

# GOVT. POLYTECHNIC KULLU

## LESSON PLAN

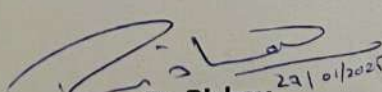
Name of Teacher: Er. Rishav

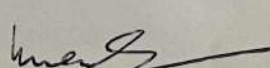
Branch: Auto Engg.

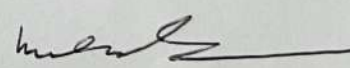
Name of Subject: Basics of Electric & Hybrid Vehicle

Sem: 6<sup>th</sup>

SR.NO	MONTH	WEEK	CONTENTS	REMARKS
1	January & February	5 <sup>th</sup> , 1 <sup>st</sup> , 2 <sup>nd</sup> & 3 <sup>rd</sup>	<b>Electric Vehicles:</b> Introduction; History of Hybrid and Electric Vehicles; Social and Environmental importance of Hybrid and Electric Vehicles; Components, Vehicle mechanics: Roadway fundamentals, Vehicle kinetics, Dynamics of vehicle motion; Propulsion System Design.	
2	February & March	5 <sup>th</sup> , 1 <sup>st</sup> , 2 <sup>nd</sup> , & 4 <sup>th</sup>	<b>Battery: Basics:</b> Types; Parameters: Capacity, Discharge rate, State of charge, State of Discharge, Depth of Discharge; Technical characteristics, Battery pack Design, Properties of Batteries.	
3	March & April	5 <sup>th</sup> , 1 <sup>st</sup> , 2 <sup>nd</sup> , & 4 <sup>th</sup>	<b>DC &amp; AC Electrical Machines:</b> Motor and Engine rating; Requirements; DC machines; Three phase A/c machines; Induction machines; Permanent magnet machines; Switched reluctance machines.	
4	April & May	5 <sup>th</sup> , 1 <sup>st</sup> & 3 <sup>rd</sup>	<b>Electric Vehicle Drive Train:</b> Transmission configuration; Components: Gears, Differential, Clutch, Brakes; Regenerative braking, Motor sizing; Fuel efficiency analysis.	
5	May	4 <sup>th</sup> & 5 <sup>th</sup>	<b>Hybrid Electric Vehicles:</b> Types: Parallel, Series, Parallel and Series configurations; Drive train; Sizing of components; Basics of Micro, Mild, Mini, Plug-in and Fully hybrid.	

  
Er. Rishav  
Lecturer Automobile Engg.

  
Er. Vivek Singh  
HOD Automobile Engg.

  
HOD  
Automobile Engg. Deptt.



**Govt. Polytechnic Kullu (H.P.)**  
**Lecture Planning**

Branch : Automobile Engineering

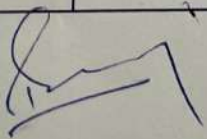
Semester: 6<sup>th</sup>

Subject: Industrial Engineering

Session : Jan - May, 2025

Teacher : Pankaj Kumar

Sr. No.	No. of Lectures	Month	Week	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1.	10	Feb.	Week 1	Plant Engineering	1.1 Selection of site of industry	R1,R2,R4	
			Week 2		1.2 Plant Layout - Principles, Techniques to improve layout		
			Week 3		1.3 Plant Layout types (Process, Product and Fixed Position)		
			Week 4		1.4 Principles of Material handling equipment 1.5 Plant maintenance importance Type of maintenance (Break down, Preventive and Scheduled) 1.6 Plant safety importance Accidents- Causes and cost of an accident Accident proneness and prevention of accidents		
					1.7 Industrial disputes and settlement Collective bargaining, Conciliation, Mediation, Arbitration 1.8 Indian factories act 1948 and its provisions related to health, welfare and safety		
2.	10	March	Week 1	Work Study	2.1 Productivity- Methods of improving it Importance of good working conditions	R1,R2	
			Week 2		2.2 Method study: Definition, objectives selection of a job for method study Basic procedure for conduct of method study		
			Week 3		2.3 Tool used: Operation process chart, Flow process chart Two handed process chart, man machine chart String diagram and flow diagram		
			Week 4		2.4 Work measurement: Definition, importance Basic procedure in making a time study		
					2.5 Calculation of standard time - Numerical, Employees rating factor, Application of time allowances: Rest, Personal, Process, Special and Policy allowances.		
					2.6 Techniques of work measurement Stop watch Ratio delay study (Work Sampling) Pre determined motion time system (PMTS)		





