

WEEK NO.	DATE	TOPIC	PERIODS ASSIGNED PER TOPIC	PERIODS AVAILABLE PER WEEK
W-1	15.09.22 TO 17.09.22	1. Review Of Basic Concepts 1.1 Basic Principle of Mechanics: Force, Moment, support conditions, Conditions of equilibrium, C.G & MI, Free body diagram 1.2 Review of CG and MI of different sections	4	3+1 EXTRA CLASS
W-2	19.09.22 TO 23.09.22	2.1 Simple Stresses and Strains Introduction to stresses and strains: Mechanical properties of materials – Rigidity, Elasticity, Plasticity, Compressibility, Hardness, Toughness, Stiffness, Brittleness, Ductility, Malleability, Creep, Fatigue, Tenacity, Durability, Types of stresses -Tensile, Compressive and Shear stresses, Types of strains - Tensile, Compressive and Shear strains, Complimentary shear stress - Diagonal tensile / compressive Stresses due to shear, Elongation and Contraction, Longitudinal and Lateral strains, Poisson's Ratio, Volumetric strain, computation of stress, strain, Poisson's ratio, change in dimensions and volume etc, Hooke's law - Elastic Constants, Derivation of relationship between the elastic constants. 2.2 Application of simple stress and strain in engineering field: Behaviour of ductile and brittle materials under direct loads, Stress Strain curve of a ductile material, Limit of proportionality, Elastic limit, Yield stress, Ultimate stress, Breaking stress, Percentage elongation, Percentage reduction in area, Significance of percentage elongation and reduction in area of cross section, Deformation of prismatic bars due to uniaxial load, Deformation of prismatic bars due to its self weight.	15	4
W-3	26.09.22 TO 01.10.22	2.3 Complex stress and strain Principal stresses and strains: Occurrence of normal and tangential stresses, Concept of Principal stress and Principal Planes, major and minor principal stresses and their orientations, Mohr's Circle and its application to solve problems of complex stresses		4
W-4	10.10.22 TO 15.10.22			4
W-5	17.10.22 TO 22.10.22			3
W-6	25.10.22 TO 29.10.22	3. Stresses In Beams and Shafts 3.1 Stresses in beams due to bending: Bending stress in beams – Theory of simple bending – Assumptions – Moment of resistance – Equation for Flexure– Flexural stress distribution – Curvature of beam – Position of N.A. and Centroidal Axis – Flexural rigidity –		5

W-7	31.10.22 TO 05.11.22	Significance of Section modulus 3.2 Shear stresses in beams: Shear stress distribution in beams of rectangular, circular and standard sections symmetrical about vertical axis. 3.3 Stresses in shafts due to torsion: Concept of torsion, basic assumptions of pure torsion, torsion of solid and hollow circular sections, polar moment of inertia, torsional shearing stresses, angle of twist, torsional rigidity, equation of torsion	10	5
W-8	07.11.22 TO 12.11.22	4. Columns and Struts 4.1 Columns and Struts, Definition, Short and Long columns, End conditions, Equivalent length / Effective length, Slenderness ratio, Axially loaded short and long column, Euler's theory of long columns, Critical load for Columns with different end conditions	4	4
W-9	14.11.22 TO 19.11.22	5. Shear Force and Bending Moment 5.1 Types of loads and beams: Types of Loads: Concentrated (or) Point load, Uniformly Distributed load (UDL), Types of Supports: Simple support, Roller support, Hinged support, Fixed support, Types of Reactions: Vertical reaction, Horizontal reaction, Moment reaction, Types of Beams based on support conditions: Calculation of support reactions using equations of static equilibrium.	12	5+1 EXTRA CLASS
W-10	21.11.22 TO 26.11.22	5.2 Shear force and bending moment in beams: Shear Force and Bending Moment: Signs Convention for S.F. and B.M, S.F and B.M of general cases of determinate beams with concentrated loads and udl only, S.F and B.M diagrams for Cantilevers, Simply supported beams and Over hanging beams, Position of maximum BM, Point of contra flexure, Relation between intensity of load, S.F and B.M.		5+1 EXTRA CLASS
W-11	28.11.22 TO	6. Slope and Deflection 6.1 Introduction: Shape and nature of elastic curve (deflection curve); Relationship between slope, deflection and curvature (No derivation), Importance of slope and deflection.	10	5+2 EXTRA CLASS
W-12	05.12.22 TO 10.12.22	6.2 Slope and deflection of cantilever and simply supported beams under concentrated and uniformly distributed load (by Double Integration method, Macaulay's method).		3
W-13	12.12.22 TO 17.12.22	7. Indeterminate Beams 7.1 Indeterminacy in beams, Principle of consistent deformation/compatibility, Analysis of propped cantilever, fixed and two span continuous beams by principle of superposition, SF and BM diagrams (point load and udl covering full span)	10	2+2 EXTRA CLASS
	19.12.22			4+2 EXTRA CLASS

