

**GOVERNMENT POLYTECHNIC, NUAPADA**  
**Academic Lesson Plan for Summer semester- 2025-26**

Name of the teaching faculty: Sri Siddhant Singh Babu  
 Semester: 6th  
 No. of periods per week: 4  
 End semester exam: 80  
 Total Marks : 100

Department: Mechanical Engineering  
 Subject: Industrial Engineering & Management  
 Total Periods: 60  
 Class test: 20

Sl. No.	Week	Period	Topic to be covered
1.	1 <sup>st</sup>	1 <sup>st</sup>	About Industrial Engineering & Management
2.		2 <sup>nd</sup>	Selection of Site of Industry.
3.		3 <sup>rd</sup>	Define plant layout.
4.		4 <sup>th</sup>	Describe the objective and principles of plant layout.
5.	2 <sup>nd</sup>	1 <sup>st</sup>	Explain Process Layout, Product Layout and Combination Layout.
6.		2 <sup>nd</sup>	Do
7.		3 <sup>rd</sup>	Techniques to improve layout.
8.		4 <sup>th</sup>	Principles of material handling equipment.
9.	3 <sup>rd</sup>	1 <sup>st</sup>	Describe Plant maintenance.
10.		2 <sup>nd</sup>	Do
11.		3 <sup>rd</sup>	Introduction to Operations Research and its applications.
12.		4 <sup>th</sup>	Do
13.	4 <sup>th</sup>	1 <sup>st</sup>	Define LPP
14.		2 <sup>nd</sup>	Solution of L.P.P. by graphical method.
15.		3 <sup>rd</sup>	Evaluation of Project completion time by Critical Path Method and PERT
16.		4 <sup>th</sup>	Do
17.	5 <sup>th</sup>	1 <sup>st</sup>	Do
18.		2 <sup>nd</sup>	Explain about features of PERT W.R.T CPM
19.		3 <sup>rd</sup>	Solve some numerical
20.		4 <sup>th</sup>	DO
21.	6 <sup>th</sup>	1 <sup>st</sup>	Classification of inventory.
22.		2 <sup>nd</sup>	Objective of inventory control.
23.		3 <sup>rd</sup>	Describe the functions of inventories.
24.		4 <sup>th</sup>	Benefits of inventory control.
25.	7 <sup>th</sup>	1 <sup>st</sup>	Costs associated with inventory
26.		2 <sup>nd</sup>	Terminology in inventory control
27.		3 <sup>rd</sup>	Derive economic order quantity for Basic model.
28.		4 <sup>th</sup>	Solve numerical.
29.	8 <sup>th</sup>	1 <sup>st</sup>	Define and Explain ABC analysis.
30.		2 <sup>nd</sup>	DO
31.		3 <sup>rd</sup>	Define Inspection and Quality control.
32.		4 <sup>th</sup>	Describe planning of inspection.
33.	9 <sup>th</sup>	1 <sup>st</sup>	Describe types of inspection.
34.		2 <sup>nd</sup>	Advantages and disadvantages of quality control.
35.		3 <sup>rd</sup>	Study of factors influencing the quality of manufacture.
36.		4 <sup>th</sup>	Explain the Concept of statistical quality control,
37.	10 <sup>th</sup>	1 <sup>st</sup>	Control charts((X, R,P and C - charts).
38.		2 <sup>nd</sup>	Methods of attributes.
39.		3 <sup>rd</sup>	Concept of ISO 9001-2008.
40.		4 <sup>th</sup>	Quality management system,
41.	11 <sup>th</sup>	1 <sup>st</sup>	Registration /certification procedure.
42.		2 <sup>nd</sup>	Benefits of ISO to the organization.

43.		3 <sup>rd</sup>	JIT, Six sigma, 7S, Lean manufacturing
44.		4 <sup>th</sup>	DO
45.	12 <sup>th</sup>	1 <sup>st</sup>	Solve related problems.
46.		2 <sup>nd</sup>	Introduction
47.		3 <sup>rd</sup>	Major functions of production planning and control
48.		4 <sup>th</sup>	DO
49.	13 <sup>th</sup>	1 <sup>st</sup>	Methods of forecasting
50.		2 <sup>nd</sup>	DO
51.		3 <sup>rd</sup>	Routing
52.		4 <sup>th</sup>	Scheduling
53.	14 <sup>th</sup>	1 <sup>st</sup>	Dispatching
54.		2 <sup>nd</sup>	Controlling
55.		3 <sup>rd</sup>	Types of production
56.		4 <sup>th</sup>	Mass production
57.	15 <sup>th</sup>	1 <sup>st</sup>	Batch production
58.		2 <sup>nd</sup>	Job order production
59.		3 <sup>rd</sup>	Principles of product and process planning.
60.		4 <sup>th</sup>	Revision