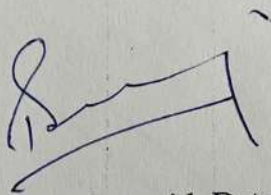
					Synthesis from standard data Analytical estimating		
3.	10	April	Week 1	Production Planning and Control	<p><b>3.1</b> Functions of PPC: Pre planning, Method of forecasting, Routing and Scheduling, Dispatching and controlling</p> <p><b>3.2</b> Concept of critical path method (CPM) Types of Production (Mass, Job Order) Economic Batch Quantity (EBQ) Principles of Product and Process Planning Make or Buy decision - Numerical</p> <p><b>3.3</b> Quality Control: Definition, Objectives Types of Inspections (First piece, Floor and Centralized) - Advantages and disadvantages Sampling Inspection, Single and double sampling plan</p> <p><b>3.4</b> Statistical Quality Control (SQC) Types of measurements - Method of variables and methods of attributes Uses of X, R p and c charts Operating Characteristics curve (OC curve)</p> <p><b>3.5</b> Concept of ISO 9001:2008 Quality management system registration/ Certification procedure Benefits of ISO to the organization</p>	R1,R3,R4	
			Week 2				
4.	10	April	Week 3	Principles of management	<p><b>4.1</b> Definition of Management, Administration, Organization F.W. Taylor's and Henry Fayol's Principles of Management Functions of Manager Types of Organization: Line, Staff Taylor's Pure functional types: Line and staff and committee type Directing Leadership Styles of Leadership Qualities of a good leader Motivation: Positive and Negative Motivation</p> <p><b>4.2</b> Modern Management Techniques: Just In Time Total Quality Management (TQM) Quality circle Zero defect concept 5S Concept Management Information Systems</p> <p><b>4.3</b> Personnel Management: Responsibility of Human Resource Management Selection Procedure Training of Workers Apprentice Training</p>	R1,R2,R3	
			Week 4				



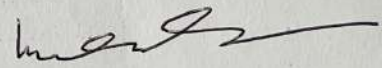
					On the job training Vestibule School Training Job Evaluation and Merit Rating 4.4 Objectives and Importance Wages and Salary Administration Components of Wages Wage Fixation Type of Wage Payment: Halsey's 50% Plan, Rowan's Plan and Emerson's efficiency plan (Numerical Problems)		
5.	10	May	Week 1 Week 3 Week 4	Financial Management	5.1 Fixed and Working Capital, Resources of Capital: Shares Preference and Equity Shares; Debentures; Type of debentures; Public Deposits; 5.2 Factory Costing: Direct Cost; Indirect Cost; Factory Overhead; Selling Price of a product; Profit; Numerical Problems; 5.3 Depreciation; Causes; Methods: Straight line, sinking fund and percentage on Diminishing Value Method; Numerical Problems. 5.4 Material Management: Objectives of good stock control system; ABC analysis of Inventory; Procurement and Consumption cycle; Minimum Stock, Lead Time, Reorder Level-Economic Order Quantity problems; Supply Chain.	R1,R2,R4	

**Teacher's references.**

- R1. Industrial Engineering & Management, S.C. Sharma, Khanna Book Publishing Co. (P)Ltd., Delhi.
- R2. Industrial Engineering and Management, O.P. Khanna, Revised Edition, Dhanpat Rai Publications (P) Ltd., New Delhi – 110002.
- R3. Management, A global perspective, Heinz Wehrich, Harold Koontz, 10th Edition, McGrawHill International Edition 1994.
- R4. Essentials of Management, 4th Edition, Joseph L.Massie, Prentice-Hall of India, New Delhi 2004.



Signature of Teacher with Date



Signature of H.O.D.

