

Discipline- <b>Civil Engineering</b>	Semester- <b>5TH</b>	Name Of the teaching Faculty: <b>SANKET PRAHARAJ</b>
Subject- <b>Entrepreneurship Smart TECHNOLOGY</b>	No. of Days/per week class allotted:4	Semester From Date : <b>15/09/2022 To Date:22/12/2022</b>
		No. Of Weeks:
<b>Week</b>	<b>Expected Date</b>	<b>Theory Details to be covered:-</b>
1st		<b>Entrepreneurship:</b> Concept/Meaning of Entrepreneurship
	2 <sup>nd</sup>	Need of Entrepreneurship,Characteristics,Qualities
	3 <sup>rd</sup>	Types of Entrepreneur and its Functions
	4 <sup>th</sup>	Barriers in Entrepreneurship
2nd	1st	Entrepreneurs vs. Manager
	2 <sup>nd</sup>	Forms Of Business Ownership: Sole Proprietorship, Partnership firms and others
	3 <sup>rd</sup>	Entrepreneurial support agencies at National,State,District Level:DIC,NSIC,OSIC,SIDBI,NABARD,Commercial Banks, KVIC
	4 <sup>th</sup>	Technology Business Incubators(TBI) and Science and Technology Entrepreneur Parks
3rd	1 <sup>st</sup>	<b>Market Survey and Opportunity Identification</b> :Business Planning
	2 <sup>nd</sup>	Business Planning
	3 <sup>rd</sup>	SSI,Ancillary Units, Tiny Units and Service Sector Units
	4 <sup>th</sup>	Time Schedule Plan, Agencies to be Contacted for Project Implementation
4th	1 <sup>st</sup>	Assessment of Demand and Supply with Potential Areas of Growth
	2 <sup>nd</sup>	Identifying Business Opportunity
	3 <sup>rd</sup>	Final Product Selection
	4 <sup>th</sup>	<b>Project Report Preparation:</b> Preliminary Project Report
5th	1 <sup>st</sup>	Detailed Project Report, Techno Economic Feasibility
	2 <sup>nd</sup>	Project Viability
	3 <sup>rd</sup>	<b>Management Principles:</b> Definition Of Management
	4 <sup>th</sup>	Principles Of Management
6th	1 <sup>st</sup>	Functions Of Management(Planning,Organising,Staffing,Directing,Controlling)
	2 <sup>nd</sup>	Level Of Management in an Organization
	3 <sup>rd</sup>	<b>Functional Areas of Management:</b> Production Management-Functions and Activities
	4 <sup>th</sup>	Productivity, Quality Control, Product Planning and Control
7th	1 <sup>st</sup>	<b>Inventory Management:</b> Need for Inventory Management, Models /Techniques of Inventory Management
	2 <sup>nd</sup>	<b>Financial Management:</b> Functions of Financial Management ,Management of Working Capital
	2 <sup>nd</sup>	Costing(only concept),Break Even Analysis
	3 <sup>rd</sup>	Brief Idea about Accounting Terminologies
	4 <sup>th</sup>	<b>Marketing Management:</b> Concept of Marketing and Marketing Management, Marketing Concepts

