

PRODUCTION TECHNOLOGY		
Discipline : Mechanical Engg.	Semester : 3RD	Name of the Teachnlg Faculty : Miss BHAGYASHREE PATRA
Subject : Production Technology	No.of days/Per weeks Class Alloted Weeks :4	semester start date:1st oct 2021 Semester end date:31st jan 2022
Weeks	Class day	Theory
1st(Oct-2021)	1st	1.1Extrusion: Definition & Classification
	2nd	1.2Explain direct, indirect and impact extrusion process.
	3rd	1.3Define rolling. Classify it.
	4th	1.4Differentiate between cold rolling and hot rolling process.
2nd(OCT-2021)	1st	1.5List the different types of rolling mills used in Rolling process
	2nd	1.5List the different types of rolling mills used in Rolling process
	3rd	2.1Define welding and classify various welding processes.
	4th	2.1Define welding and classify various welding processes.
3rd(OCT-2021)	1st	2.2Explain fluxes used in welding.
	2nd	2.3Explain Oxy-acetylene welding process.
	3rd	2.4Explain various types of flames used in Oxy-acetylene welding process.
	4th	2.5Explain Arc welding process.
4th(OCT-2021)	1st	2.5Explain Arc welding process.
	2nd	2.6Specify arc welding electrodes.
	3rd	2.7Define resistance welding and classify it.
	4th	2.7Define resistance welding and classify it.
1st (Nov-2021)	1st	2.7Define resistance welding and classify it.
	2nd	2.8Describe various resistance welding processes such as butt welding, spot welding, flash welding, projection welding and seam welding.
	3rd	2.8Describe various resistance welding processes such as butt welding, spot welding, flash welding, projection welding and seam welding.
	4th	2.8Describe various resistance welding processes such as butt welding, spot welding, flash welding, projection welding and seam welding.
2nd (Nov-2021)	1st	2.8Describe various resistance welding processes such as butt welding, spot welding, flash welding, projection welding and seam welding.
	2nd	2.9Explain TIG and MIG welding process
	3rd	2.9Explain TIG and MIG welding process
	4th	2.10State different welding defects with causes and remedies.
3rd (Nov-2021)	1st	2.10State different welding defects with causes and remedies.
	2nd	3.1Define Casting and Classify the various Casting processes.
	3rd	3.1Define Casting and Classify the various Casting processes.
	4th	3.2Explain the procedure of Sand mould casting.

4th (Nov-2021)	1st	3.3 Explain different types of molding sands with their composition and properties.
	2nd	3.3 Explain different types of molding sands with their composition and properties.
	3rd	3.4 Classify different pattern and state various pattern allowances.
	4th	3.4 Classify different pattern and state various pattern allowances.
1st (DEC-2021)	1st	3.4 Classify different pattern and state various pattern allowances.
	2nd	3.5 Classify core.
	3rd	3.6 Describe construction and working of cupola and crucible furnace.
	4th	3.6 Describe construction and working of cupola and crucible furnace.
2nd (DEC-2021)	1st	3.7 Explain die casting method.
	2nd	3.7 Explain die casting method.
	3rd	3.8 Explain centrifugal casting such as true centrifugal casting, centrifuging with advantages, limitation and area of application.
	4th	3.8 Explain centrifugal casting such as true centrifugal casting, centrifuging with advantages, limitation and area of application.
3rd (DEC-2021)	1st	3.9 Explain various casting defects with their causes and remedies.
	2nd	3.9 Explain various casting defects with their causes and remedies.
	3rd	4.1 Define powder metallurgy process.
	4th	4.2 State advantages of powder metallurgy technology technique
4th (DEC-2021)	1st	4.3 Describe the methods of producing components by powder metallurgy technique.
	2nd	4.3 Describe the methods of producing components by powder metallurgy technique.
	3rd	4.4 Explain sintering.
	4th	4.5 Economics of powder metallurgy.
1st (JAN-2022)	1st	4.5 Economics of powder metallurgy.
	2nd	5.1 Describe Press Works: blanking, piercing and trimming.
	3rd	Blanking operation
	4th	Difference between Blanking and Punching
2nd (JAN-2022)	1st	5.2 List various types of die and punch
	2nd	5.2 List various types of die and punch
	3rd	5.3 Explain simple, Compound & Progressive dies.
	4th	compound die
3rd (JAN-2022)	1st	progressive die
	2nd	5.4 Describe the various advantages & disadvantages of above dies
	3rd	6.1 Define jigs and fixtures
	4th	6.2 State advantages of using jigs and fixtures
4th (JAN-2022)	1st	6.3 State the principle of locations
	2nd	6.4 Describe the methods of location with respect to 3-2-1 point location of rectangular jig
	3rd	6.4 Describe the methods of location with respect to 3-2-1 point location of rectangular jig
	4th	6.5 types of JIG and Fixture

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STRENGTH OF MATERIAL

Discipline :Mechanical engineering	Semester : 3RD	Name of the Teachnlg Faculty : Miss LOPAMUDRA SWAIN
Subject: Strength Of Materials	No.of days/Per weeks Class Alloted Weeks :4	Semester START DATE:1ST OCT 2021 SEMESTER END DATE 31ST JAN 2022
Weeks	Class day	Theory
1st(Oct-2022)	1st	Simple stress& strain ,Types of load, stresses & strains,(Axial and tangential) Hooke's Law
	2nd	Types of load, stresses & strains,(Axial and tangential) Hooke's Law
	3rd	Young's modulus, bulk modulus, modulus of rigidity
	4th	Temperature stress, determine the temperature stress in composite bar (single core)
2nd	1st	Temperature stress, determine the temperature stress in composite bar (single core)
	2nd	Poisson's ratio, derive the relation between three elastic constants
	3rd	Principle of super position, stresses in composite section
	4th	Strain energy and resilience, Stress due to gradually applied, suddenly applied and impact load
3rd	1st	Simple problems on above, Thin cylinder and spherical shell under internal pressure
	2nd	Definition of hoop and longitudinal stress, strain, Derivation of hoop stress, longitudinal stress, hoop strain
	3rd	Computation of the change in length, diameter and volume, longitudinal strain and volumetric strain
	4th	Two dimensional stress systems ,Determination of normal stress, shear stress and resultant stress on oblique plane

4th	1st	Determination of normal stress, shear stress and resultant stress on oblique plane
	2nd	Location of principal plane and computation of principal stress
	3rd	Location of principal plane and computation of principal stress and Maximum shear stress using Mohr's circle
	4th	Location of principal plane and computation of principal stress and Maximum shear stress using Mohr's circle
1st(Nov-2022)	1st	Bending moment & shear force
	2nd	Types of beam and load
	3rd	Types of beam and load
	4th	Concepts of Shear force and bending moment
2nd	1st	Shear Force and Bending moment diagram and its salient features
	2nd	illustration of SFD & BMD in cantilever beam, simply supported beam
	3rd	illustration of SFD & BMD in cantilever beam, simply supported beam
	4th	illustration of SFD & BMD in cantilever beam, simply supported beam
3rd	1st	SFD & BMD of over hanging beam under point load and uniformly distributed load
	2nd	SFD & BMD of over hanging beam under point load and uniformly distributed load
	3rd	Solve Simple problem.
	4th	Theory of simple bending
4th	1st	Theory of simple bending
	2nd	Assumptions in the theory of bending
	3rd	Bending equation, Moment of resistance, Section modulus & neutral axis
	4th	Bending equation, Moment of resistance, Section modulus & neutral axis
1st(Dec-2022)	1st	Bending equation, Moment of resistance, Section modulus & neutral axis
	2nd	Solve simple problems
	3rd	Solve simple problems