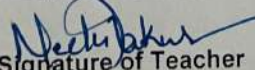


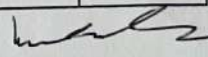
**Government Polytechnic Kullu at Seobagh Distt Kullu H.P. 175138**

**Department of Automobile Engineering**

**Lesson Plan w.e.f 27/01/2025 to 29/05/2025**

Name of Subject:-		<b>Entrepreneurship and Start-ups</b>	Session:-	<b>Jan-May 2025</b>
Name of Teacher:-		<b>Neetu Thakur</b>	Semester:-	<b>6th Semester</b>
Designation:-		<b>Lecturer (English)</b>	Scheme:-	<b>N-2022</b>
Sr No	Month	Week	Contents	Remarks
1	January	Week 5	<b>UNIT 1 – Introduction to Entrepreneurship and Start-Ups</b>	
2	February	Week 1	Definitions, Traits of an entrepreneur, Intrapreneurship, Motivation. Types of Business Structures, Similarities/differences between entrepreneurs and managers.	
		Week 2	Similarities/differences between entrepreneurs and managers. <b>UNIT 2 – Business Ideas and their implementation</b> Discovering ideas and visualizing the business	
		Week 3	Discovering ideas and visualizing the business, Activity map Business Plan	
		Week 4	<b>UNIT 3 –Idea to Start-up</b> Market Analysis–Identifying the target market,	
3	March	Week 1	Competition evaluation and Strategy Development, Marketing and accounting, Risk analysis	
		Week 2	Risk analysis <b>UNIT 4 –Management</b> Company's Organization Structure,	
		Week 3	<b>Class Test -I</b>	
		Week 4	Recruitment and management of talent. Financial organization and management	
4	April	Week 1	Recruitment and management of talent. Financial organization and management	
		Week 2	<b>UNIT 5-Financing and Protection of Ideas</b>	
		Week 3	<b>Class Test -II</b>	
		Week 4	Financing methods available for start-ups in India Communication of Ideas to potential investors–Investor Pitch	
		Week 5	Financing methods available for start-ups in India Communication of Ideas to potential investors–Investor Pitch	
5	May	Week 1	<b>UNIT 6 –Exit strategies for entrepreneurs, bankruptcy, and succession and harvesting strategy.</b>	
		Week 2	<b>House Test</b>	
		Week 3	bankruptcy, and succession and harvesting strategy.	
		Week 4	<b>Revision</b>	
		Week 5	<b>Revision</b>	

  
Signature of Teacher  
(Neetu Thakur)

  
Signature of H.O.D



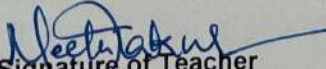
**Government Polytechnic Kullu at Seobagh Distt Kullu H.P. 175138**

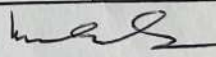
**Department of Applied Sciences & Humanities**

**Lesson Plan w.e.f 27/01/2025 to 29/05/2025**

Name of Subject:-	<b>Technical Communication (OE-II)</b>	Session:-	<b>Jan-May 2025</b>
Name of Teacher:-	<b>Neetu Thakur</b>	Semester:-	<b>6th Semester</b>
Designation:-	<b>Lecturer (English)</b>	Scheme:-	<b>N-2022</b>

Sr No	Month	Week	Contents	Remarks
1	January	Week 5	<b>Unit I: Introduction.</b> Fundamentals of Technical Communication 1. Language as a tool of Communication 2. Features of Technical Communication 3. Distinction between General and Technical Communication 4. Channels of Communication at workplace.	
2	February	Week 1	5. Barriers to Communication and overcoming barriers. 6. Doubt removing session 7. Revision of unit 1.	
		Week 2	<b>Unit II: Technical Writing</b> 1. Types of Technical writing, 2. Drafting skills: Agenda and Minutes of Meetings, Official and Business Correspondence	
		Week 3	2. Drafting skills: Agenda and Minutes of Meetings, Official and Business Correspondence	
		Week 4	3. Different formats of Report writing	
3	March	Week 1	4. Basics of Grammar: Spotting errors in sentences (Noun, Pronoun, Verb, Adverb, Adjective, Preposition, Conjunction, Article, Modals, Tenses, Punctuation)	
		Week 2	Basics of Grammer	
		Week 3	<b>Class Test -I</b>	
		Week 4	5. Resume Writing and Covering letter	
4	April	Week 1	5. Resume Writing and Covering letter	
		Week 2	<b>Unit III: Presentation Skills</b> 1. Concept and Significance of Presentation skills 2. Steps of a Effective Presentation	
		Week 3	<b>Class Test -II</b>	
		Week 4	3. Elements of Effective Presentation skills, 4. How to improve Presentation Skills	
		Week 5	<b>Unit IV: Speaking skills</b> 1. What are Speaking Skills and Characteristics of a Good Speech 2. What is Panel Discussion and its procedure	
5	May	Week 1	3. Job Interview Skills, 4. Body Language Examples and their Meanings, 5. Etiquettes and Manners	
		Week 2	<b>House Test</b>	
		Week 3	6. What are the elements of Voice modulation.	
		Week 4	<b>Revision</b>	
		Week 5	<b>Revision</b>	