8 <sup>th</sup>	1 <sup>st</sup>	Concept of 4PS, Human Resource Management
	2 <sup>nd</sup>	Function of Personnel Management, Man Power Planning, Recruitment, Sources of Manpower, Selection Process
	3 <sup>rd</sup>	Methods Of Training and Development, Payment of Wages
	4 <sup>th</sup>	<b>Leadership and Motivation:</b> Definition and Qualities and Need/Importance
9 <sup>th</sup>	1 <sup>st</sup>	Qualities and Functions of a Leader, Manager vs. Leader
	2 <sup>nd</sup>	Style of Leadership(Autocratic, Democratic, Participative,)
	3 <sup>rd</sup>	<b>Motivation:</b> Definition and Characteristics, Importance of Motivation
	4 <sup>th</sup>	Factors affecting Motivation, Theories Of Motivation
10 <sup>th</sup>	1 <sup>st</sup>	Methods of Improving Motivation, Importance of Communication in Business, Types and Barriers of Communication
	2 <sup>nd</sup>	<b>Work Culture, TQM &amp; Safety:</b> Human Relationship and Performance in Organization
	3 <sup>rd</sup>	Relation with Peers, Superiors and Subordinates
	4 <sup>th</sup>	TQM Concepts: Quality Policy, Quality Management, Quality System
11 <sup>th</sup>	1 <sup>st</sup>	Accidents and Safety, Cause, Preventive Measures, General Safety Rules, Personal Protection Equipment(PPE)
	2 <sup>nd</sup>	<b>Legislation:</b> Intellectual Property Rights, Patents
	3 <sup>rd</sup>	Trademarks, Copyrights
	4 <sup>th</sup>	Features of Factories Act 1948 with Amendment (only Salient Points)
12 <sup>th</sup>	1 <sup>st</sup>	Features of Payment of Wages Act 1936 (only Salient Points)
	2 <sup>nd</sup>	<b>Smart Technology:</b> Concept of IOT, Working of IOT
	3 <sup>rd</sup>	Components of IOT, Characteristics of IOT
	4 <sup>th</sup>	Categories of IOT
13 <sup>th</sup>	1 <sup>st</sup>	Applications of IOT: - Smart Cities, Smart Transportation, Smart Home, Smart Health Care,
	2 <sup>nd</sup>	Smart Industry, Smart Agriculture, Smart Energy Management System

Name of the Faculty:

Sanket Praharaj

<b>Discipline: Civil Engineering</b>	<b>Semestar-5th</b>	<b>Name Of the teaching Faculty: Smt.Pramila Kumari Gouda</b>
<b>Subject: STRUCTURAL DESIGN– II Th2.</b>	<b>No. of Days/per week class allotted:4</b>	<b>Semestar From Date : 15/09/2022 To Date: 22/12/2022</b>
		<b>No. Of Weeks: 14</b>
<b>Week</b>	<b>Day</b>	<b>Theory Topics to be covered</b>
1ST	1ST	<b>CHAPTER -1</b> Introduction:1.1 Common steel structures, Advantages & disadvantages of steel structures.
	2nd	1.2 Types of steel, properties of structural steel. 1.3 Rolled steel sections, special considerations in steel design.
2ND	1ST	1.4 Loads and load combinations. 1.5 Structural analysis and design philosophy.
	2nd	1.6 Brief review of Principles of Limit State design.
	3rd	<b>CHAPTER-2</b> Structural Steel Fasteners and Connections. 2.1 Bolted Connections 2.1.1 Classification of bolts, advantages and disadvantages of bolted connections.
	4th	2.1.2 Different terminology, spacing and edge distance of bolt holes
3RD	1ST	3 Types of bolted connections. 2.1.4 Types of action of fasteners, assumptions and principles of design.
	2nd	2.1.5 Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity), reduction factors, and shear capacity of HSFG bolts
	3rd	2.1.5 Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity), reduction factors, and shear capacity of HSFG bolts
	4th	2.1.6 Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces) 2.1.7 Efficiency of a joint.
4TH	1ST	Welded Connections: 2.2.1 Advantages and Disadvantages of welded connection
	2nd	Types of welded joints and specifications for welding 2.2.3 Design stresses in welds.
	3rd	Strength of welded joints.
	4th	Numerical solving
5TH	1ST	Numerical solving
	2nd	Numerical solving

	3rd	<b>CHAPTER -3</b> Design of Steel tension Members 3.1 Common shapes of tension members
	4th	3.2 Maximum values of effective slenderness ratio.
6TH	1ST	3.4 Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	2nd	3.4 Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	3rd	3.4 Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	4th	3.4 Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
7TH	1ST	3.4 Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	2nd	Numerical solving
	3rd	Numerical solving
	4th	<b>CHAPTER -4</b> Design of Steel Compression members. 4.1 Common shapes of compression members.
8TH	1ST	4.2 Buckling class of cross sections, slenderness ratio
	2nd	4.3 Design compressive stress and strength of compression members.
	3rd	4.3 Design compressive stress and strength of compression members.
	4th	4.4 Analysis and Design of compression members (axial load only).
9TH	1ST	4.4 Analysis and Design of compression members (axial load only).
	2nd	4.4 Analysis and Design of compression members (axial load only).
	3rd	4.4 Analysis and Design of compression members (axial load only).
	4th	<b>CHAPTER-5</b> Design of Steel beams: 5.1 Common cross sections and their classification.
10TH	1ST	5.2 Deflection limits, web buckling and web crippling.
	2nd	5.2 Deflection limits, web buckling and web crippling.
	3rd	5.2 Deflection limits, web buckling and web crippling.
	4th	5.3 Design of laterally supported beams against bending and shear.
11TH	1ST	5.3 Design of laterally supported beams against bending and shear.
	2nd	5.3 Design of laterally supported beams against bending and shear.
	3rd	5.3 Design of laterally supported beams against bending and shear.