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LESSION PLAN

Discipline :Electrical engineering	Semester : 3rd	Name of the Teachnig Faculty : Priyabrata Pradhan
Subject:Elements of Mechanical Engg	No.of days/Per weeks Class Alloted Weeks :4	Semester :3rd No.of Weeks : 4
Weeks	Class day	Theory
1st(Oct-2021)	1st	THERMODYNAICS
	2nd	State Unit of Heat and work
	3rd	1st law of thermodynamics.
	4th	numericals
2nd(Oct-2021)	1st	State Laws of perfect gases
	2nd	numericals
	3rd	Determine relationship of specific heat of gases at constant volume and constant pressure
	4th	numericals
3rd(Oct-2021)	1st	PROPERTIES OF STEAM
	2nd	numericals
	3rd	Explain total heat of wet, dry and super heated steam
	4th	numericals
4th(Oct-2021)	1st	State types of Boilers
	2nd	Describe Cochran boiler
	3rd	Babcock Wilcox boiler
	4th	Describe Mountings and accessories
1st(Nov-2021)	1st	Explain the principle of Simple steam engine
	2nd	Draw Indicator diagram
	3rd	Calculate Mean effective pressure
	4th	IHP and BHP and mechanical efficiency
2nd(Nov-2021)	1st	Calculate Mean effective pressure
	2nd	Solve Simple problem.
	3rd	Solve Simple problem.
	4th	STEAM TURBINES:
3rd(Nov-2021)	1st	State Types
	2nd	impulse Turbine
	3rd	reaction Turbine
	4th	Differentiate between impulse and reaction Turbine
4th(Nov-2021)	1st	CONDENSER
	2nd	Explain the function of condenser
	3rd	State their types
	4th	I.C. ENGINE terminology
1st(Dec-2021)	1st	I.C. ENGINE terminology
	2nd	Explain working of two stroke petrol engines.
	3rd	Explain working of four stroke diesel engines.
	4th	difference between them
2nd(Dec-2021)	1st	HYDROSTATICS

	2nd	Describe properties of fluid
	3rd	Describe properties of fluid
	4th	Describe properties of fluid
3rd(Dec-2021)	1st	Determine pressure at a point
	2nd	pressure measuring instruments
	3rd	pressure measuring instruments
	4th	pressure measuring instruments
4th(Dec-2021)	1st	numericals
	2nd	numericals
	3rd	HYDROKINETICS:
	4th	Deduce equation of continuity of flow
1st(Jan-2022)	1st	numericals
	2nd	numericals
	3rd	Explain energy of flowing liquid
	4th	Explain energy of flowing liquid
2nd(Jan-2022)	1st	State Bernoulli's theorem
	2nd	explain Bernoulli's theorem
	3rd	proove Bernoulli's theorem
	4th	numericals
3rd(Jan-2022)	1st	numericals
	2nd	numericals
	3rd	HYDRAULIC DEVICES AND PNEUMATICS: difference
	4th	Intensifier
4th(Jan-2022)	1st	Hydraulic lift
	2nd	Accumulator
	3rd	Hydraulic ram
	4th	Hydraulic ram

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THEORY OF MACHINE

Discipline : Mechanical Engg.	Semester : 4th	Name of the Teachnlg Faculty : Mrs. Lopamudra Swain
Subject : THEORY OF MACHINE		Semester Start Date:10.3.22 Semester end date:16.6.22
Weeks	Class day	Theory
1st(April-2022)	1st	Simple mechanism , Definition of Link
	2nd	Definition of kinematic chain with examples
	3rd	mechanism definition and example
	4th	definition of machine, Analysis on Link ,kinematic chain, mechanism, machine
2nd	1st	Inversion, four bar link mechanism and its inversion ,Lower pair and higher pair ,Cam and followers
	2nd	Friction,Friction between nut and screw for square thread, screw jack
	3rd	Friction between nut and screw for square thread, screw jack
	4th	Bearing and its classification, Description of roller, needle roller& ball bearings
3rd	1st	Bearing and its classification, Description of roller, needle roller& ball bearings
	2nd	Bearing and its classification, Description of roller, needle roller& ball bearings
	3rd	Torque transmission in flat pivot& conical pivot bearings
	4th	Torque transmission in flat pivot& conical pivot bearings
4th	1st	Torque transmission in flat pivot& conical pivot bearings
	2nd	Flat collar bearing of single and multiple types
	3rd	Flat collar bearing of single and multiple types
	4th	Torque transmission for single and multiple clutches
1st(May-2022)	1st	Torque transmission for single and multiple clutches
	2nd	Working of simple frictional brakes
	3rd	Working of Absorption type of dynamometer ,Power Transmission , Concept of power transmission
	4th	Type of drives, belt, gear and chain drive
2nd	1st	Computation of velocity ratio, length of belts (open and cross)with and without slip
	2nd	Ratio of belt tensions, centrifugal tension and initial tension,Power transmitted by the belt
	3rd	Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension
	4th	Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension
3rd	1st	Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension

	2nd	V-belts and V-belts pulleys, Concept of crowning of pulleys,
	3rd	Gear drives and its terminology
	4th	Gear drives and its terminology
4th	1st	Gear trains, working principle of simple, compound, reverted and epicyclic gear trains
	2nd	Gear trains, working principle of simple, compound, reverted and epicyclic gear trains
	3rd	Gear trains, working principle of simple, compound, reverted and epicyclic gear trains
	4th	Governors and Flywheel
1st (June-2022)	1st	Function of governor
	2nd	Classification of governor
	3rd	Working of Watt governor.
	4th	Working of Porter governor.
2nd	1st	Working of Proell governor.
	2nd	Working of Hartnell governor, Fluctuation of energy and coefficient of fluctuation of speed
	3rd	Conceptual explanation of sensitivity, stability and isochronisms, Function of flywheel, Comparison between flywheel & governor.
	4th	Balancing of Machine, Concept of static and dynamic balancing. Principles of balancing of reciprocating parts
3rd	1st	Static balancing of rotating parts, Causes and effect of unbalance
	2nd	Difference between static and dynamic balancing, Introduction to Vibration and related terms (Amplitude, time period and frequency, cycle)
	3rd	Classification of vibration, Basic concept of natural, forced & damped vibration
	4th	Torsional and Longitudinal vibration, Causes & remedies of vibration

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HMFP LESSON PLAN

Discipline mechanical engineering	Semester : 15th	Name of the Teaching Faculty : Miss BHAGYASHREE PATIL
Subject: Hydraulic Machines & Industrial Fluid Power	No. of days/Per weeks Class Allotted Weeks : 4	Semester From Date: 1st Oct 2021 To Date: 31st Jan 2022
Weeks	Class day	Theory
1st(OCT-2021)	1st	Definition hydraulic turbines
	2nd	classification of hydraulic turbines
	3rd	Construction and working principle of impulse turbine
	4th	Velocity diagram of moving blades of pelton wheel
2nd(OCT-2021)	1st	work done and derivation of various efficiencies
	2nd	Numericals
	3rd	Numericals
	4th	Construction and working principle of Reaction turbine
3rd(OCT-2021)	1st	Velocity diagram of moving blades of Francis Turbine
	2nd	numericals
	3rd	Numericals
	4th	Velocity diagram of moving blades of kaplan turbine
4th(OCT-2021)	1st	Numericals
	2nd	Numericals
	3rd	Distinguish between impulse turbine and reaction turbine.
	4th	Construction and working principle of centrifugal pumps
1st(NOV-2021)	1st	work done and derivation of various efficiencies of centrifugal pumps.
	2nd	Numericals
	3rd	Numericals
	4th	Numericals
2nd(NOV-2021)	1st	Describe construction & working of double acting reciprocating pump.
	2nd	Describe construction & working of double acting reciprocating pump.
	3rd	Derive the formula for power required to drive the pump (Single acting & double acting)
	4th	State positive & negative slip & establish relation between slip & coefficient of discharge.
3rd(NOV-2021)	1st	Numericals
	2nd	Elements -filter-regulator-lubrication unit
	3rd	Pressure control valves
	4th	Pressure relief valves
4th(NOV-2021)	1st	Pressure regulation valves
	2nd	3/2DCV