  
Signature of Teacher  
(Neetu Thakur)

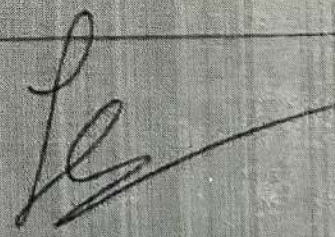
  
Signature of H.O.D



**Government Polytechnic Kullu, Dist. Kullu H.P.**  
**Department of Electrical Engineering**  
**Lesson Plan**

Name of Faculty	Lekh Raj Sharma
Discipline	Civil, Electrical & Automobile Engg, 6 <sup>th</sup> Semester
Semester	6 <sup>th</sup>
Subject	Indian Constitution
Lesson Plan Duration	Jan. - May 2025

Week	Chapter	Topic to be covered
1 <sup>st</sup> (27Jan. - 01Feb.)	Unit 1 Introduction to Constitution:	History of making of the Indian Constitution.
2 <sup>nd</sup> (02Feb. - 08Feb.)	Unit 1 Introduction to Constitution:	Meaning and importance of the Constitution. Salient features and Preamble of Indian Constitution.
3 <sup>rd</sup> (09Feb. - 15Feb.)	Unit 1 Introduction to Constitution:	Fundamental rights - meaning and limitations. Directive principles of state policy and Fundamental duties - their enforcement and their relevance.
4 <sup>th</sup> (16Feb. - 22Feb.)	Unit 1: Indian Knowledge System (IKS):	4. Itihasa (इतिहास) (Ramayana and Mahabharata महाभारि) and Purana (Vishnupurana त्वष्णुपुराण, Bhagavata Purana (भागवि) etc.)
5 <sup>th</sup> (23Feb. - 01Mar.)	Unit 2 Union Government:	Structure of Union Government
6 <sup>th</sup> (02 Mar. - 08Mar.)	Unit 2 Union Government:	Union Executive- President, Vice-president, Prime Minister, Council of Ministers.
7 <sup>th</sup> (09Mar. - 15Mar.)	Unit 2 Union Government:	Union Legislature- Parliament and Parliamentary proceedings. Union Judiciary-Supreme Court of India - composition and powers and function.
Class Test - 1		<b>In Third Week of March 2025.</b>
8 <sup>th</sup> (23Mar. - 29Mar.)	Unit 3 State and Local Governments:	Structure of State Government. State Executive- Governor, Chief Minister, Council of Ministers.
9 <sup>th</sup> (01Apr. - 05Apr.)	Unit 3 State and Local Governments:	State Legislature-State Legislative Assembly and State Legislative Council. State Judiciary-High court.
10 <sup>th</sup> (06Apr. - 12Apr.)	Unit 3 State and Local Governments:	Local Government-Panchayat raj system with special reference to 73rd and Urban Local Self Govt. with special reference to 74th Amendment
11 <sup>th</sup> (03Apr. - 19Apr.)	Unit 4 Election provisions, Emergency provisions, Amendment of the constitutio	Election Commission of India-composition, powers and functions and electoral process.
Class Test - 2		<b>In Third Week of April 2025.</b>





12 <sup>th</sup> (29Apr. - 03May)	provisions, Emergency provisions, Amendment of the constitutio	Types of emergency-grounds, procedure, duration and effects.
13 <sup>th</sup> (29Apr. - 05May.)	Unit 4 Election provisions, Emergency provisions, Amendment of the constitutio	Traditional sports & Regional Games for promoting wellness: Leadership through Physical Activity and Sports; Introduction to First Aid.
House Test		In Second Week of May 2025.
14 <sup>th</sup> (11May - 17 May.)	Unit 4 Election provisions, Emergency provisions, Amendment of the constitutio	Amendment of the constitution- meaning, procedure and limitations.
15 <sup>th</sup> (18May- 29May)		Revision

- **NOTE:** Lesson Plan is Tentative, subject to availability of Time, Students & Faculty.

