying of sewer-setting out sewer alignment
	3rd	Manholes and Lamp holes – types, features, location, function
	4th	Storm regulator, inverted siphon – features, location, function
11th	1st	Disposal by dilution – standards for disposal in different types of water bodies, self purification of stream
	2nd	Principles of treatment, flow diagram of conventional treatment
	3rd	Primary treatment – necessity, principles, essential features, functions

	4th	Secondary treatment – necessity, principles, essential features, function
12th	1st	Requirements of building drainage, layout of lavatory blocks in residential buildings, layout of building drainage
	2nd	Plumbing arrangement of single storied & multi storied building as per I.S. code practice
	3rd	Sanitary fixtures – features, function, and maintenance and fixing of the fixtures
	4th	Water closets, flushing cisterns, urinals,
13th	1st	Inspection chambers, traps, anti syphonage pie

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Discipline-Civil	Semestar- 5th	Name Of the teaching Faculty: Er.Narasingh Mohanty
Subject- Estimation and Cost Evaluation-II	No. of Days/per week class	Semestar From Date : 1/10/2021 To Date: 8/1/2022 No. Of Weeks: 15
Week	Class Day	Theory/Practical Topics
1st	1st	Detailed estimate of a RCC slab culvert with right angled wing walls with bar bending schedule
	2nd	Detailed estimate of a RCC slab culvert with right angled wing walls with bar bending schedule
	3rd	Detailed estimate of a RCC slab culvert with right angled wing walls with bar bending schedule
	4th	Detailed estimate of a RCC slab culvert with right angled wing walls with bar bending schedule
2nd	1st	RCC Hume pipe culvert with splayed angled wing wall
	2nd	RCC Hume pipe culvert with splayed angled wing wall
	3rd	RCC Hume pipe culvert with splayed angled wing wall
	4th	RCC Hume pipe culvert with splayed angled wing wall
3rd	1st	Detailed estimate of simple type of vertical fall to given specification
	2nd	Detailed estimate of simple type of vertical fall to given specification
	3rd	Detailed estimate of simple type of vertical fall to given specification
	4th	Detailed estimate of simple type of vertical fall to given specification
4th	1st	Detailed estimate of drainage siphon to given specification.
	2nd	Detailed estimate of drainage siphon to given specification.
	3rd	Detailed estimate of drainage siphon to given specification.
	4th	Detailed estimate of drainage siphon to given specification.
5th	1st	Detail estimate of a water bound macadam road
	2nd	Detail estimate of a water bound macadam road
	3rd	Detailed estimate of a flexible pavement in cutting / filling
	4th	Detailed estimate of a flexible pavement in cutting / filling
6th	1st	Detailed estimate of a flexible pavement in cutting / filling
	2nd	Detailed estimate of septic tank and soak pit for 50 users
	3rd	Detailed estimate of septic tank and soak pit for 50 users
	4th	Detailed estimate of septic tank and soak pit for 50 users
7th	1st	Detailed estimate of septic tank and soak pit for 50 users
	2nd	Detailed estimate of Tube well Detailed Estimate of Piles and Pile cap

	3rd	Detailed Estimate of Isolated and combined footings.
	4th	Detailed Estimate of Isolated and combined footings.
8th	1st	Works
	2nd	Classification of work-original, major, petty, repair work, annual repair, special repair, quadrantal repair.
	3rd	Concept of Method of execution of works through the contractors and department,
	4th	contract and agreement, work order, types of contract, piece work agreement
9th	1st	Explanation of various terms Administrative approval, technical sanction, tender,
	2nd	preparation of notice inviting tender, quotations, earnest money, E-tendering, security deposit,
	3rd	advance payment, intermediate payment, final payment, running bill, final bill
	4th	regular and temporary establishment, cash, major & subhead of account,
10th	1st	temporary advance (imprest money), supervision charges suspense account, debit, credit, book transfer, voucher and related accounts
	2nd	Measurement book use & maintenance, procedure of marking entries of measurement of work and supply of materials
	3rd	, labour employed, standard measurement books and common irregularity
	4th	Muster roll : Its preparation & use for making payment c pay & wages
11th	1st	Acquittance Roll : Its preparation & use for making payment of pay & wages
	2nd	Labour & labour report, method of labour payment, use forms and necessity of Submission
	3rd	Classification of stores, receipt / issue statement on standard form
	4th	, method of preparation of stock account,
12th	1st	preparation and submission of returns, verification of stocks, shortage and excess
	2nd	Building BYLAWS and REGULATORY
	3rd	Building BYLAWS and REGULATORY
	4th	Bodies, Development authorities, types and their levels, RERA etc
13th	1st	Bodies, Development authorities, types and their levels, RERA etc

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