	4th	<b>CHAPTER-6</b> Design of Tubular Steel Structures: 6.1 Round Tubular Sections, Permissible Stresses
12TH	1ST	6.3 Joints in Tubular trusses
	2nd	Numerical solved
	3rd	Numerical solved
	4th	Numerical solved
13TH	1ST	<b>CHAPTER-7</b> Design of Masonry Structures: Design considerations for Masonry walls & Columns,
	2nd	
	3rd	Load Bearing & Non-Load Bearing walls,
	4th	Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
14TH	1ST	Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
	2nd	Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
	3rd	Numerical solving
	4th	Numerical solving



SIGNATURE OF FACULTY

Discipline : <b>Civil Engineering</b>	Semester : <b>5<sup>TH</sup></b>	Name of the Teaching Faculty: <b>R. K. Panda</b>
Subject: - <b>Railway &amp; Bridge Engineering</b>	No. of Days/ per week class allotted: <b>4</b>	Semester From Date: <b>15/09/2022 To Date 22/12/2022</b>
		No. of Weeks: <b>14</b>
<b>Week</b>	<b>Day</b>	<b>Theory Topics</b>
<b>SECTION A: RAILWAYS</b>		
1 <sup>st</sup>	1 <sup>st</sup>	<b>CHAPTER 1</b> 1.1. Railway terminology 1.2. Advantages of railways
	2 <sup>nd</sup>	1.3. Classification of Indian Railways
	3 <sup>rd</sup>	<b>CHAPTER 2</b> 2.1. Definition and components of a permanent way
	4 <sup>th</sup>	2.2. Concept of gauge, different gauges prevalent in India, suitability of these gauges under different conditions
1 <sup>st</sup>		
2 <sup>nd</sup>	2 <sup>nd</sup>	<b>CHAPTER 3</b> 3.1 Rails 3.1.1 Functions and requirement of rails
	3 <sup>rd</sup>	
	4 <sup>th</sup>	3.1.2 Types of rail sections, length of rails 3.1.3 Rail joints – types, requirement of an ideal joint
3 <sup>rd</sup>	1 <sup>st</sup>	3.1.4 Purpose of welding of rails & its advantages 3.1.5 Creep- definition, cause & prevention
	2 <sup>nd</sup>	3.2 Sleepers 3.2.1 Definition, function & requirements of sleepers
	3 <sup>rd</sup>	3.2.2 Classification of sleepers
	4 <sup>th</sup>	3.2.3 Advantages & disadvantages of different types of sleepers
4 <sup>th</sup>	1 <sup>st</sup>	3.3 Ballast 3.3.1 Functions & requirements of ballast
	2 <sup>nd</sup>	3.3.2 Materials for ballast 3.4 Fixtures for Broad gauge
	3 <sup>rd</sup>	3.4.1 Connection of rails to rail-fishplate, fish bolts 3.4.2 Connection of rails to sleepers
	4 <sup>th</sup>	<b>CHAPTER 4</b> 4.1. Typical cross – sections of single & double broad gauge railway track in cutting and embankment
5 <sup>th</sup>	1 <sup>st</sup>	4.2 Permanent & temporary land width
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	4.3 Gradients for drainage
4 <sup>th</sup>		
6 <sup>th</sup>	1 <sup>st</sup>	4.4 Super elevation – necessity & limiting valued
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
	4 <sup>th</sup>	