	3rd	5/2 DCV
	4th	5/3DCV
1st(DEC-2021)	1st	Flow control valves
	2nd	Throttle valves
	3rd	ISO Symbols of pneumatic components
	4th	Pneumatic circuits
2nd(DEC-2021)	1st	Direct control of single acting cylinder
	2nd	Operation of double acting cylinder
	3rd	metering in
	4th	metering out
3rd(DEC-2021)	1st	HYDRAULIC CONTROL SYSTEM
	2nd	Comparison of hydraulic and pneumatic system
	3rd	Hydraulic system
	4th	merit and demerits
4th(DEC-2021)	1st	Hydraulic accumulators
	2nd	Pressure control valves
	3rd	Pressure relief valves
	4th	Pressure regulation valves
1st(JAN-2022)	1st	3/2DCV
	2nd	5/2 DCV
	3rd	5/3DCV
	4th	Flow control valves
2nd(JAN-2022)	1st	Throttle valves
	2nd	Fluid power pumps
	3rd	External gear pumps
	4th	internal gear pumps
3rd(JAN-2022)	1st	Vane pump
	2nd	Radial piston pumps
	3rd	Actuators
	4th	Direct control of single acting cylinder
4th(JAN-2022)	1st	Direct control of single acting cylinder
	2nd	Operation of double acting cylinder
	3rd	Operation of double acting cylinder
	4th	Operation of double acting cylinder with metering in and metering out control

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MECHATRONICS

Discipline : Mechanical Engg.	Semester : 5 th	Name of the Teaching Faculty : Miss Lopamudra Swain
Subject : MECHATRONICS	No. of days/Per weeks Class Alloted Weeks :4	Semester Start Date:1st oct 2021 Semester End Date:31st jan 2022
Weeks	Class day	Theory
1st(OCT-2021)	1st	ACTUATORS-MECHANICAL
	2nd	Definition of Link
	3rd	Definition of kinematic chain with examples
	4th	mechanism definition and example
2nd	1st	definition of machine
	2nd	Analysis on Link ,kinematic chain, mechanism, machine
	3rd	Slider crank Mechanism
	4th	Inversion, Slider crank Mechanism link mechanism and its inversion
3rd	1st	Inversion, Slider crank Mechanism link mechanism and its inversion
	2nd	Lower pair and higher pair
	3rd	Lower pair and higher pair
	4th	Cam and followers
4th	1st	Bearing and its classification, Description of roller, needle roller& ball bearings
	2nd	Bearing and its classification, Description of roller, needle roller& ball bearings
	3rd	Bearing and its classification, Description of roller, needle roller& ball bearings
	4th	Bearing and its classification, Description of roller, needle roller& ball bearings
1st (Nov -2021)	1st	Type of drives, belt, gear and chain drive
	2nd	Type of drives, belt, gear and chain drive
	3rd	Type of drives, belt, gear and chain drive
	4th	Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
2nd	1st	Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
	2nd	Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear

	3rd	Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
	4th	Gear Drive, Spur gear, Bevel gear, Helical gear, worm gear
3rd	1st	Belt & Belt drive
	2nd	Belt & Belt drive
	3rd	Belt & Belt drive ,Power Transmission, Type of drives, belt, gear and chain drive
	4th	Belt & Belt drive ,Power Transmission
1st (Jan-2022)	1st	Type of drives, belt, gear and chain drive
	2nd	Computation of velocity ratio, length of belts (open and cross)with and without slip
	3rd	Ratio of belt tensions, centrifugal tension and initial tension
	4th	Power transmitted by the belt
2nd	1st	Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension
	2nd	Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension
	3rd	Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension
	4th	Determine belt thickness and width for given permissible stress for open and crossed belt considering centrifugal tension
3rd	1st	Gear drives and its terminology
	2nd	Gear drives and its terminology
	3rd	Gear drives and its terminology
	4th	Gear trains, working principle of simple, compound, reverted and epicyclic gear trains
4th	1st	Gear trains, working principle of simple, compound, reverted and epicyclic gear trains
	2nd	Gear trains, working principle of simple, compound, reverted and epicyclic gear trains
	3rd	Gear trains, working principle of simple, compound, reverted and epicyclic gear trains

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Industrial Engineering

Discipline : Mechanical Engg.	Semester : 6 th	Name of the Teaching Faculty : Miss Lopamudra Swain
Subject : Industrial Engineering and Management	No. of days/Per weeks Class Alloted	Semester Start Date: 10.3.22 Semester End Date: 16.6.22
Weeks	Class day	Theory
1st(April-2022)	1st	Industry, Define plant layout,
	2nd	Describe the objective and principles of plant layout
	3rd	Explain Process Layout, Product Layout and Combination Layout
	4th	Techniques to improve layout, Principles of material handling equipment.
2nd	1st	Plant maintenance, Importance of plant maintenance, Break down maintenance
	2nd	Preventive maintenance, Scheduled maintenance
	3rd	OPERATIONS RESEARCH, Introduction to Operations Research and its applications.
	4th	Define Linear Programming Problem, Solution of L.P.P. by graphical method
3rd	1st	Evaluation of Project completion time by Critical Path Method and PERT (Simple Problems)
	2nd	Evaluation of Project completion time by Critical Path Method and PERT (Simple Problems)
	3rd	Explain distinct features of PERT with respect to CPM
	4th	Explain distinct features of PERT with respect to CPM
4th	1st	INVENTORY CONTROL
	2nd	Classification of inventory
	3rd	Objective of inventory control
	4th	Benefits of inventory control
1st(May-2022)	1st	Describe the functions of inventories.
	2nd	Benefits of inventory control
	3rd	Costs associated with inventory
	4th	Terminology in inventory control
2nd	1st	Explain and Derive economic order quantity for Basic model. (Solve numerical)
	2nd	Explain and Derive economic order quantity for Basic model. (Solve numerical)
	3rd	Define and Explain ABC analysis

	4th	INSPECTION AND QUALITY CONTROL, Define Inspection and Quality control
3rd	1st	Describe planning of inspection, Describe types of inspection.
	2nd	Advantages and disadvantages of quality control
	3rd	Study of factors influencing the quality of manufacture.
	4th	Explain the Concept of statistical quality control, Control charts (X, R, P and C - charts).
4th	1st	Explain the Concept of statistical quality control, Control charts (X, R, P and C - charts).
	2nd	Methods of attributes
	3rd	Concept of ISO 9001-2008, Benefits of ISO to the organization
	4th	Quality management system, Registration /certification procedure.
1st(June-2022)	1st	JIT, Six sigma, 7S, Lean manufacturing
	2nd	Solve related problems
	3rd	PRODUCTION PLANNING AND CONTROL
	4th	Principles of product and process planning
2nd	1st	Major functions of production planning and control
	2nd	Routing, Scheduling, Dispatching, Controlling, Job order production
	3rd	detail case study with specific examples on the above
	4th	Methods of forecasting, Types of production, Detail case study on Mass & Batch production