Prepared by  
(Lekh Raj Sharma)


Signature of HOD AS&H  
(Mr. LR Sharma)

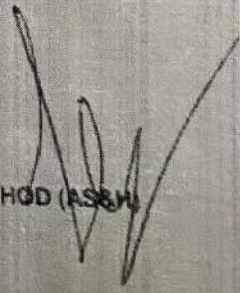


**Lesson Plan**

Name of Faculty	Sh. Yudhvir Singh
Discipline	Applied Sciences & Humanities
Semester	5 <sup>th</sup> (A E C E & E E)
Subject	Composites Science & Technology
Lesson Plan Duration	From Jan 2025 to May 2025

Week	Topics	Theory
1st (27 Jan-01 Feb)	Definition	Classification and characteristics of Composite materials
2nd (3 Feb- 8 Feb)		Terminology used in fiber science. Advantages and application of composites
3rd (10 Feb- 15 Feb)		Introduction to composites materials. General characteristics of reinforcement- classification
4th (17 Feb -22 Feb)	Polymer matrix composites	Thermoplastic and thermosetting resins. Commonly used matrix reinforcement system
5th (24 Feb-1 March)		Fibre, Flake and particulate reinforced composites. Reinforcements used in PMC's glass, carbon
6th (3 March- 8 March)		Aramids, boron, Roving's, yarns, fabrics, etc.
7th (10 March- 15 March)		Thermoset matrices for aerospace components- polyesters, epoxies, phenolics, vinyl esters, cyanate esters, etc.
8th (17 March- 22 March)		Specialty composites
9th (24 March- 29 March)	Carbon-Carbon composites: Matrix precursors. Manufacturing considerations.	
10th (1 April - 5 April)	Nanocomposites: Nano particle dispersion in polymer matrix, Polymer- nanoclay composites and polymer-carbon nanotubes composites	
11th (7 April - 12 April)	Manufacturing techniques	Hand lay-up, Filament winding, Pultrusion, Resin transfer molding.
12th (14 April - 19 April)		Processing science of reactive polymer composites, Process steps for production
13th (21 April - 26 April)		Selection of processing conditions toolings, Equipments
14th (28 April- 3 May)		Carbon-carbon composites, Processing, Thermal and mechanical properties, Quality control
15 <sup>th</sup> (5 May -10 May)	Testing of composites	Raw material testing, Property evaluation at laminate level
16th (12 May -17 May)		NDT techniques
17th (19 May -24 May)		Revision
18th (26 May -29 May)		Revision

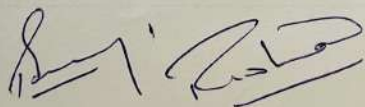
  
Class Teacher

  
HOD (AS&H)



**Department of Automobile Engineering**  
**Schedule for Seminar**  
**6th semester Automobile Engineering**

Sr. No.	Student Name	Board Roll No.	Topics for Phase-1	Scheduled date	Topics for Phase-2	Scheduled date
1	Jatin Kumar	210714102010	Management, Administration & Organisation. Functions of Manager	14-02-2025	Major functions of Production Planning and Control; Pre planning	04-04-2025
2	Rupesh Kumar	210714102020	FW Taylor's & Henry Fayol's Principle of Management	14-02-2025	Methods of forecasting; Routing and Scheduling; Dispatching and Controlling	04-04-2025
3	Akshay Chauhan	220724102001	Types of Organisation-Line & Staff	14-02-2025	Statistical Quality Control; Types of Measurements; Method of Variables; Method of Attributes;	11-04-2025
4	Abhishek Thakur	220714102001	Taylor's pure functional type: Line & staff & Committe type	14-02-2025	Uses of X, R, p and c charts, Operating Characteristics curve (O.C curve)	11-04-2025
5	Harish	220714102003	Directing VS Leadership. Motivation type: positive & negative motivation	14-02-2025	Sampling Inspection; Single and Double Sampling plan; Concept of ISO 9001:2008	11-04-2025
6	Abhinav Sharma	230824102001	Style of Leadership, Qualities of good leader	21-02-2025	Quality Management System Registration/Certification procedure; Benefits of ISO to the organization	11-04-2025
7	Akshay Kumar	230824102003	Just in Time & TQM	21-02-2025	Productivity; Methods of improving Productivity, Importance of good working conditions	11-04-2025
8	Akshay Kumar	230824102004	Quality Circle & Zero defect Concept	21-02-2025	Method Study: Definition; Objectives; Selection of a job for method study; Basic procedure for conduct of Method study	25-04-2025
9	Ankit Thakur	230824102005	5S Concept & Management information system	21-02-2025	Operation process chart; Flow process chart; Two handed process chart	25-04-2025
10	Aryan	230824102006	Responsibility of HR Management & Selection Procedure	21-02-2025	Man Machine chart; String diagram and flow diagram	25-04-2025