7 <sup>th</sup>	1 <sup>st</sup>	<b>CHAPTER 5</b> 5.1 Definition, necessity of Points and crossings
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	5.2 Types of points & crossings with tie diagram
	4 <sup>th</sup>	
8 <sup>th</sup>	1 <sup>st</sup>	<b>CHAPTER 6</b> 6.1 Methods of Laying & maintenance of track
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	6.2 Duties of a permanent way inspector
	4 <sup>th</sup>	
<b>SECTION B: BRIDGES</b>		
9 <sup>th</sup>	1 <sup>st</sup>	<b>CHAPTER 1</b> 1.1 Definitions 1.2 Components of a bridge
	2 <sup>nd</sup>	1.3 Classification of bridges 1.4 Requirements of an ideal bridge
	3 <sup>rd</sup>	<b>CHAPTER 2</b> 2.1 Selection of bridge site, Alignment,
	4 <sup>th</sup>	2.2 Determination of Flood Discharge
10 <sup>th</sup>	1 <sup>st</sup>	2.3 Waterway & economic span
	2 <sup>nd</sup>	2.4 Afflux, clearance & free board
	3 <sup>rd</sup>	
	4 <sup>th</sup>	<b>CHAPTER 3</b>
11 <sup>th</sup>	1 <sup>st</sup>	3.1 Scour depth minimum depth of foundation
	2 <sup>nd</sup>	3.2 Types of bridge foundations – spread foundation, pile foundation- well foundation – sinking of wells, caission foundation
	3 <sup>rd</sup>	
	4 <sup>th</sup>	
12 <sup>th</sup>	1 <sup>st</sup>	3.3 Cofferdams
	2 <sup>nd</sup>	
	3 <sup>rd</sup>	
	4 <sup>th</sup>	<b>CHAPTER 4</b> Bridge substructure and approaches 4.1 Types of piers
13 <sup>th</sup>	1 <sup>st</sup>	4.2 Types of abutments
	2 <sup>nd</sup>	4.3 Types of wing walls
	3 <sup>rd</sup>	4.4 Approaches
	4 <sup>th</sup>	
14 <sup>th</sup>	1 <sup>st</sup>	<b>CHAPTER 5</b>
	2 <sup>nd</sup>	Culvert & Cause ways 5.1 Types of culvers – brief description
	3 <sup>rd</sup>	5.2 Types of causeways – brief description
	4 <sup>th</sup>	

SIGNATURE OF FACULTY

<b>Discipline: Civil Engineering</b>	<b>Semestar- 5th</b>	<b>Name Of the teaching Faculty:</b> <b>Smt. Laxmipriya Mohapatra</b>
<b>Subject:</b> <b>Water Supply &amp; Waste Water Engineering (Th.4)</b>	<b>No. of Days/per week class allotted:5</b>	<b>Semestar From Date : 15/09/2022 To Date: 22/12/2022</b>
		<b>No. Of Weeks: 14</b>
<b>Week</b>	<b>Day</b>	<b>Theory Topics to be covered</b>
1st	1st	<b>1.Introduction to Water Supply, Quantity and Quality of water:</b> 1.1 Necessity of treated water supply.
	2nd	1.2 Per capita demand, variation in demand and factors affecting demand.
2nd	1st	1.3 Methods of forecasting population
	2nd	Numerical problems using different methods.
	3rd	1.4 Impurities in water – organic and inorganic, Harmful effects of impurities
	4th	1.5 Analysis of water –physical, chemical and bacteriological
	5th	1.6 Water quality standards for different uses
3rd	1st	<b>2.Sources and Conveyance of water:</b> 2.1 Surface sources – Lake, stream, river and impounded reservoir
	2nd	2.2 Underground sources – aquifer type & occurrence – Infiltration gallery, infiltration well, springs, well
	3rd	2.3 Yield from well- method s of determination, Numerical problems using yield formulae
	4th	2.4 Intakes – types, description of river intake, reservoir intake, canal intake
	5th	2.5 Pumps for conveyance & distribution – types, selection, installation
4th	1st	2.6 Pipe materials – necessity, suitability, merits & demerits of each type
	2nd	2.7 Pipe joints – necessity, types of joints, suitability, methods of jointing Laying of pipes – method
5th	3rd	<b>3.Treatment of water:</b> 3.1 Flow diagram of conventional water treatment system
	4th	3.2 Treatment process / units : 3.2.1 Aeration ; Necessity
	5th	3.2.2 Plain Sedimentation : Necessity, working principles, Sedimentation tanks – types, essential features, operation & maintenance
	2nd	3.2.3 Sedimentation with coagulation: Necessity, principles of coagulation, types of coagulants, Flash Mixer, Flocculator, Clarifier
	3rd	3.2.4 Filtration : Necessity, principles, types of filters- Slow Sand Filter
	4th	Rapid Sand Filter and Pressure Filter
	5th	3.2.5 Disinfection : Necessity, methods of disinfection