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LESSION PLAN

Discipline : Mechanical Engg.	Semester : 6th	Name of the Teachnig Faculty : Priyabrata Pradhan
Subject : Advance manufacturing process	No.of days/Per weeks Class Alloted Weeks :4	Semester start:10th march 2022 Semester end:16th june 2022
Weeks	Class day	Theory
2nd(Mar-2022)	1st	Modern Machining Processes Introduction and comparison with traditional machining.
	2nd	Ultrasonic Machining: principle,Description of equipment,working procedure of USM.
	3rd	Electric Discharge Machining: Principle, Description of equipment
	4th	working procedure of EDM
3rd(Mar-2022)	1st	Abrasive Jet Machining: principle, working procedure of AJM
	2nd	Laser Beam Machining: principle, description of equipment,working procedure of LBM
	3rd	Electro Chemical Machining: principle,working procedure of ECM
	4th	Plasma Arc Machining – principle, description of equipment
4th(Mar-2022)	1st	Electron Beam Machining - principle, working procedure of EBM
	2nd	Processing of plastics
	3rd	Moulding processes:
	4th	Injection moulding
1st(Apr-2022)	1st	Compression moulding
	2nd	Transfer moulding
	3rd	Extruding;
	4th	Extruding;
2nd(Apr-2022)	1st	Casting
	2nd	Casting
	3rd	Calendering.
	4th	Fabrication methods
3rd(Apr-2022)	1st	Sheet forming
	2nd	Blow moulding,
	3rd	Laminating plastics (sheets, rod& tubes)
	4th	Reinforcing.
4th(Apr-2022)	1st	Applications of Plastics.
	2nd	Applications of Plastics.
	3rd	Additive Manufacturing Process:Introduction, Need for Additive Manufacturing
	4th	Additive Manufacturing Process:Introduction, Need for Additive Manufacturing

1st(May-2022)	1st	Fundamentals of Additive Manufacturing
	2nd	AM Process Chain
	3rd	Advantages and Limitations of AM,
	4th	Commonly used Terms
2nd(May-2022)	1st	Classification of AM process
	2nd	Fundamental Automated Processes
	3rd	Fundamental Automated Processes
	4th	Distinction between AM and CNC.other related technologies.
3rd(May-2022)	1st	Application –Application in Design, Aerospace Industry, Automotive Industry,
	2nd	Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications.
	3rd	Web Based Rapid Prototyping Systems
	4th	Web Based Rapid Prototyping Systems
4th(May-2022)	1st	Concept of Flexible manufacturing process
	2nd	concurrent engineering
	3rd	production tools like capstan and turret lathes
	4th	rapid prototyping processes.
1st(Jun-2022)	1st	rapid prototyping processes.
	2nd	Special Purpose Machines (SPM):concepts
	3rd	General elements of SPM
	4th	Productivity improvement by SPM
2nd(Jun-2022)	1st	Principles of SPM design.
	2nd	Maintenance of Machine Tools-types
	3rd	Repair cycle analysis, Repair complexity
	4th	Maintenance manual, Maintenance records,
3rd(Jun-2022)	1st	Housekeeping
	2nd	Introduction to Total Productive Maintenance (TPM).
	3rd	Introduction to Total Productive Maintenance (TPM).
	4th	Introduction to Total Productive Maintenance (TPM).

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MECHANICS LESSON PLAN

Discipline : Mechanical Engg./civil engineering/electrical engineering	Semester : 2nd	Name of the Teaching Faculty : Miss BHAGYASHREE PATRA
Subject: Mechanics	No. of days/Per weeks Class Alloted Weeks : 4	Semester From Date: 10th march 2022 To Date: 18th june 2022
Weeks	Class day	Theory
2nd(MAR-2022)	1st	Defnitions of Mechanics, Statics, Dynamics, Rigid Bodies
	2nd	Force System. Definition, Classification of force system, Characteristics of Force & effect of Force.
	3rd	Principles of Transmissibility & Principles of Superposition.
	4th	concept of Free Body diagram
3rd(MAR-2022)	1st	Resolution of a Force. Definition, Method of Resolution
	2nd	Method of Resolution, Method of composition of forces
	3rd	Law of Parallelogram of forces
	4th	Moment of Force. Definition, Geometrical meaning of moment of a force
4th(MAR-2022)	1st	Classification of moments according to direction of rotation, sign convention
	2nd	Law of moments, Varignon's Theorem,
	3rd	Couple – Definition, S.I. units
	4th	measurement of couple, properties of couple.
1st(APR-2022)	1st	Lami's Theorem – statement and numerical
	2nd	Lami's Theorem – statement and numerical
	3rd	Definition of friction, Frictional forces
	4th	Limiting frictional force, Coefficient of friction
2nd(APR-2022)	1st	Laws of Friction, Advantages & Disadvantages of friction
	2nd	Equilibrium of bodies on level plane – Force applied on horizontal plane up and down
	3rd	numericals on it
	4th	Force applied on inclined plane up and down
3rd(APR-2022)	1st	numericals on inclined plane
	2nd	Ladder Friction, wedge friction
	3rd	Centroid – Definition, Moment of an area about an axis
	4th	centroid of geometrical figures such as squares, rectangles, triangles, circles, semicircles & quarter circles,
4th(APR-2022)	1st	numericals based on centroid of geometrical figures
	2nd	numericals based on centroid of geometrical figures
	3rd	Moment of Inertia – Definition,
	4th	Parallel axis & Perpendicular axis Theorems
1st(MAY-2022)	1st	M.I. of plane lamina & different engineering sections.
	2nd	numericals on M.I
	3rd	Definition of simple machine, compound lifting machine, M.A, V.R. & Efficiency
	4th	State the relation between them, State Law of Machine,

2nd(MAY-2022)	1st	Reversibility of Machine, Self Locking Machine
	2nd	numericals on Reversibility of Machine
	3rd	velocity ratio of simple and compound gear
	4th	Study of simple machines - simple axle & wheel
3rd(MAY-2022)	1st	single purchase crab winch
	2nd	double purchase crab winch
	3rd	Worm & Worm Wheel, screw jack
	4th	Numericals on Simple Machine
4th(MAY-2022)	1st	Numericals on Simple Machine
	2nd	Types of hoisting machine like derricks etc, Their use and working principle
	3rd	Kinematics & Kinetics, Principles of Dynamics
	4th	Newton's Laws of Motion, Motion of Particle acted upon by a constant force
1st(JUN-2022)	1st	Equations of motion
	2nd	D'Alembert's Principle.
	3rd	Work, Power, Energy
	4th	Kinetic & Potential energy
2nd(JUN-2022)	1st	numericals
	2nd	numericals
	3rd	Momentum & impulse
	4th	conservation of energy & linear momentum
3rd(JUN-2022)	1st	collision of elastic bodies
	2nd	Coefficient of Restitution.
	3rd	numericals
	4th	numericals

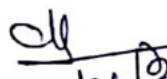
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Patra
 14.03.22
 B. Patra
 (Lect. mech)