The lesson plan prepared by the concerned faculty

*Siddhant Singh Babu*  
Siddhant Singh Babu

GF, MECHANICAL DEPARTMENT

*Udaya Kishor*  
HOD, Mechanical Engg

**GOVERNMENT POLYTECHNIC, NUAPADA**  
**Academic Lesson Plan for Summer semester- 2025-26**

Name of the teaching faculty: Sri Siddhant Singh Babu  
 Semester: 6th  
 No. of periods per week: 4  
 End semester exam: 80  
 Total Marks : 100

Department: Mechanical Engineering  
 Subject: Automobile Engg. & Hybrid Vehicles  
 Total Periods: 60  
 Class test: 20

Sl. No.	Week	Period	Topic to be covered
1.	1 <sup>st</sup>	1 <sup>st</sup>	Automobiles: Definition, need and classification:
2.		2 <sup>nd</sup>	Layout of automobile chassis
3.		3 <sup>rd</sup>	with major components (Line diagram)
4.		4 <sup>th</sup>	Clutch System: Need, Types (Single & Multiple)
5.	2 <sup>nd</sup>	1 <sup>st</sup>	Working principle with sketch
6.		2 <sup>nd</sup>	Gear Box: Purpose of gear box, Construction
7.		3 <sup>rd</sup>	working of a 4 speed gear box
8.		4 <sup>th</sup>	Concept of automatic gear changing mechanisms
9.	3 <sup>rd</sup>	1 <sup>st</sup>	Do
10.		2 <sup>nd</sup>	Propeller shaft: Constructional features
11.		3 <sup>rd</sup>	Differential: Need, Types
12.		4 <sup>th</sup>	Working principle
13.	4 <sup>th</sup>	1 <sup>st</sup>	Braking systems in automobiles: Need and types
14.		2 <sup>nd</sup>	Mechanical Brake
15.		3 <sup>rd</sup>	Hydraulic Brake
16.		4 <sup>th</sup>	Air Brake, Air assisted Hydraulic Brake
17.	5 <sup>th</sup>	1 <sup>st</sup>	Vacuum Brake
18.		2 <sup>nd</sup>	Describe the Battery ignition
19.		3 <sup>rd</sup>	Magnet ignition system
20.		4 <sup>th</sup>	Spark plugs: Purpose, construction and specifications
21.	6 <sup>th</sup>	1 <sup>st</sup>	State the common ignition troubles and its remedies
22.		2 <sup>nd</sup>	Description of the conventional suspension system for Rear and Front axle
23.		3 <sup>rd</sup>	Do
24.		4 <sup>th</sup>	Description of independent suspension system used in cars
25.	7 <sup>th</sup>	1 <sup>st</sup>	coil spring and tensionbars
26.		2 <sup>nd</sup>	Constructional features and working of a telescopic shock absorber
27.		3 <sup>rd</sup>	Do
28.		4 <sup>th</sup>	Engine cooling: Need and classification
29.	8 <sup>th</sup>	1 <sup>st</sup>	Describe defects of cooling and their remedial measures
30.		2 <sup>nd</sup>	Do
31.		3 <sup>rd</sup>	Describe the Function of lubrication
32.		4 <sup>th</sup>	Describe the lubrication System of I.C. engine
33.	9 <sup>th</sup>	1 <sup>st</sup>	Do
34.		2 <sup>nd</sup>	Do
35.		3 <sup>rd</sup>	Describe Air fuel ratio
36.		4 <sup>th</sup>	Do
37.	10 <sup>th</sup>	1 <sup>st</sup>	Describe Carburetion process for Petrol Engine
38.		2 <sup>nd</sup>	Do
39.		3 <sup>rd</sup>	Describe Multipoint fuel injection system for Petrol Engine
40.		4 <sup>th</sup>	Do
41.	11 <sup>th</sup>	1 <sup>st</sup>	working principle of fuel injection system for multi cylinder Engine
42.		2 <sup>nd</sup>	Filter for Diesel engine