6th	1st	Chlorination – free and combined chlorine demand, available chlorine, residual chlorine, pre-chlorination, break point chlorination, super chlorination
	2nd	3.2.6 Softening of water – Necessity, Methods of softening
	3rd	Lime soda process and Ion exchange method
	4th	<b>4. Distribution system And Appurtenance in distribution system:</b> 4.1 General requirements, types of distribution system-gravity system
7th	1st	Direct and combined distribution system
	2nd	4.2 Methods of supply – intermittent and continuous
	3rd	4.3 Distribution system layout – types, comparison, suitability
	4th	4.4 Valves-types, features, uses, purpose
	5th	sluice valves, check valves, air valves, scour valves, Fire hydrants, Water meters
8th	1st	<b>5.W/s plumbing in building :</b> 5.1 Method of connection from water mains to building supply
	2nd	General layout of plumbing arrangement for water supply in single storied and multi-storied building as per I.S. code
	3rd	<b>6.Introduction to waste water engineering:</b> 6.1 Aims and objectives of sanitary engineering
	4th	6.2 Definition of terms related to sanitary engineering
9th	1st	6.3 Systems of collection of wastes– Conservancy and Water Carriage System
	2nd	Features, comparison, suitability of conservancy and water carriage system.
	3rd	<b>7.Quantity and Quality of sewage:</b> 7.1 Quantity of sanitary sewage – domestic & industrial sewage, variation in sewage flow
	4th	Numerical problem on computation quantity of sanitary sewage.
	5th	7.2 Computation of size of sewer, application of Chazy's formula
10th	1st	Limiting velocities of flow : self-cleaning and scouring
	2nd	7.3 General importance, strength of sewage, Characteristics of sewage-physical, chemical & biological
	3rd	7.4 Concept of sewage-sampling, tests for – solids, pH, dissolved oxygen, BOD, COD
	4th	<b>8.Sewerage system:</b> 8.1 Types of system-separate, combined, partially separate , features,
	5th	comparison between the types, suitability
11th	1st	8.2 Shapes of sewer – rectangular, circular, avoid-features, suitability

	2nd	8.3 Laying of sewer-setting out sewer alignment
	3rd	<b>9.Sewer appurtenances and Sewage Disposal:</b> 9.1 Manholes and Lamp holes – types, features, location, function
	4th	9.2 Inlets, Grease & oil trap – features, location, function
	5th	9.3 Storm regulator, inverted siphon – features, location, function
12th	1st	9.4 Disposal on land – sewage farming, sewage application and dosing,
	2nd	sewage sickness-causes and remedies
	3rd	9.5 Disposal by dilution – standards for disposal in different types of water bodies, self purification of stream
	4th	<b>10.Sewage treatment :</b> 10.1 Principles of treatment, flow diagram of conventional treatment
	5th	10.2 Primary treatment – necessity, principles,
13th	1st	Essential features, functions of primary treatment
	2nd	10.3 Secondary treatment – necessity, principles,
	3rd	Essential features, function of secondary treatment
	4th	<b>11.Sanitary plumbing for building :</b> 11.1 Requirements of building drainage, layout of lavatory blocks in residential buildings,
	5th	Layout of building drainage
14th	1st	11.2 Plumbing arrangement of single storied & multi storied building as per I.S. code practice
	2nd	11.3 Sanitary fixtures – features, function, and maintenance and fixing of the fixtures
	3rd	Water closets, flushing cisterns, urinals,
	4th	Inspection chambers, traps, anti syphonage pie