FLUID MECHANICS LESSION PLAN

Discipline : Mechanical Engg.	Semester : 4th	Name of the Teachnlg Faculty : Miss BHAGYASHREE PATRA
Subject : fluid mechanics	No.of days/Per weeks Class Alloted Weeks :4	Semester From Date: 10th march 2022 To Date: 18.june 2022
Weeks	Class day	Theory
2nd(march-2022)	1st	Define fluid,fluid properties
	2nd	density,specific weight,specific gravity
	3rd	numericals based on fluid propertoies
	4th	numericals based on fluid propertoies
3rd(march-2022)	1st	Definitions and Units of Dynamic viscosity, kinematic viscosity,
	2nd	surface tension
	3rd	numericals based on surface tension
	4th	numericals based on surface tension
4th(march-2022)	1st	Capillary phenomenon
	2nd	numericals based on capillarity
	3rd	Definitions and units of fluid pressure
	4th	pressure intensity and pressure head
1st(April-2022)	1st	Statement of Pascal's Law,applications of pascal law
	2nd	Concept of atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure
	3rd	Pressure measuring instruments,classification
	4th	Simple Manometers
2nd(april-2022)	1st	numericals on Simple Manometers
	2nd	Differential manometer
	3rd	numericals on differential Manometers
	4th	Bourdon tube pressure gauge
3rd(April-2022)	1st	Definition of hydrostatic pressure , Total pressure and centre of pressure
	2nd	Total pressure and centre of pressure on immersed bodies(Horizontal and Vertical Bodies)
	3rd	numericals based on total pressure and center of pressure
	4th	Archimedes 'principle
4th(April-2022)	1st	concept of buoyancy
	2nd	meta center and meta centric height
	3rd	Concept of floatation
	4th	Continuity equation(Statement and proof for one dimensional flow)
1st(May-2022)	1st	Bernoulli's theorem(Statement) and total energy concept

	2nd	proof of Bernoulli's theorem
	3rd	numericals based on Bernoulli's theorem
	4th	numericals based on Bernoulli's theorem
2nd(May-2022)	1st	venturimeter
	2nd	numericals on(Venturimeter)
	3rd	pitot tube
	4th	numericals on pitot tube
3rd(May-2022)	1st	Define orifice and Flow through orifice
	2nd	Orifices coefficient & the relation between the orifice coefficients
	3rd	problems on Orifices coefficient & the relation between the orifice coefficients
	4th	Classifications of notches & weirs
4th(May-2022)	1st	Discharge over a rectangular notch or weir
	2nd	Definition of pipe
	3rd	Loss of energy in pipes.
	4th	type of Head loss
1st(june-2022)	1st	Darcy's formula
	2nd	numericals on Darcy's formula
	3rd	Hydraulic gradient and total gradient line
	4th	Impact of jet on fixed vertical flat plates
2nd(june-2021)	1st	Impact of jet on moving vertical flat plates
	2nd	Derivation of work done on series of vanes
	3rd	condition for maximum efficiency.
	4th	Impact of jet on moving curved vanes,
3rd(june-2021)	1st	Impact of jet on moving curved vanes,
	2nd	illustration using velocity triangles,
	3rd	illustration using velocity triangles,
	4th	derivation of work done, efficiency

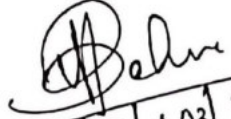

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Discipline : Mechanical Engg.	Semester : 3Rd	Name of the Teachnig Faculty : Mrs. Monalisha Behera
Subject : Thermal Engineering	No.of days/Per weeks Class Alloted Weeks :4	SEMESTER FROM DATE:1/10/2021 TO DATE:31/01/2022
Weeks	Class day	Theory
1st(OCT-2021)	1st	Thermodynamic Systems (closed, open, isolated)
	2nd	Thermodynamic properties of a system -pressure, volume, temperature
	3rd	entropy,enthalpy
	4th	Internal energy and units of measurement
2ND(OCT-2021)	1st	Intensive and extensive properties
	2nd	Intensive and extensive properties
	3rd	Define thermodynamic processes, path, cycle , state, path function, point function.
	4th	Define thermodynamic processes, path, cycle , state, path function, point function.
3RD(OCT-2021)	1st	Thermodynamic Equilibrium.
	2nd	Thermodynamic Equilibrium.
	3rd	Quasi-static Process.
	4th	Quasi-static Process.
4TH(OCT-2021)	1st	Conceptual explanation of energy and its sources
	2nd	Work , heat and comparison between the two.
	3rd	Mechanical Equivalent of Heat.
	4th	Work transfer, Displacement work
1ST(NOV-2021)	1st	State & explain Zeroth law of thermodynamics.
	2nd	State & explain Zeroth law of thermodynamics.
	3rd	State & explain First law of thermodynamics.
	4th	State & explain First law of thermodynamics.
2ND(NOV-2021)	1st	Limitations of First law of thermodynamics
	2nd	Application of First law of Thermodynamics (steady flow energy equation and its application to turbine and compressor)

2nd(Dec-2020)	4th	Isobaric, Isentropic and polytrophic process)
	1st	Isobaric, Isentropic and polytrophic process)
	2nd	Solve simple problems on above.
	3rd	Solve simple problems on above.
3rd(Dec-2020)	4th	Solve simple problems on above.
	1st	Free expansion & throttling process.
	2nd	Free expansion & throttling process.
	3rd	Explain & classify I.C engine.
4th(Dec-2020)	4th	Explain & classify I.C engine.
	1st	&RPM.
	2nd	&RPM.
	3rd	&RPM.
1st(Jan-2021)	4th	Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine.
	1st	Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine.
	2nd	Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine.
	3rd	Differentiate between 2-stroke & 4- stroke engine C.I & S.I engine.
2nd(Jan-2021)	4th	Differentiate between 2-stroke & 4- stroke engine C.I & S.I engine.
	1st	Differentiate between 2-stroke & 4- stroke engine C.I & S.I engine.
	2nd	Carnot cycle
	3rd	Carnot cycle
3rd(Jan-2021)	4th	Carnot cycle
	1st	Otto cycle.
	2nd	Otto cycle.
	3rd	Otto cycle.
4th(Jan-2021)	4th	Diesel cycle.
	1st	Diesel cycle.
	2nd	Diesel cycle.
	3rd	Dual cycle.
1st(Feb-2021)	4th	Dual cycle.
	1st	Dual cycle.
	2nd	Solve simple numerical.

	3rd	Solve simple numerical.
	4th	Solve simple numerical.
2nd(Feb-2021)	1st	Define Fuel.
	2nd	Define Fuel.
	3rd	Types of fuel.
	4th	Types of fuel.
3rd(Feb-2021)	1st	Application of different types of fuel.
	2nd	Application of different types of fuel.
	3rd	Heating values of fuel.
	4th	Heating values of fuel.
4th(Feb-2021)	1st	Heating values of fuel.
	2nd	Quality of I.C engine fuels Octane number, Cetane number.
	3rd	Quality of I.C engine fuels Octane number, Cetane number.
	4th	Quality of I.C engine fuels Octane number, Cetane number.


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 Sr. Lect. Mech.)