43.		3 <sup>rd</sup>	working principle of Fuel feed pump
44.		4 <sup>th</sup>	Fuel Injector for Diesel engine
45.	12 <sup>th</sup>	1 <sup>st</sup>	ELECTRIC AND HYBRID VEHICLES
46.		2 <sup>nd</sup>	Introduction, Social and Environmental importance of Hybrid
47.		3 <sup>rd</sup>	Description of Electric Vehicles
48.		4 <sup>th</sup>	operational advantages, present performance
49.	13 <sup>th</sup>	1 <sup>st</sup>	applications of Electric Vehicles
50.		2 <sup>nd</sup>	Battery for Electric Vehicles
51.		3 <sup>rd</sup>	Do
52.		4 <sup>th</sup>	Battery for Electric Vehicles, Battery types and fuel cells.
53.	14 <sup>th</sup>	1 <sup>st</sup>	Do
54.		2 <sup>nd</sup>	Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel
55.		3 <sup>rd</sup>	Do
56.		4 <sup>th</sup>	Do
57.	15 <sup>th</sup>	1 <sup>st</sup>	Series configurations; Drive train
58.		2 <sup>nd</sup>	Do
59.		3 <sup>rd</sup>	Solar powered vehicles
60.		4 <sup>th</sup>	Do

The lesson plan prepared by the concerned faculty

*Siddhant Singh Babu*  
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GF, MECHANICAL DEPARTMENT

*Uday Mehta*  
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**Academic Lesson Plan for Summer Semester 2025-26**

Name of the teaching faculty: Er. Siddhant Singh Babu  
 Semester: 6th  
 No. of periods per week: 4  
 End semester exam: 80  
 Total Marks : 100

Department: Mechanical Engineering  
 Subject: Power Station Engineering  
 Total Periods: 60  
 Class test: 20

Sl. No.	Week	Period	Topic to be covered
1.	1 <sup>st</sup>	1 <sup>st</sup>	About Power Station Engineering
2.		2 <sup>nd</sup>	Describe sources of energy.
3.		3 <sup>rd</sup>	Do
4.		4 <sup>th</sup>	Explain concept of Central and Captive power station.
5.	2 <sup>nd</sup>	1 <sup>st</sup>	Classify power plants.
6.		2 <sup>nd</sup>	Layout of steam power stations.
7.		3 <sup>rd</sup>	Explain about carnotvapour power cycle
8.		4 <sup>th</sup>	Do
9.	3 <sup>rd</sup>	1 <sup>st</sup>	Explain about Rankine vapour power cycle
10.		2 <sup>nd</sup>	Do
11.		3 <sup>rd</sup>	Do
12.		4 <sup>th</sup>	Solved Simple Problems.
13.	4 <sup>th</sup>	1 <sup>st</sup>	Do
14.		2 <sup>nd</sup>	Do
15.		3 <sup>rd</sup>	List of thermal power stations in the state with their capacities.
16.		4 <sup>th</sup>	About Boiler Accessories
17.	5 <sup>th</sup>	1 <sup>st</sup>	Do
18.		2 <sup>nd</sup>	Do
19.		3 <sup>rd</sup>	Do
20.		4 <sup>th</sup>	Explain Boiler Draught System
21.	6 <sup>th</sup>	1 <sup>st</sup>	About Steam Prime Mover
22.		2 <sup>nd</sup>	Do
23.		3 <sup>rd</sup>	About Condenser
24.		4 <sup>th</sup>	Do
25.	7 <sup>th</sup>	1 <sup>st</sup>	Selection of site for thermal power stations.
26.		2 <sup>nd</sup>	About Nuclear Power Station
27.		3 <sup>rd</sup>	Classify nuclear fuel
28.		4 <sup>th</sup>	Explain fusion and fission reaction.
29.	8 <sup>th</sup>	1 <sup>st</sup>	Explain working of nuclear power plants with block diagram
30.		2 <sup>nd</sup>	Explain the working and construction of nuclear reactor
31.		3 <sup>rd</sup>	Do
32.		4 <sup>th</sup>	Do
33.	9 <sup>th</sup>	1 <sup>st</sup>	Compare the nuclear and thermal plants.
34.		2 <sup>nd</sup>	Explain the disposal of nuclear waste
35.		3 <sup>rd</sup>	Selection of site for nuclear power stations & It list of Presnt
36.		4 <sup>th</sup>	About Diesel Electric Power Station
37.	10 <sup>th</sup>	1 <sup>st</sup>	State the advantages and disadvantages of diesel electric power stations.
38.		2 <sup>nd</sup>	Explain briefly different systems of diesel electric power stations
39.		3 <sup>rd</sup>	Do
40.		4 <sup>th</sup>	Do
41.	11 <sup>th</sup>	1 <sup>st</sup>	Do