*Laxmipriya Mohapatra*

**Signature of Faculty**

Discipline- Civil engineering	Semester- 5th	Name Of the teaching Faculty: Er.Diptirani Mishra
Subject- Estimation and Cost Evaluation-II	No. of Days/per week class alloted per week-4	Semestar From Date : 15/9/22 To Date:22/12/22 No. Of Weeks: 15
Week	Class Day	Topics to be covered
1st	1st	<b>CHAPTER-1(Detailed Estimate of culverts and bridges)</b> 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	Detailed estimate of a RCC slab Culvert with right angled wing walls with bar bending schedule
	2nd	Detailed estimate of a RCC Hume pipe culvert with splayed wing wall
	3rd	Detailed estimate of a RCC Hume pipe culvert with splayed wing wall
	4th	Detailed estimate of a RCC Hume pipe culvert with splayed wing wall
3rd	1st	Detailed estimate of a RCC Hume pipe culvert with splayed wing wall
	2nd	Detailed estimate of a RCC Hume pipe culvert with splayed wing wall
	3rd	<b>CHAPTER-2(Estimation of Irrigation structures)</b> 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 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
5th	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
6th	1st	Detailed estimate of drainage siphon to given specification
	2nd	Detailed estimate of drainage siphon to given specification
	3rd	<b>CHAPTER-3(Detailed estimate of roads)</b> Detail estimate of a water bound macadam road
	4th	Detail estimate of a water bound macadam road
7th	1st	Detail estimate of a water bound macadam road
	2nd	Detailed estimate of a flexible pavement in cutting / filling
	3rd	Detailed estimate of a flexible pavement in cutting / filling
	4th	Detailed estimate of a flexible pavement in cutting / filling
8th	1st	Detailed estimate of septic tank and soak pit for 50 users
	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	<b>CHAPTER-4(Miscellaneous estimates)</b> Detailed estimate of Tube well
9th	1st	Detailed estimate of Tube well
	2nd	Detailed Estimate of Piles and Pile cap
	3rd	Detailed Estimate of Piles and Pile cap
	4th	Detailed Estimate of Isolated and combined footings
10th	1st	Detailed Estimate of Isolated and combined footings
	2nd	<b>CHAPTER-5(PWD Accounts works)</b> 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
11th	1st	Administrative approval, technical sanction, tender, preparation of notice inviting tender, quotations, earnest money,,

	2nd	E-tendering, security deposit, advance payment, intermediate payment, final payment, running bill, final bill, regular and temporary establishment, cash
	3rd	Major & subhead of account, temporary advance (imprest money), supervision charges, suspense account, debit, credit, book transfer, voucher and related accounts
	4th	E-tendering, security deposit, advance payment, intermediate payment, final payment, running bill, final bill, regular and temporary establishment, cash
12th	1st	Major & subhead of account, 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 of pay & wages
13th	1st	Acquittance Roll : Its preparation & use for making payment of pay & wages
	2nd	Labour & labour report, method of labour payment, use of forms and necessity of Submission
	3rd	Classification of stores, receipt / issue statement on standard form, method of preparation of stock account,
	4th	Preparation and submission of returns, verification of stocks, shortage and excess
14th	1st	Building BYLAWS and REGULATORY Bodies
	2nd	Building BYLAWS and REGULATORY Bodies
	3rd	Development authorities, types and their levels, RERA etc
	4th	Development authorities, types and their levels, RERA etc

*Dw*  
14/9/22

Signature of the teaching Faculty

Discipline: <b>Civil Engineering</b>	Semester : <b>5<sup>TH</sup></b>	Name of the Teaching Faculty: <b>Smt. Pramila Kumari Gouda</b>
Subject :- <b>Civil Engineering Laboratory-II</b>	No. of Days/ per week class allotted: <b>6</b>	Semester From Date: <b>15/09/A2022 To Date</b>
		No. of Weeks: <b>14</b>
<b>Week</b>	<b>Day(3 periods per day)</b>	<b>Practical Topics</b>
1 <sup>st</sup>	1 <sup>st</sup>	<b>TESTS ON SOIL</b> 1.1. Determination of Specific gravity of Soil by Pycnometer/Density bottle.
	2 <sup>nd</sup>	1.2. Determination of Field Density of Soil by Core Cutter Method.
2 <sup>nd</sup>	1 <sup>st</sup>	1.3. Determination of Particle Size gradation of sand/Gravel by sieve analysis.
	2 <sup>nd</sup>	1.4. Wet mechanical analysis using pipette method for clay and silt.
3 <sup>rd</sup>	1 <sup>st</sup>	1.5. (a)Determination of Liquid Limit by soil by Casagrande's apparatus.
	2 <sup>nd</sup>	(b)Determination of Plastic limit of soil.
4 <sup>th</sup>	1 <sup>st</sup>	1.6. Determination of Shrinkage limit of soil.
	2 <sup>nd</sup>	1.7. Determination of MDD & OMC of soil by using modified Proctor Test.
5 <sup>th</sup>	1 <sup>st</sup>	1.8. Determination of CBR value using Laboratory CBR Testing device.
	2 <sup>nd</sup>	1.9. Determination of c and $\phi$ of soil by triaxial testing device.
	1 <sup>st</sup>	1.10 Determination of coefficient of permeability of