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Discipline : Mechanical Engg.	Semester : 4 th	Name of the Teachnig Faculty : Mrs. Monalisha Behera
Subject : Thermal Engineering	No.of days/Per weeks Class Alloted Weeks : 4	SEMESTER FROM DATE:10/03/2022 TO DATE:10/06/2022
Weeks	Class day	Theory
2ND(MARCH-2022)	1st	1 Define mechanical efficiency, Indicated thermal efficiency, Relative Efficiency, brake thermal efficiency overall efficiency
	2nd	Mean effective pressure & specific fuel consumption. 1.2 Define air-fuel ratio & calorific value of fuel.
	3rd	Work out problems to determine efficiencies & specific fuel consumption
	4th	Work out problems to determine efficiencies & specific fuel consumption
3RD(MARCH-2022)	1st	Work out problems to determine efficiencies & specific fuel consumption
	2nd	Work out problems to determine efficiencies & specific fuel consumption
	3rd	Work out problems to determine efficiencies & specific fuel consumption
	4th	Work out problems to determine efficiencies & specific fuel consumption
4TH(MARCH-2022)	1st	Explain functions of compressor & industrial use of compressor air
	2nd	Classify air compressor & principle of operation.
		3 Describe the parts and working principle of reciprocating Air compressor.
	3rd	Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio free air delivered & Volumetric efficiency
	4th	Derive the work done of single stage & two stage compressor with and without clearance.
1ST(APRIL-2022)	1st	Solve simple problems (without clearance only)
	2nd	Solve simple problems (without clearance only)
	3rd	Solve simple problems (without clearance only)
	4th	Solve simple problems (without clearance only)
2ND(APRIL-2022)	1st	Difference between gas & vapours. 3.2 Formation of steam.
	2nd	Representation on P-V, T-S, H-S, & T-H diagram.
	3rd	Representation on P-V, T-S, H-S, & T-H diagram.
	4th	Definition & Properties of Steam.
3RD(APRIL-2022)	1st	Use of steam table & mollier chart for finding unknown properties.
	2nd	Use of steam table & mollier chart for finding unknown properties.

	3rd	Use of steam table & mollier chart for finding unknown properties.
	4th	Use of steam table & mollier chart for finding unknown properties.
4TH(APRIL-2022)	1st	Non flow & flow process of vapour.
	2nd	P-V, T-S & H-S, diagram.
	3rd	Determine the changes in properties & solve simple numerical.
	4th	Determine the changes in properties & solve simple numerical.
1ST(MAY-2022)	1st	Determine the changes in properties & solve simple numerical.
	2nd	Determine the changes in properties & solve simple numerical.
	3rd	Classification & types of Boiler.
	4th	2 Important terms for Boiler.
2ND(MAY-2022)	1st	Comparison between fire tube & Water tube Boiler.
	2nd	Description & working of common boilers (Cochran, Lancashire, Babcock & Wilcox Boiler)
	3rd	Description & working of common boilers (Cochran, Lancashire, Babcock & Wilcox Boiler)
	4th	Description & working of common boilers (Cochran, Lancashire, Babcock & Wilcox Boiler)
3RD(MAY-2022)	1st	Boiler Draught (Forced, induced & balanced)
	2nd	Boiler Draught (Forced, induced & balanced)
	3rd	Boiler mountings & accessories.
	4th	Boiler mountings & accessories.
4TH(MAY-2022)	1st	Carnot cycle with vapour.
	2nd	Carnot cycle with vapour.
	3rd	Derive Work & Efficiency, REPRESENTATION IN P-V, T-S, H-S DIAGRAM, DERIVE WORK AND EFFICIENCY OF THE CYCLE
	4th	Effect of Various end conditions in Rankine cycle
1ST(JUNE-2022)	1st	Reheat cycle & regenerative Cycle.
	2nd	Solve simple numerical on Carnot vapour Cycle & Rankine Cycle.
	3rd	Solve simple numerical on Carnot vapour Cycle & Rankine Cycle.
	4th	Solve simple numerical on Carnot vapour Cycle & Rankine Cycle.
2ND(JUNE-2022)	1st	Modes of Heat Transfer (Conduction, Convection, Radiation)
	2nd	Fourier law of heat conduction and thermal conductivity (k), NEWTON'S LAW OF COOLING
	3rd	4 Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) only statement, no derivation & no numerical problem.
	4th	Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility.

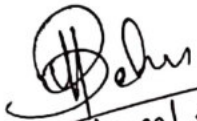
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Discipline : Mechanical Engg.	Semester : 5th	Name of the Teachnig Faculty : Mrs. Monalisha Behera
Subject : REFRIGERATION AND AIR CONDITIONING	No.of days/Per weeks Class Alloted Weeks :4	SEMESTER FROM DATE:1/10/2021 TO DATE:31/01/2022
Weeks	Class day	Theory
1ST(OCT-2021)	1st	Definition of refrigeration and unit of refrigeration.
	2nd	Definition of COP, Refrigerating effect (R.E)
	3rd	Definition of COP, Refrigerating effect (R.E)
	4th	Principle of working of open and closed air system of refrigeration.
2ND(OCT-2021)	1st	Principle of working of open and closed air system of refrigeration.
	2nd	Calculation of COP of Bell-Coleman cycle and numerical on it.
	3rd	schematic diagram of simple vapors compression refrigeration system'
	4th	schematic diagram of simple vapors compression refrigeration system'
3RD(OCT-2021)	1st	Cycle with dry saturated vapors after compression.
	2nd	Cycle with wet vapors after compression.
	3rd	Cycle with superheated vapors after compression.
	4th	Cycle with superheated vapors before compression.
4TH(OCT-2021)	1st	Cycle with sub cooling of refrigerant
	2nd	Representation of above cycle on temperature entropy and pressure enthalpy diagram
	3rd	Representation of above cycle on temperature entropy and pressure enthalpy diagram
	4th	Numerical on above (determination of COP,mass flow)
1ST(NOV-2021)	1st	Simple vapor absorption refrigeration system
	2nd	Practical vapor absorption refrigeration system
	3rd	COP of an ideal vapor absorption refrigeration system
	4th	Numerical on COP.
2ND(NOV-2021)	1st	Numerical on COP.

	2nd	Principle of working and constructional details of reciprocating and rotary compressors.
	3rd	Centrifugal compressor only theory
	4th	Hermetically and semi hermetically sealed compressor.
3RD(NOV-2021)	1st	Principle of working and constructional details of air cooled and water cooled condenser
	2nd	Heat rejection ratio, cooling tower and spray pond
	3rd	Principle of working and constructional details of an evaporator, types of evaporator
	4th	Bare tube coil evaporator, finned evaporator, shell and tube evaporator.
4TH(NOV-2021)	1st	Automatic expansion valve, thermostatic expansion valve
	2nd	Classification of refrigerants, desirable properties of an ideal refrigerant
	3rd	Designation of refrigerant, thermodynamic properties of refrigerant
	4th	Chemical properties of refrigerants.
1ST(DEC-2021)	1st	commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717
	2nd	Substitute for CFC, cold storage and dairy refrigeration
	3rd	ice plant, water cooler
	4th	frost free refrigerator
2ND(DEC-2021)	1st	Psychometric terms
	2nd	Psychometric terms
	3rd	Adiabatic saturation of air by evaporation of water
	4th	Psychometric chart and uses.
3RD(DEC-2021)	1st	Psychometric chart and uses.
	2nd	Psychometric chart and uses.
	3rd	Psychometric processes
	4th	Psychometric processes
4TH(DEC-2021)	1st	Sensible heating and Cooling
	2nd	Cooling and Dehumidification
	3rd	Cooling and Dehumidification, heating and humidification
	4th	Adiabatic cooling with humidification
1ST(JAN-2022)	1st	Adiabatic cooling with humidification, total heating of a cooling process.
	2nd	SHF, BPF, adiabatic mixing
	3rd	Problems on above.
	4th	Problems on above.
2ND(JAN-2022)	1st	Problems on above.
	2nd	Factors affecting comfort air conditioning. .
	3rd	Problems on above.