W-14	TO 24.12.22	8. Trusses 8.1 Introduction: Types of trusses, statically determinate and indeterminate trusses, degree of indeterminacy, stable and unstable trusses, advantages of trusses. 8.2 Analysis of trusses: Analytical method (Method of joints, method of Section)	10	5
W-15	2.01.23 TO 7.01.23			5
W-16	9.01.23 TO 13.01.23	REVISION		5
W-17	16.01.23 TO 21.01.23	REVISION		5

M. Athanasios Jones
Signature of Faculty 4/9/22

[Signature]
15/09/2022
Signature of Principal

P.S.I.E.T, KARANDA, DHENKANAL

LESSON PLAN FOR EMST (TH.1) FOR 5TH SEM ,CIVIL ENGG, WINTER -2022

W.E.F.15.09.2022 Faculty Name- *Madhusudhan Sana*

WEEK NO.	DATE	TOPIC	PERIODS ASSIGNED PER TOPIC	PERIODS AVAILABLE PER WEEK
Week-1	15.09.22 TO 19.09.22	1. CONCEPT/MEANING OF ENTREPRENEURSHIP- Need of Entrepreneurship, Characteristic Qualities and type of Entrepreneur, Function Barriers in Entrepreneurship, Entrepreneurship vs Manager forms of Business Ownership , Sole Proprietorship ,Partnership form and other types of Industries ,Concept of Start ups,	10	5
Week-2	20.09.22 TO 23.09.22	Entrepreneurship support agencies at National, State, District Level (Sources): DIC, NSIC, OSIC , SIDBI, NABARD, Commercial Bank, KVIC etc. Technology Business Incubators (TBI) and Science and Technology Entrepreneurship Parks.		5
Week-3	26.09.22 TO 29.09.22	Time schedule plan , Agencies to be contacted for Project Implementation . Assessment of Demand and Supply and Potential areas of Growth Identifying Business Opportunity , Final Product Selection .	8	4
Week-4	10.10.22 TO 13.10.22	Business Planning ,SSI , Ancillary Units , Service Sector Unit		4
Week-5	17.10.22 TO 20.10.22	3. Project Report Management- Preliminary Project Report ,Details Project Report Techno economic Feasibility . Project Viability.		4

Week-6	21.10.22 TO 27.10.22	MANAGEMENT PRINCIPLES – Definition of Management ,Principle of Management, Function of Management (Planning, Organizing , Staffing, Directing and Controlling etc). Level of Management in an Organisation.	5	4+1(Extra Class)
Week-7	1.11.22 TO 4.11.22	FUNCTIONAL AREAS OF MANAGEMENT- Production of Management ,Function ,Activities, Productivity, Quality Control, Production Planning and Control. Inventory Management , Need for Inventory Management ,Marketing Management- Concept of Marketing and Marketing Management, Marketing Technique.	10	4
Week-8	7.11.22 TO 11.11.22	Models/Techniques of Inventory Management, Financial Management ,Function of Financial Management, Management of Working capital , Costing ,Break even Analysis ,Brief Idea about Accounting Terminologies: Book Keeping , Journal Entry, Petty cash book, P&L Accounts ,Balance Sheet, Concept of 4ps.		4
Week-9	14.11.22 TO 18.11.22	Human resource Management- Functions of Personnel Management, Man power Planning, Recruitment, Sources of Manpower, Selection process, Method of Testing, Method of Training and Development, Payment of Wages. LEADERSHIP AND MOTIVATION- Leadership ,Definition and Need/ Importance Qualities and Function of Leader ,Manager vs Leader ,Style of Leadership .		2+2
Week-10	21.11.2 TO 24.11.2 2	LEADERSHIP AND MOTIVATION - Style of Leadership (Autocratic , Democratic , Participative) Motivation- Definition and Characteristic , Importance of Motivation , Factor Effecting Motivation , Theories of Motivation (Maslow),		4

		Method of Improving Motivation , Importance of Communication in Business , Types and Barriers of Communication.		
Week-11	28.11.22 TO 1.12.22	WORK CULTURE , TQM AND SAFETY – Human relationship and Performance in Organization ,Relations with peers , Superiors and Subordinates. TQM Concept : Quality Policy , Quality Management ,Quality System ,Accidents and Safety Cause , Preventive Measures, General Safety Rules, Personal Protection Equipment (PPE).	5	4
Week-12	5.12.22 TO 8.12.22	LEGISLATION- Intellectual Property Rights (IPR), Patents, Trademarks ,Copy right,		1+3
Week-13	12.12.22 TO 15.12.22	LEGISLATION - Features of Factories Act 1948 With Amendment (Only Silent Points) Features of Payments of Wages Act 1936 (Only Silent Points).	6	3+1
Week-14	19.12.22 TO 22.12.22	SMART TECHNOLOGY – Concept of IOT , How IOT Works , Component of IOT , Characteristic of IOT , Categories of IOT. Application of IOT- Smart cities , Smart Transportation , Smart		4
Week-15	2.1.23 TO 21.1.23	Smart home, Smart Healthcare , Smart Industry, Smart Agriculture , Smart Energy Management etc. Revision and Doubt Clearing Class, Possible Question Discussion . REVISION AND PREVIOUS YEAR QUESTION DISCUSSION -	6	1+3

Madhuram Lone
Signature of Concerned Faculty 04/12/22

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15/12/22
Signature of Principal