6 <sup>th</sup>		soil by constant head method.
	2 <sup>nd</sup>	<b>HYRAULICS LABORATORY</b> 2.1 Verification of Bernoulli's Theorem
7 <sup>th</sup>	1 <sup>st</sup>	2.3 Determination of coefficient of Discharge of a rectangular notch fitted in open Channel.
	2 <sup>nd</sup>	2.3 Determination of coefficient of Discharge of a Venturimeter, Orificemeter fitted in a pipe
8 <sup>th</sup>	1 <sup>st</sup>	2.4. Determination of head Loss due to friction and coefficient of friction for flow through pipe.
	2 <sup>nd</sup>	<b>TRANSPORTATION LABORATORY</b> 3.1. Penetration Test of Bitumen.
9 <sup>th</sup>	1 <sup>st</sup>	3.2. Ductility Test of Bitumen.
	2 <sup>nd</sup>	3.3. Viscosity Test of Bitumen.
10 <sup>th</sup>	1 <sup>st</sup>	3.4 Bitumen content by centrifuge extractor.
	2 <sup>nd</sup>	<b>PUBLIC HEALTH ENGINEERING LABORATORY</b> 4.1. Determination of Turbidity of water Sample using
11 <sup>th</sup>	1 <sup>st</sup>	4.1. Determination of Turbidity of water Sample using Nephelometer.
	2 <sup>nd</sup>	4.1. Determination of Turbidity of water Sample using Jackson's Candle Turbidimeter.
12 <sup>th</sup>	1 <sup>st</sup>	4.2. Determination of pH of Water sample using (a) pH – meter.
	2 <sup>nd</sup>	4.2. Determination of pH of Water sample using (b) colour Comparator.

13 <sup>th</sup>	1 <sup>st</sup>	4.3. Determination of Chloride content of a Water sample using method of titration.
	2 <sup>nd</sup>	4.4. Determination of Coagulant (Alum) dose requirement for a turbid water sample by Jar Test.
14 <sup>th</sup>	1 <sup>st</sup>	4.5. Determination of dissolved oxygen in a water sample.
	2 <sup>nd</sup>	4.6. Determination of bacteriological quality of water sample by Coliform test.

Discipline-Civil Engineering	Semester- 5th	Name Of the teaching Faculty: Er.Diptirani Mishra
Subject-Estimating Practice-2	No. of Days/per week class allotted:3	Semestar From Date : 15/9/2022 To Date:22/12/2022
		No. Of Weeks:14
Week	Class Day(3 period day)	Theory/Practical Topics
1st	1st	Detailed estimate of a RCC slab culvert with right angled wing walls with bar bending schedule using MS Excel
2nd	2nd	Detailed estimate of a RCC slab culvert with right angled wing walls with bar bending schedule using MS Excel
3rd	3rd	Detailed Estimate of RCC Hume pipe culvert with splayed angled wing wall using MS Excel
4th	4th	Detailed Estimate of RCC Hume pipe culvert with splayed angled wing wall using MS Excel
5th	5th	Detailed estimate of simple type of vertical fall to given specification using MS Excel
6th	6th	Detailed estimate of simple type of vertical fall to given specification using MS Excel
7th	7th	Detailed estimate of drainage siphon to given specification using MS Excel
8th	8th	Detailed estimate of drainage siphon to given specification using MS Excel
9th	9th	Detail estimate of a water bound macadam road using Excel
10th	10th	Detailed estimate of a flexible pavement in cutting / filling using MS Excel
11th	11th	Detailed estimate of septic tank and soak pit for 50 users using MS Excel
12th	12th	Detailed estimation on tube well using MS Excel
13th	13th	Detailed estimate on piles and pile cap using Ms Excel
14th	14th	Estimation on founation using MS Excel

*Dw*  
15/9/22

Signature of the teaching Faculty