	4th	Effective temperature and Comfort chart
3RD(JAN-2022)	1st	Equipment used in an air-conditioning.
	2nd	Equipment used in an air-conditioning.
	3rd	Classification of air-conditioning system
	4th	Winter Air Conditioning System
4TH(JAN-2022)	1st	Summer air-conditioning system.
	2nd	Numerical on above
	3rd	Numerical on above
	4th	Numerical on above


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Discipline : Mechanical Engg.	Semester : 6th	Name of the Teachnig Faculty : Mrs. Monalisha Behera
Subject : Power Plant Engineering	No.of days/Per weeks Class Alloted Weeks :4	SEMESTER FROM DATE:10/03/2022 TO DATE:10/06/2022 /
Weeks	Class day	Theory
2ND(MARCH-2022)	1st	Describe sources of energy. 1.2 Explain concept of Central and Captive power station
	2nd	Classify power plants. 1.4 Importance of electrical power in day today life.
	3rd	Overview of method of electrical power generation
	4th	Layout of steam power stations.
3RD(MARCH-2022)	1st	Steam power cycle. Explain Carnot vapour power cycle with P-V, T-s diagram and
	2nd	determine thermal efficiency. 2.3 Explain Rankine cycle with P-V, T-S & H-s diagram and determine thermal efficiency,
	3rd	Work done, work ratio, and specific steam Consumption
	4th	2.4 Solve Simple Problems.
4TH(MARCH-2022)	1st	2.4 Solve Simple Problems.
	2nd	2.4 Solve Simple Problems.
	3rd	List of thermal power stations in the state with their capacities. 2.6 Boiler Accessories: Operation of Air pre heater, Operation of Economiser, Operation
	4th	Electrostatic precipitator and Operation of super heater. Need of boiler mountings
1ST(APRIL-2022)	1st	operation of boiler, Draught System(Natural/Forced/balanced Draught Sysstem)
	2nd	advantages & disadvantages. 2.8 Steam prime movers: Advantages & disadvantages of steam turbine, Elements of steam turbine, governing of steam turbine. Performance of steam turbine: Explain Thermal
	3rd	advantages & disadvantages. 2.8 Steam prime movers: Advantages & disadvantages of steam turbine, Elements of steam turbine, governing of steam turbine. Performance of steam turbine: Explain Thermal
	4th	advantages & disadvantages. 2.8 Steam prime movers: Advantages & disadvantages of steam turbine, Elements of steam turbine, governing of steam turbine. Performance of steam turbine: Explain Thermal

2ND(APRIL-2022)	1st	advantages & disadvantages. 2.8 Steam prime movers: Advantages & disadvantages of steam turbine, Elements of steam turbine, governing of steam turbine. Performance of steam turbine: Explain Thermal
	2nd	advantages & disadvantages. 2.8 Steam prime movers: Advantages & disadvantages of steam turbine, Elements of steam turbine, governing of steam turbine. Performance of steam turbine: Explain Thermal
	3rd	efficiency, Stage efficiency and Gross efficiency. 2.9 Steam condenser: Function of condenser, Classification of condenser. function of condenser auxiliaries such as hot well, condenser extraction pump, air extraction pump, and
	4th	efficiency, Stage efficiency and Gross efficiency. 2.9 Steam condenser: Function of condenser, Classification of condenser. function of condenser auxiliaries such as hot well, condenser extraction pump, air extraction pump, and
3RD(APRIL-2022)	1st	efficiency, Stage efficiency and Gross efficiency. 2.9 Steam condenser: Function of condenser, Classification of condenser. function of condenser auxiliaries such as hot well, condenser extraction pump, air extraction pump, and
	2nd	circulating pump. 2.10 Cooling Tower: Function and types of cooling tower, and spray ponds
	3rd	2.11 Selection of site for thermal power stations.
	4th	1 Classify nuclear fuel (Fissile & fertile material)
4TH(APRIL-2022)	1st	Explain fusion and fission reaction. 3.3 Explain working of nuclear power plants with block diagram
	2nd	Explain the working and construction of nuclear reactor .
	3rd	Compare the nuclear and thermal plants.
	4th	Explain the disposal of nuclear waste.
1ST(MAY-2022)	1st	Selection of site for nuclear power stations,list of Nuclear power station
	2nd	State the advantages and disadvantages of diesel electric power stati
	3rd	Explain briefly different systems of diesel electric power stations:
	4th	Fuel storage and fuel supply system, Fuel injection system, Air supply system, Exhaust system, cooling system, Lubrication system, starting system, governing
2ND(MAY-2022)	1st	Fuel storage and fuel supply system, Fuel injection system, Air supply system, Exhaust system, cooling system, Lubrication system, starting system, governing

	2nd	Fuel storage and fuel supply system, Fuel injection system, Air supply system, Exhaust system, cooling system, Lubrication system, starting system, governing
	3rd	Fuel storage and fuel supply system, Fuel injection system, Air supply system, Exhaust system, cooling system, Lubrication system, starting system, governing
	4th	Fuel storage and fuel supply system, Fuel injection system, Air supply system, Exhaust system, cooling system, Lubrication system, starting system, governing
3RD(MAY-2022)	1st	3 Selection of site for diesel electric power stations
	2nd	Performance and thermal efficiency of diesel electric power stations.
	3rd	Performance and thermal efficiency of diesel electric power stations.
	4th	State advantages and disadvantages of hydroelectric power plant
4TH(MAY-2022)	1st	Classify and explain the general arrangement of storage type hydroelectric project and explain its operation
	2nd	Classify and explain the general arrangement of storage type hydroelectric project and explain its operation
	3rd	Classify and explain the general arrangement of storage type hydroelectric project and explain its operation
	4th	Selection of site of hydel power plant.
1ST(JUNE-2022)	1st	List of hydro power stations with their capacities and number of units in the state
	2nd	Types of turbines and generation used.
	3rd	Types of turbines and generation used.
	4th	6 Simple problems.
2ND(JUNE-2022)	1st	6 Simple problems.
	2nd	6 Simple problems.
	3rd	6 Simple problems.
	4th	6 Simple problems.


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LESSON PLAN

Discipline : Mechanical Engg.	Semester : 4th	Name of the Teaching Faculty : Surendra Kumar Taral	
Subject : Theory of Machines & Measurement Lab.	No. of days/Per weeks Class Alloted Weeks : 4	Semester from date : 10.03.2022	To Date : 16.06.2021 No. of Weeks : 15
Weeks	Class day	Practical	
1st	1st	Determination of centrifugal force of a governor (Hart Nell / Watt/Porter).	
	2nd	Determination of centrifugal force of a governor (Hart Nell / Watt/Porter).	
2nd	1st	Determination of centrifugal force of a governor (Hart Nell / Watt/Porter).	
	2nd	Study & demonstration of static balancing apparatus.	
3rd	1st	Study & demonstration of static balancing apparatus.	
	2nd	Study & demonstration of static balancing apparatus.	
4th	1st	Study & demonstration of Journal bearing apparatus	
	2nd	Study & demonstration of Journal bearing apparatus	
5th	1st	Study & demonstration of Journal bearing apparatus	
	2nd	Study of different types of Cam and followers.	
6th	1st	Study of different types of Cam and followers.	
	2nd	Study of different types of Cam and followers.	
7th	1st	Study & demonstration of epicyclic gear train	
	2nd	Study & demonstration of epicyclic gear train	
8th	1st	Study & demonstration of epicyclic gear train	
	2nd	Determination of the thickness of ground M.S flat to an accuracy of 0.02mm using Vernier Calliper	
9th	1st	Determination of the thickness of ground M.S flat to an accuracy of 0.02mm using Vernier Calliper	
	2nd	Determination of the thickness of ground M.S flat to an accuracy of 0.02mm using Vernier Calliper	
10th	1st	Determination of diameter of a cylindrical component to an accuracy of 0.01mm using micrometer.	
	2nd	Determination of diameter of a cylindrical component to an accuracy of 0.01mm using micrometer.	
11th	1st	Determination of diameter of a cylindrical component to an accuracy of 0.01mm using micrometer.	
	2nd	Determine the heights of gauge blocks or parallel bars to accuracy of 0.02mm using Vernier height gauge.	
12th	1st	Determine the heights of gauge blocks or parallel bars to accuracy of 0.02mm using Vernier height gauge.	
	2nd	Determine the heights of gauge blocks or parallel bars to accuracy of 0.02mm using Vernier height gauge.	
13th	1st	Determine the thickness of ground MS plates using slip gauges.	
	2nd	Determine the thickness of ground MS plates using slip gauges.	
14th	1st	Determine the thickness of ground MS plates using slip gauges.	
	2nd	Determination of angel of Machined surfaces of components using sin bar with slip gauges.	
15th	1st	Determination of angel of Machined surfaces of components using sin bar with slip gauges.	