42.		2 <sup>nd</sup>	Do
43.		3 <sup>rd</sup>	Selection of site for diesel electric power stations.
44.		4 <sup>th</sup>	Performance and thermal efficiency of diesel electric power stations
45.	12 <sup>th</sup>	1 <sup>st</sup>	Do
46.		2 <sup>nd</sup>	About Gas Turbine Power Station
47.		3 <sup>rd</sup>	Selection of site & Fuels for gas turbine stations.
48.		4 <sup>th</sup>	Elements of simple gas turbine power plants
49.	13 <sup>th</sup>	1 <sup>st</sup>	Do
50.		2 <sup>nd</sup>	Merits, demerits and application of gas turbine power plants.
51.		3 <sup>rd</sup>	About Hydel Power Station
52.		4 <sup>th</sup>	State advantages and disadvantages of hydroelectric power plant.
53.	14 <sup>th</sup>	1 <sup>st</sup>	Classification of hydroelectric Power Station
54.		2 <sup>nd</sup>	explain the general arrangement of storage type hydroelectric project.
55.		3 <sup>rd</sup>	explain its operation.
56.		4 <sup>th</sup>	Do
57.	15 <sup>th</sup>	1 <sup>st</sup>	List of hydro power stations with their capacities and number of units in the state.
58.		2 <sup>nd</sup>	Selection of site of hydel power plant.
59.		3 <sup>rd</sup>	Types of turbines and generation used.
60.		4 <sup>th</sup>	Solve simple problems

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GF, MECHANICAL DEPARTMENT

*Udaya Mehta*  
HOD, Mechanical Engg.

**GOVERNMENT POLYTECHNIC, NUAPADA**  
Academic Lesson Plan for Summer Semester- 2025-26

Name of the teaching faculty: Er. Siddhant Singh Babu Department: Mechanical Engg.  
Semester: 4th Subject: TH:2- THERMAL ENGINEERING- II  
No. of periods per week: 3 Total Periods: 45  
End semester exam: 70 Progressive Assessment: 30  
Total Marks : 100

Sl. No.	Week	Period	Topic to be covered
1.	1 <sup>st</sup>	1 <sup>st</sup>	<b>Gas Turbines:</b> Air-standard Brayton cycle. Description with p-v and T-S diagrams
2.		2 <sup>nd</sup>	Gas turbines Classification: open cycle gas turbines and closed cycle gas turbines;
3.		3 <sup>rd</sup>	Comparison of gas turbine with reciprocating I.C. engines and steam turbines.
4.	2 <sup>nd</sup>	1 <sup>st</sup>	Applications and limitations of gas turbines
5.		2 <sup>nd</sup>	General lay-out of Open cycle constant pressure gas turbine
6.		3 <sup>rd</sup>	P-V and T-S diagrams and working General lay-out of Closed cycle gas turbine, P-V and T-S diagrams and working.
7.	3 <sup>rd</sup>	1 <sup>st</sup>	<b>Jet Propulsion:</b> Principle of jet propulsion; Fuels used for jet propulsion
8.		2 <sup>nd</sup>	Applications of jet propulsion; Working of a turbojet engine; Principle of Ram effect
9.		3 <sup>rd</sup>	Working of a Ram jet engine; Principle of Rocket propulsion, Working principle of a rocket engine;
10.	4 <sup>th</sup>	1 <sup>st</sup>	Applications of rocket propulsion; Comparison of jet and rocket propulsions.
11.		2 <sup>nd</sup>	Properties of Steam: Formation of steam under constant pressure
12.		3 <sup>rd</sup>	Industrial uses of steam; Basic definitions: saturated liquid line, saturated vapor line, liquid region
13.	5 <sup>th</sup>	1 <sup>st</sup>	Vapor region, wet region, superheat region, critical point, saturated liquid, saturated vapor, saturation temperature
14.		2 <sup>nd</sup>	Sensible heat, latent heat, wet steam, dryness fraction, wetness fraction, saturated steam,
15.		3 <sup>rd</sup>	Superheated steam, degree of superheat
16.	6 <sup>rd</sup>	1 <sup>st</sup>	Determination of enthalpy, internal energy, internal latent heat
17.		2 <sup>nd</sup>	Entropy of wet, dry and superheated steam at a given pressure using steam tables
18.		3 <sup>rd</sup>	Mollier chart for the following processes: Isochoric process, Isobaric process, Hyperbolic process
19.	7 <sup>th</sup>	1 <sup>st</sup>	Isothermal process, Isentropic process, Throttling process, Polytropic process; Simple direct problems on the above using tables and charts
20.		2 <sup>nd</sup>	Steam calorimeters: Separating, throttling, Combined Separating and throttling calorimeters – problems
21.		3 <sup>rd</sup>	<b>Steam Generators:</b> Function and use of steam boilers; Classification of steam boilers with examples
22.	8 <sup>th</sup>	1 <sup>st</sup>	Brief explanation with line sketches of Cochran, Babcock and Wilcox Boilers;
23.		2 <sup>nd</sup>	Comparison of water tube and fire tube boilers; Description with line sketches and working of modern high pressure boilers