11	Gaurav	230824102007	Training of workers & Apprentice Trainee	28-02-2025	Work Measurement: Definition; Basic procedure in making a time study; Employees rating factor;	25-04-2025
12	Mridul	230824102008	OJT, Vestibule School training	28-02-2025	Application of time allowances: Rest, Personal, Process, Special and Policy allowances;	25-04-2025
13	Munish Kumar	230824102009	Job Evaluation & Merit rating	28-02-2025	Calculation of standard time; Basic concept of production study;	02-05-2025
14	Nikhil	230824102010	Wages & salary Administration, Components of wages	28-02-2025	Techniques of Work Measurement-Ratio delay study; Synthesis from standard data; Analytical estimating and Pre determined Motion Time System (PMTS).	02-05-2025
15	Nikhil Thakur	230824102011	Wage Fixation & types of wage payments	28-02-2025	Plant; Selection of site of industry; Plant layout; Principles of a good layout;	02-05-2025
16	Parikshit Parmar	230824102012	Hasley's 50% Plan & Rowan;s Plan	07-03-2025	Types; Process; Product and Fixed position; Techniques to improve Layout;	02-05-2025
17	Prashant Sharma	230824102013	Emerson's Efficiency plan	07-03-2025	Principles of Material handling equipment; Plant maintenance; Importance; Break down maintenance; Preventive maintenance and Scheduled maintenance	02-05-2025
18	Sher Singh	230824102014	Fixed & working capital, Resources of Capital	07-03-2025	Plant Safety: Importance; Accident: Causes and Cost of an Accident, Accident Proneness, Prevention of Accidents	16-05-2025
19	Ujjwal Dhiman	230824102015	Preference Shares, Equity shares, Debenture & its types	07-03-2025	Industrial disputes; Settlement of Industrial disputes; Collective bargaining; Conciliation; Mediation; Arbitration;	16-05-2025
20	Vishal Kaushal	230824102016	Public Deposits, Factory Costing-Direct & Indirect cost, Factory Overheads, Selling price & profit	07-03-2025	Indian Factories Act 1948 and its provisions related to health, welfare and safety.	16-05-2025

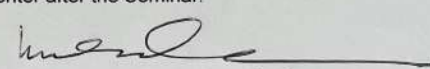


21	Abhishek	230824102017	Depreciation- Causes, Methods- Sinking fund, Straight line & percentage on diminishing value method	28-03-2025	Types of Layout, Types of maintenance, Accidents - cause and cost	16-05-2025
22	Pankaj Kumar	230824102018	Material Management & objectives of good stock control system	28-03-2025	Method study - definition and procedure, Time study- definition and procedure	16-05-2025
23	Ishan Thakur	230824102019	ABC analysis of inventory, Procurement & consumption cycle & Supply chain	28-03-2025	Operation process chart; Flow process chart; Two handed process chart	23-05-2025
24	Nikhil Kumar	230824102020	Minimum stock, Lead time, re-order level-Economic order quantity problems	28-03-2025	Man Machine chart; String diagram and flow diagram	23-05-2025
25	Pavinder	230824102021	Concept of Critical Path Method (CPM); Types of Production: Mass Production, and Job Order Production	28-03-2025	Major functions of Production Planning and Control; Types of Productions	23-05-2025
26	Vedant Saini	230824102022	Economic Batch Quantity (EBQ); Principles of Product and Process Planning	04-04-2025	Quality Control, Sampling Inspection, Single and Double Sampling plan, Types of inspections	23-05-2025
27	Nikhil	230824102024	Make or Buy decision, Quality Control: Definition & Objectives	04-04-2025	SQC, and X, R, p, c Charts, ISO Benefits and Procedure	23-05-2025
28	Ritik	230824102025	Types of Inspection: First piece, Floor and Centralized Inspection; Advantages and disadvantages	04-04-2025	5S Concept, TQM, Just in time, Depreciation	23-05-2025

**Guidelines for Students:**

- 1 Students have to prepare atleast 30 slides for their Seminar
- 2 A student may be allotted time of 15 minutes for presentation & 05 minutes for Q&A session
- 3 The students in the audience may ask the questions on the Seminar topic from the presenter after the Seminar.

  
Sign. of Teachers

  
HOD (Automobile Engineering)