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	2nd	Determination of angel of Machined surfaces of components using sin bar with slip gauges.
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LESSON PLAN

Discipline : Mechanical Engrg.	Semester : 4th	Name of the Teaching Faculty : Surendra Kumar Tarai	
Subject : MECHANICAL ENGINEERING LABORATORY- II	No. of days/Per weeks Class Alloted Weeks : 6	Semester from date : 10.03.2022	To Date : 16.06.2022 No. of Weeks : 15
Weeks	Class day	Practical	
1st	1st	Study of 2-S, 4-S petrol & diesel engine models	
	2nd	Study of 2-S, 4-S petrol & diesel engine models	
2nd	1st	Study of 2-S, 4-S petrol & diesel engine models	
	2nd	Determine the brake thermal efficiency of single cylinder petrol engine	
3rd	1st	Determine the brake thermal efficiency of single cylinder petrol engine	
	2nd	Determine the brake thermal efficiency of single cylinder petrol engine	
4th	1st	Determine the brake thermal efficiency of single cylinder diesel engine.	
	2nd	Determine the brake thermal efficiency of single cylinder diesel engine.	
5th	1st	Determine the brake thermal efficiency of single cylinder diesel engine.	
	2nd	Determine the B.H.P, I.H.P BSFC of a multi cylinder engine by Morse test.	
6th	1st	Determine the B.H.P, I.H.P BSFC of a multi cylinder engine by Morse test.	
	2nd	Determine the B.H.P, I.H.P BSFC of a multi cylinder engine by Morse test.	
7th	1st	Determine the mechanical efficiency of an air Compressor	
	2nd	Determine the mechanical efficiency of an air Compressor	
8th	1st	Determine the mechanical efficiency of an air Compressor	
	2nd	Study of pressure measuring devices (manometer, Bourdon tube pressure gauge)	
9th	1st	Study of pressure measuring devices (manometer, Bourdon tube pressure gauge)	
	2nd	Study of pressure measuring devices (manometer, Bourdon tube pressure gauge)	
10th	1st	Verification of Bernoulli's theorem	
	2nd	Verification of Bernoulli's theorem	
11th	1st	Verification of Bernoulli's theorem	
	2nd	Determination of Cd from venturimeter	
12th	1st	Determination of Cd from venturimeter	
	2nd	Determination of Cd from venturimeter	
13th	1st	Determination of Cc, Cv, Cd from orifice meter	
	2nd	Determination of Cc, Cv, Cd from orifice meter	
14th	1st	Determination of Cc, Cv, Cd from orifice meter	
	2nd	Determine of Darcy's coefficient from flow through pipe	
15th	1st	Determine of Darcy's coefficient from flow through pipe	
	2nd	Determine of Darcy's coefficient from flow through pipe	

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LESSION PLAN

Discipline : Mechanical Engg.	Semester : 6th	Name of the Teaching Faculty : Surendra Kumar Tarai
Subject : Power Station Engg.Lab	No.of days/Per weeks Class Alloted Weeks :6	Semester from date : 10.03.2022 To Date : 16.06.2022 No.of Weeks : 15
Weeks	Class day	Practical
1st	1st	To study the modern steam power plant with model.
	2nd	To study the modern steam power plant with model.
2nd	1st	To study the modern steam power plant with model.
	2nd	To determine the various efficiencies of steam turbine.
3rd	1st	To determine the various efficiencies of steam turbine.
	2nd	To determine the various efficiencies of steam turbine.
4th	1st	To study the cooling tower
	2nd	To study the cooling tower
5th	1st	To study the cooling tower
	2nd	Study of jet condenser.
6th	1st	Study of jet condenser.
	2nd	Study of jet condenser.
7th	1st	Study of jet condenser.
	2nd	Study of De-lavel turbine
8th	1st	Study of De-lavel turbine
	2nd	Study of De-lavel turbine
9th	1st	To study the spring loaded safety valve
	2nd	To study the spring loaded safety valve
10th	1st	To study the following steam generators (boilers)models (Lancashire boiler)
	2nd	To study the following steam generators (boilers)models (Lancashire boiler)
11th	1st	To study the following steam generators (boilers)models (Lancashire boiler)
	2nd	To study the following steam generators (boilers)models (Cornish boiler)
12th	1st	To study the following steam generators (boilers)models (Cornish boiler)
	2nd	To study the following steam generators (boilers)models (Cornish boiler)
13th	1st	To study the following steam generators (boilers)models (Babcock & Wilcox Boiler.)
	2nd	To study the following steam generators (boilers)models (Babcock & Wilcox
14th	1st	To study the following steam generators (boilers)models (Babcock & Wilcox

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LESSON PLAN

Discipline : Mechanical Engg.	Semester : 6th	Name of the Teaching Faculty : Surendra Kumar Tarai
Subject : Automobile Engg.Lab	No.of days/Per weeks Class Alloted Weeks	Semester from date : 10.03.2022 To Date : 16.06.2022 No.of Weeks : 15
Weeks	Class day	Practical
1st	1st	Study of Automobile chassis.
	2nd	Study of Automobile chassis.
2nd	1st	Study of Automobile chassis.
	2nd	Study of Automobile chassis.
3rd	1st	Study the differential mechanism of the Tractor
	2nd	Study the differential mechanism of the Tractor
4th	1st	Study the differential mechanism of the Tractor
	2nd	Study the hydraulic braking system of automobile.
5th	1st	Study the hydraulic braking system of automobile.
	2nd	Study the hydraulic braking system of automobile.
6th	1st	Study Study the cut section model of carburetor solex type and maruti car
	2nd	Study Study the cut section model of carburetor solex type and maruti car type.
7th	1st	Study Study the cut section model of carburetor solex type and maruti car type.
	2nd	Study Study the cut section model of carburetor solex type and maruti car type.
8th	1st	Study the fuel pump cut section model.
	2nd	Study the fuel pump cut section model.
9th	1st	Study the fuel pump cut section model.
	2nd	Study the fuel pump cut section model.
10th	1st	Study the fuel pump cut section model.
	2nd	Study the actual cut section of gear box.
11th	1st	Study the actual cut section of gear box.
	2nd	Study the actual cut section of gear box.
12th	1st	Study the actual cut section of gear box.
	2nd	Study of actual car engine
13th	1st	Study of actual car engine
	2nd	Study of actual car engine
14th	1st	Study of actual car engine
	2nd	Study of actual car engine
15th	1st	Checking Record.

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