24.		3 <sup>rd</sup>	Lamont and Benson boilers; Boiler mountings: Pressure gauge, water level indicator, fusible plug, blow down cock, stop valve
25.	9 <sup>th</sup>	1 <sup>st</sup>	Safety valve, (dead weight type, spring loaded type, high pressure and low water safety alarm);
26.		2 <sup>nd</sup>	Boiler accessories: feed pump, economizer, super heater and air preheater; Study of steam traps & separators
27.		3 <sup>rd</sup>	Explanation of the terms: Actual evaporation, equivalent evaporation, factor of evaporation, boiler horse power and boiler efficiency
28.	10 <sup>th</sup>	1 <sup>st</sup>	Formula for the above terms without proof; Simple direct problems on the above; Draught systems (Natural, forced & induced).
29.		2 <sup>nd</sup>	<b>Steam Nozzles:</b> Flow of steam through nozzle
30.		3 <sup>rd</sup>	Velocity of steam at the exit of nozzle in terms of heat drop using analytical method and Mollier chart
31.	11 <sup>th</sup>	1 <sup>st</sup>	do
32.		2 <sup>nd</sup>	Discharge of steam through nozzles
33.		3 <sup>rd</sup>	Critical pressure ratio
34.	12 <sup>th</sup>	1 <sup>st</sup>	Methods of calculation of cross-sectional areas at throat and exit for maximum discharge
35.		2 <sup>nd</sup>	do
36.		3 <sup>rd</sup>	Effect of friction in nozzles and Super saturated flow in nozzles
37.	13 <sup>th</sup>	1 <sup>st</sup>	do
38.		2 <sup>nd</sup>	Working steam jet injector; Simple numerical problems
39.		3 <sup>rd</sup>	<b>Steam Turbines:</b> Classification of steam turbines with examples; Difference between impulse & reaction turbines;
40.	14 <sup>th</sup>	1 <sup>st</sup>	Principle of working of a simple De-lavel turbine with line diagrams-Velocity diagrams;
41.		2 <sup>nd</sup>	Expression for work done, axial thrust, tangential thrust, blade and diagram efficiency, stage efficiency, nozzle efficiency
42.		3 <sup>rd</sup>	Methods of reducing rotor speed; compounding for velocity, for pressure or both pressure and velocity
43.	15 <sup>th</sup>	1 <sup>st</sup>	Working principle with line diagram of a Parson's Reaction turbine-velocity diagrams; Simple problems on single stage impulse turbines (without blade friction)
44.		2 <sup>nd</sup>	Reaction turbine including data on blade height. Bleeding, re-heating and re-heating factors(Problems omitted)
45.		3 <sup>rd</sup>	Governing of steam turbines: Throttle, By-pass & Nozzle control governing

The lesson plan prepared by the concerned faculty

*Siddhant Singh Babu*  
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GF, Mechanical Department

*Uday Melur, HOD Melur*

**GOVERNMENT POLYTECHNIC, NUAPADA**  
**Academic Lesson Plan for Summer Semester- 2025-26**

Name of the teaching faculty: Sri Siddhant Singh Babu    Department: Mechanical Engineering  
Semester: 4th    Subject: Hydraulics & Pneumatics  
No. of periods per week: 3    Total Periods: 45  
End semester exam: 70    Progressive Assessment: 30  
Total Marks: 100

