

Academic Lesson Plan for Fluid Mechanics(Summer-2024)		
Discipline: Mechanical Engineering	Semester: 4th	Name of Faculty: Abhoy Mohanta
Subject:Fluid Mechanics	No. of days/per week Class Allotted: 4	Semester from: 16/01/2024
		No. of weeks:15
Week	Class Day	Theory Topics
1st	1st	Properties of Fluid Define fluid
	2nd	Description of fluid properties like Density,
	3rd	Specific weight, specific gravity,
	4th	Specific volume and solve simple problems
2nd	1st	Definitions and Units of Dynamic viscosity,
	2nd	Definitions of Dynamic viscosity,
	3rd	kinematic viscosity,
	4th	surface tension Capillary phenomenon
3rd	1st	Fluid Pressure and its measurements Definitions and units of fluid pressure, pressure intensity and pressure head.
	2nd	Statement of Pascal's Law.
	3rd	Concept of atmospheric pressure, gauge pressure,
	4th	vacuum pressure and absolute pressure
	1st	Pressure measuring instruments

4th	2nd	Manometers (Simple and Differential)
	3rd	Bourdon tube pressure gauge(Simple Numerical)
	4th	Solve simple problems on Manometer.
5th	1st	Hydrostatics Types of fluid flow
	2nd	Continuity equation
	3rd	Continuity equation(Statement and proof for one dimensional flow)
	4th	Bernoulli's theorem(Statement and proof)
6th	1st	Applications and limitations of Bernoulli's theorem (Venturimeter, pitot tube)
	2nd	Solve simple problems
	3rd	Solve simple problems
	4th	Solve simple problems
7th	1st	Orifices, notches & weirs
	2nd	Flow through orifice
	3rd	Orifices coefficient & the relation between the orifice coefficients
	4th	Classifications of notches & weirs
8th	1st	Discharge over a rectangular notch or weir
	2nd	Discharge over a triangular notch or weir
	3rd	Simple problems on above
	4th	Flow through pipe Definition of pipe.
9th	1st	Loss of energy in pipes.
	2nd	Head loss due to friction: Darcy's
	3rd	Chezy's formula (Expression only)
	4th	Solve Problems using Darcy's and Chezy's formula.

10th	1st	Solve Problems using Darcy's and Chezy's formula.
	2nd	Solve Problems using Darcy's and Chezy's formula.
	3rd	Solve Problems using Darcy's and Chezy's formula.
	4th	Hydraulic gradient and total gradient line
11th	1st	Impact of jets fixed plate
	2nd	Impact of jet on moving vertical flat plates Impact of jet on fixed and moving vertical flat plates
	3rd	Impact of jet on moving vertical flat plates Impact of jet on fixed and moving vertical flat plates
	4th	Impact of jet on moving vertical flat plates Impact of jet on fixed and moving vertical flat plates
12th	1st	Derivation of work done on series of vanes
	2nd	Derivation of work done on series of vanes
	3rd	Derivation of work done on series of vanes and condition for maximum efficiency.
	4th	Derivation of work done on series of vanes and condition for maximum efficiency.
13th	1st	Impact of jet on moving curved vanes,
	2nd	Impact of jet on moving curved vanes,
	3rd	Impact of jet illustration using velocity triangles,
	4th	Impact of jet on moving curved vanes, illustration using velocity triangles,
14th	1st	Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done,
	2nd	Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency.
	3rd	Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency.
	4th	Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency.
15th	1st	Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency.
	2nd	Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency.
	3rd	Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency.
	4th	Impact of jet on moving curved vanes, illustration using velocity triangles, derivation of work done, efficiency.

Abhoy Mohanta

Academic Lesson Plan for INDUSTRIAL ENGINEERING & MANAGEMENT(Summer-2024)

Discipline: Mechanical Engineering	Semester: 6th	Name of Faculty: Abhoy Mohanta
Subject:INDUSTRIAL ENGINEERING & MANAGEMENT	No. of days/per week Class Allotted: 4	Semester from: 16/01/2024
		No. of weeks:15
Week	Class Day	Theory Topics
1st	1st	1.3 Describe the objective & principles of plant layout
	2nd	1.4 Explain process, product & combination layout
	3rd	1.5 Techniques of improve layout
	4th	1.6 Principles of material handling equipment
2nd	1st	1.7 Plant, break down, preventive, scheduled maintenance & its importance, Doubt clearing class on above chapter
	2nd	2.0 Operations Research
	3rd	2.1 Introduction to operations research
	4th	2.2 Applications of operation research
3rd	1st	2.3 Define linear programming problem
	2nd	2.4 Evaluation of project completion time by critical path method & PERT
	3rd	2.5 Explain distinct features of PERT w.r.t CPM
	4th	2.6 Simple Problems, Doubt clearing class on above chapter
4th	1st	3.0 Inventory Control
	2nd	3.1 Classification of inventory
	3rd	3.2 Objective of inventory control
	4th	3.3 Describe the functions of inventories
5th	1st	3.4 Benefits of inventory control
	2nd	3.5 Costs associated with inventory
	3rd	3.6 Terminology in inventory control
	4th	3.7 Explain & derive economic order quantity for basic model,internal examination
	1st	3.8 Define & explain ABC analysis,revision on internal exam question

6th	2nd	3.9 Solve numericals, Doubt clearing class on above chapter
	3rd	4.0 Inspection & Quality Control
	4th	4.1 Define inspection & quality control
7th	1st	4.2 Describe planning of inspection
	2nd	4.3 Describe types of inspection
	3rd	4.4 Advantages & Disadvantages of quality control
	4th	4.5 Study of factors influencing the quality of manufacture
8th	1st	4.6 Explain the concept of statistical quality control, control charts (X,R,P&C-charts
	2nd	4.7 Methods of attributes
	3rd	4.8 Concept of ISO 9001-2008
	4th	4.9.1 Quality management system, registration/certification procedure
9th	1st	4.9.2 Benefits of ISO to the organisation
	2nd	4.9.3 JIT, Six sigma, 7S, Lean manufacturing
	3rd	4.9.4 Solve related problems, Doubt clearing class on above chapter
	4th	5.0 Production Planning & Control
10th	1st	5.1 Introduction
	2nd	5.2 Major functions of production planning & control
	3rd	5.3 Methods of forecasting
	4th	5.3.1 Routing, Scheduling, Dispatching, Controlling
11th	1st	5.4 Types of production
	2nd	5.4.1 Mass production
	3rd	5.4.2 Batch production
	4th	5.4.3 Job order production
12th	1st	5.5 Principles of product & process planning , Doubt clearing class on above chapter
	2nd	5.0 Production Planning & Control
	3rd	5.0 Production Planning & Control
	4th	5.0 Production Planning & Control

13th	1st	5.1 Introduction
	2nd	5.2 Major functions of production planning & control
	3rd	5.3 Methods of forecasting
	4th	5.3.1 Routing, Scheduling, Dispatching, Controlling
14th	1st	5.4 Types of production
	2nd	5.4.1 Mass production
	3rd	5.4.2 Batch production
	4th	5.4.3 Job order production
15th	1st	5.5 Principles of product & process planning , Doubt clearing class on above chapter
	2nd	5.5 Principles of product & process planning , Doubt clearing class on above chapter
	3rd	5.5 Principles of product & process planning , Doubt clearing class on above chapter
	4th	5.5 Principles of product & process planning , Doubt clearing class on above chapter

Abhay Mohanta