Sl. No.	Week	Period	Topic to be covered
1.	1 <sup>st</sup>	1 <sup>st</sup>	Fluid Power Principles and Hydraulic Pumps - introduction to fluid theory and concept building
2.		2 <sup>nd</sup>	Fluid power systems – Types of fluids Properties
3.		3 <sup>rd</sup>	Advantages and Applications
4.	2 <sup>nd</sup>	1 <sup>st</sup>	Basics of Hydraulics – Pascal's Law
5.		2 <sup>nd</sup>	Introduction to Fluid Power – of fluids and selection
6.		3 <sup>rd</sup>	Principles of flow Friction loss – Work, Power, and Torque- Problems,
7.	3 <sup>rd</sup>	1 <sup>st</sup>	Sources of Hydraulic power: Pumping Theory – Pump Classification – Construction, Working, Design,
8.		2 <sup>nd</sup>	Advantages, Disadvantages, Performance, Selection criteria of pumps – Fixed and Variable displacement pumps – Problems.
9.		3 <sup>rd</sup>	Hydraulic Actuators
10.	4 <sup>th</sup>	1 <sup>st</sup>	Cylinders – Types and construction, Application. Hydraulic cushioning – Rotary, Actuators-Hydraulic motors
11.		2 <sup>nd</sup>	Control Components: Direction Control, Flow control and pressure control valves – Types, Construction, and Operation
12.		3 <sup>rd</sup>	Accessories: Reservoirs, Pressure Switches – Filters –types and selection
13.	5 <sup>th</sup>	1 <sup>st</sup>	Applications – Fluid Power ANSI Symbols – Problems.
14.		2 <sup>nd</sup>	Accumulators, Intensifiers, Industrial hydraulic
15.		3 <sup>rd</sup>	Circuits – Regenerative, Pump Unloading, Double-Pump, Pressure Intensifier,
16.	6 <sup>th</sup>	1 <sup>st</sup>	Air-over oil, Sequence, Reciprocation, Synchronization. Fail-Safe, Speed Control, Deceleration circuits, Sizing of hydraulic systems
17.		2 <sup>nd</sup>	Hydrostatic transmission, Electro-hydraulic circuits
18.		3 <sup>rd</sup>	Servo and Proportional valves
19.	7 <sup>th</sup>	1 <sup>st</sup>	Applications- Mechanical, hydraulic servo systems.
20.		2 <sup>nd</sup>	Properties of air –Air preparation and distribution
21.		3 <sup>rd</sup>	Filters, Regulator, Lubricator, Muffler, Air Control Valves,

22.	8 <sup>th</sup>	1 <sup>st</sup>	Quick Exhaust Valves, Pneumatic actuators, Design of Pneumatic circuit
23.		2 <sup>nd</sup>	Classification- single cylinder and multi-cylinder circuits
24.		3 <sup>rd</sup>	Do
25.	9 <sup>th</sup>	1 <sup>st</sup>	Cascade method-Integration of fringe circuits
26.		2 <sup>nd</sup>	Electro Pneumatic System
27.		3 <sup>rd</sup>	Do
28.	10 <sup>th</sup>	1 <sup>st</sup>	Elements – Ladder diagram
29.		2 <sup>nd</sup>	timer circuits-Problems
30.		3 <sup>rd</sup>	Introduction to fluid and pneumatic logic circuits.
31.	11 <sup>th</sup>	1 <sup>st</sup>	Installation, Selection, Maintenance, Trouble Shooting
32.		2 <sup>nd</sup>	Do
33.		3 <sup>rd</sup>	Remedies in Hydraulic and Pneumatic systems,
34.	12 <sup>th</sup>	1 <sup>st</sup>	Conditioning of hydraulic fluids
35.		2 <sup>nd</sup>	Do
36.		3 <sup>rd</sup>	Design of hydraulic circuits
37.	13 <sup>th</sup>	1 <sup>st</sup>	Drilling, Planning, Shaping, Surface grinding, Press and Forklift applications- mobile
38.		2 <sup>nd</sup>	Hydraulics; Design of Pneumatic circuits for metalworking, handling, clamping,
39.		3 <sup>rd</sup>	Do
40.	14 <sup>th</sup>	1 <sup>st</sup>	Counter and timer circuits.
41.		2 <sup>nd</sup>	Low-cost Automation
42.		3 <sup>rd</sup>	Do
43.	15 <sup>th</sup>	1 <sup>st</sup>	Hydraulic and Pneumatic power packs
44.		2 <sup>nd</sup>	IOT in Hydraulics and pneumatics
45.		3 <sup>rd</sup>	Do

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GF, MECHANICAL DEPARTMENT

*Uday Kelus*  
HOD, Mechanical Engg.

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Name of the teaching faculty: Sri Siddhant Singh Babu  
Semester: 6th  
No. of periods per week: 4  
End semester exam: 50  
Total Marks: 100

Department: Mechanical Engineering  
Subject: Automobile Engineering Lab  
Total Periods: 60  
Sessional: 50

Sl. No.	Week	Period	Topic to be covered
1.	1 <sup>st</sup>	1 <sup>st</sup>	Study of Automobile chassis.
2.		2 <sup>nd</sup>	Do
3.		3 <sup>rd</sup>	Do
4.		4 <sup>th</sup>	Do
5.	2 <sup>nd</sup>	1 <sup>st</sup>	Do
6.		2 <sup>nd</sup>	Do
7.		3 <sup>rd</sup>	Do
8.		4 <sup>th</sup>	Study the differential mechanism of the Tractor.
9.	3 <sup>rd</sup>	1 <sup>st</sup>	Do
10.		2 <sup>nd</sup>	Do
11.		3 <sup>rd</sup>	Do
12.		4 <sup>th</sup>	Do
13.	4 <sup>th</sup>	1 <sup>st</sup>	Do
14.		2 <sup>nd</sup>	Do
15.		3 <sup>rd</sup>	Do
16.		4 <sup>th</sup>	Study the hydraulic braking system of automobile.
17.	5 <sup>th</sup>	1 <sup>st</sup>	Do
18.		2 <sup>nd</sup>	Do
19.		3 <sup>rd</sup>	Do
20.		4 <sup>th</sup>	Do
21.	6 <sup>th</sup>	1 <sup>st</sup>	Do
22.		2 <sup>nd</sup>	Do
23.		3 <sup>rd</sup>	Do
24.		4 <sup>th</sup>	Study the cut section model of carburettor type and maruti car type.
25.	7 <sup>th</sup>	1 <sup>st</sup>	Do
26.		2 <sup>nd</sup>	Do
27.		3 <sup>rd</sup>	Do
28.		4 <sup>th</sup>	Do
29.	8 <sup>th</sup>	1 <sup>st</sup>	Do
30.		2 <sup>nd</sup>	Do
31.		3 <sup>rd</sup>	Do
32.		4 <sup>th</sup>	Do
33.	9 <sup>th</sup>	1 <sup>st</sup>	Study the fuel pump cut section model.
34.		2 <sup>nd</sup>	Do
35.		3 <sup>rd</sup>	Do
36.		4 <sup>th</sup>	Do
37.	10 <sup>th</sup>	1 <sup>st</sup>	Do
38.		2 <sup>nd</sup>	Do
39.		3 <sup>rd</sup>	Do
40.		4 <sup>th</sup>	Do

41.	11 <sup>th</sup>	1 <sup>st</sup>	Study the actual cut section of gear box.
42.		2 <sup>nd</sup>	Do
43.		3 <sup>rd</sup>	Do
44.		4 <sup>th</sup>	Do
45.	12 <sup>th</sup>	1 <sup>st</sup>	Do
46.		2 <sup>nd</sup>	Do
47.		3 <sup>rd</sup>	Do
48.		4 <sup>th</sup>	Do
49.	13 <sup>th</sup>	1 <sup>st</sup>	Do
50.		2 <sup>nd</sup>	Study of actual car engine.
51.		3 <sup>rd</sup>	Do
52.		4 <sup>th</sup>	Do
53.	14 <sup>th</sup>	1 <sup>st</sup>	Do
54.		2 <sup>nd</sup>	Do
55.		3 <sup>rd</sup>	Do
56.		4 <sup>th</sup>	Do
57.	15 <sup>th</sup>	1 <sup>st</sup>	Do
58.		2 <sup>nd</sup>	Final Record verification of all students
59.		3 <sup>rd</sup>	Viva voce Test
60.		4 <sup>th</sup>	Record Submission

The lesson plan prepared by the concerned faculty

*Siddhant Singh Babu*  
Siddhant Singh Babu

GF, MECHANICAL DEPARTMENT

*Uday Mishra*  
Head, Mechanical Bys.

**GOVERNMENT POLYTECHNIC, NUAPADA**  
**Academic Lesson Plan for Summer Semester- 2025-26**

Name of the teaching faculty: Er. Siddhant Singh Babu

Department: Mechanical Engineering

Semester: 6th

Subject: Power Station Engineering Lab

No. of periods per week: 4

Total Periods: 60

End semester exam: 50

Sessional: 25

Total Marks: 75

Sl. No.	Week	Period	Topic to be covered
1.	1 <sup>st</sup>	1 <sup>st</sup>	To study the modern steam power plant with model.
2.		2 <sup>nd</sup>	Do
3.		3 <sup>rd</sup>	Do
4.		4 <sup>th</sup>	Do
5.	2 <sup>nd</sup>	1 <sup>st</sup>	Do
6.		2 <sup>nd</sup>	Do
7.		3 <sup>rd</sup>	To determine the various efficiencies of steam turbine.
8.		4 <sup>th</sup>	Do
9.	3 <sup>rd</sup>	1 <sup>st</sup>	Do
10.		2 <sup>nd</sup>	Do
11.		3 <sup>rd</sup>	Do
12.		4 <sup>th</sup>	Do
13.	4 <sup>th</sup>	1 <sup>st</sup>	Do
14.		2 <sup>nd</sup>	Do
15.		3 <sup>rd</sup>	To study the cooling tower.
16.		4 <sup>th</sup>	Do
17.	5 <sup>th</sup>	1 <sup>st</sup>	Do
18.		2 <sup>nd</sup>	Do
19.		3 <sup>rd</sup>	Do
20.		4 <sup>th</sup>	Do
21.	6 <sup>th</sup>	1 <sup>st</sup>	Do
22.		2 <sup>nd</sup>	Do
23.		3 <sup>rd</sup>	Study of jet condenser
24.		4 <sup>th</sup>	Do
25.	7 <sup>th</sup>	1 <sup>st</sup>	Do
26.		2 <sup>nd</sup>	Do
27.		3 <sup>rd</sup>	Do
28.		4 <sup>th</sup>	Study of De-level turbine
29.	8 <sup>th</sup>	1 <sup>st</sup>	Do
30.		2 <sup>nd</sup>	Do
31.		3 <sup>rd</sup>	Do
32.		4 <sup>th</sup>	Do
33.	9 <sup>th</sup>	1 <sup>st</sup>	Do
34.		2 <sup>nd</sup>	To study the spring loaded safety valve.
35.		3 <sup>rd</sup>	Do
36.		4 <sup>th</sup>	Do
37.	10 <sup>th</sup>	1 <sup>st</sup>	Do
38.		2 <sup>nd</sup>	Do
39.		3 <sup>rd</sup>	Do

40.		4 <sup>th</sup>	To study the steam generators (boilers)models.
41.	11 <sup>th</sup>	1 <sup>st</sup>	Lancashire boiler
42.		2 <sup>nd</sup>	Do
43.		3 <sup>rd</sup>	Do
44.		4 <sup>th</sup>	Do
45.	12 <sup>th</sup>	1 <sup>st</sup>	Do
46.		2 <sup>nd</sup>	Cornish boiler
47.		3 <sup>rd</sup>	Do
48.		4 <sup>th</sup>	Do
49.	13 <sup>th</sup>	1 <sup>st</sup>	Do
50.		2 <sup>nd</sup>	Babcock & Wilcox Boiler
51.		3 <sup>rd</sup>	Do
52.		4 <sup>th</sup>	Do
53.	14 <sup>th</sup>	1 <sup>st</sup>	Do
54.		2 <sup>nd</sup>	Vertical water tube boiler.
55.		3 <sup>rd</sup>	Do
56.		4 <sup>th</sup>	Do
57.	15 <sup>th</sup>	1 <sup>st</sup>	Do
58.		2 <sup>nd</sup>	Final Record verification of all students
59.		3 <sup>rd</sup>	Viva voce Test
60.		4 <sup>th</sup>	Record Submission

The lesson plan prepared by the concerned faculty

*Siddhant Singh Babu*  
Siddhant Singh Babu

GF, MECHANICAL DEPARTMENT

*Hidayatullah*  
HOD, Mechanical Engg.

