Govt. Polytechnic Hamirpur

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

Name of Faculty	**Mohan Lal**	Academic Session	**Jan - May 2026**
Course Name	**Design of Machine Elements**	Scheme	**N- 2022**
Course Code	**MEPC302**	Semester	**6th**
Course Type	**Program Core Course**	Semester Start Date	**27-01-2026**
L-T-P	**5-0-0**	Semester End Date	**27-05-2026**

STUDY AND EVALUATION SCHEME

Teaching Hours/Week		Internal Assessment		External Assessment				Total		Credit
Theory	Practical	Theory	Practical	Theory	Hrs	Practical	Hrs.	Theory	Practical	
05 Hrs.	**NA**	**40**	**NA**	**60**	**03 Hrs.**	**NA**	**NA**	**100**	**NA**	**03**

COURSE OUTCOMES(COs)

On the successful completion of this course, students will be able to:-	
CO1	Analyze the various modes of failure of machine components under different load patterns.
CO2	Design and prepare part and assembly drawings.
CO3	Use design data books and different codes of design.
CO4	Select standard components with their specifications from manufacturer's catalogue.

Recommended Books	
1.	Machine Design–Sadhu Singh, Khanna Book Publishing Co., Delhi
2.	Introduction to Machine Design–V.B.Bhandari, Tata Mc-Graw Hill ,New Delhi.
3.	Mechanical Engineering Design–Joseph Edward Shigley, TataMc-Graw Hill ,New Delhi.
4.	Design Data Book–PSG Coimbtore, PSG Coimbtore.
5.	Hand Book of Properties of Engineering Materials & Design Data for Machine

Teaching Plan

Unit No	No. of Lect. Planned	Topic to be covered	Proposed date (as per time table)	Actual Date	Remarks
1. **Introduction to Design**	1	Introduction to Syllabus	27.01.2026		
	2	Introduction to Syllabus	28.01.2026		
	3	Machine Design philosophy	29.01.2026		
	4	General Design Procedure	30.01.2026		
	5	General Considerations in Machine Design	31.01.2026		
	6	Characteristics of a good designer	03.02.2026		
	7	Types of loads, concepts of stress, Strain, Types of Stresses; Crushing; Bending and Torsion	04.02.2026		
	8	Creep strain and Creep Curve	05.02.2026		
	9	Fatigue; S-N curve; Endurance Limit; Factor of Safety	06.02.2026		
	10	Stress Concentration; Properties of Engineering materials	07.02.2026		
	11	standardization and advantages of standardization; Use of design data book	10.02.2026		
	12	Use of standards in design; Selection of Material; Criterion of material selection.	11.02.2026		
2. **Design of Cotter and Knuckle Joints**	13	Cotter Joint: Different parts of the Spigot and socket joint	12.02.2026		
	14	Design of Cotter joint; Design of Socket, Design of spigot, Design of cotter, design of rod.	13.02.2026		
	15	Numerical Problems on cotter joint	17.02.2026		
	16	----------do----------	18.02.2026		

	17	——-------do—----------	19.02.2026		
	18	Knuckle Joint: Different parts of the joint, material used for the joint,	20.02.2026		
	19	Design of knuckle joint; Design of rod, Design of pin, Design of single eye, design of double eye.	21.02.2026		
	20	Numerical Problems on knuckle joint	24.02.2026		
Anti friction Bearings	21	——-------do—----------	25.02.2026		
	22	Classification of Bearings; Sliding contact & Rolling contact; Terminology of Ball bearings	26.02.2026		
	23	Life Load relationship, Basic static load rating and Basic dynamic load rating,limiting speed (concept only).	27.02.2026		
3. Design of Shafts	24	Types of Shafts; Shaft materials; Type of loading on shaft, Standard Sizes	28.02.2026		
	25	Design of Shafts (Hollow and Solid) subjected to torsion only, using strength and rigidity criteria	03.03.2026		
	26	——----------do—----------	05.03.2026		
	27	Simple Numerical Problems	06.03.2026		
	28	——----------do—----------	07.03.2026		
	29	——----------do—----------	10.03.2026		
	30	CLASS TEST-I	11.03.2026		
	31	Determination of shaft diameter (Hollow and solid) subjected to bending;	12.03.2026		
	32	Determination of shaft diameter (hollow and solid) subjected to combined torsion and bending.	13.03.2026		
	33	Simple Numerical Problems	17.03.2026		
	34	——----------do—----------	18.03.2026		
Design of Keys and Spur Gear	35	Types of key, Function of key, Forces acting on sunk keys	19.03.2026		
	36	Failure of sunk key (by shearing and Crushing), Design of Sunk Keys	20.03.2026		
	37	Effect of Keyways on strength of shaft.	24.03.2026		
	38	Spur Gear Nomenclature, Design Considerations.	25.03.2026		
	39	——----------do—----------	27.03.2026		
4. Design of Couplings	40	Necessity of a coupling, advantages of a coupling, Types of coupling,	28.03.2026		
	41	——----------do—----------	31.03.2026		

Design of Riveted and Welded Joints	42	Design of Protected and Unprotected type Flange Coupling	01.04.2026		
	43	----------do----------	02.04.2026		
	44	Numerical Problems on Couplings	04.04.2026		
	45	CLASS TEST-II	07.04.2026		
	46	Numerical Problems on Couplings	08.04.2026		
	47	Types of riveted joints	09.04.2026		
	48	Possible failure of riveted joints, Design of single riveted and double riveted lap and butt joint (zigzag and chain riveting)	10.04.2026		
	49	strength and efficiency of riveted joints	16.04.2026		
	50	Numerical Problems on Riveted Joints	17.04.2026		
	51	----------do----------	18.04.2026		
	52	----------do----------	21.04.2026		
	53	Common types of welded joints	22.04.2026		
	54	Simple design for V butt welded joints	23.04.2026		
	55	design for transverse fillet , parallel fillet	24.04.2026		
	56	combination fillet welded joint	25.04.2026		
	57	Numerical Problems on Welded Joints	28.04.2026		
	58	----------do----------	29.04.2026		
	59	----------do----------	30.04.2026		
5. Design of threaded joints	60	Threaded Joints: Common type of screw fastenings; Through Bolts, Tap Bolt, Cap Screw, Stud, set screws. Terminology of screw threads	02.05.2026		
	61	Designation of screw threads, Types of failure of nut and bolt	12.05.2026		
	62	Design of bolts or studs for cylinder cover subjected to external tensile force only.	13.05.2026		
	63	Numerical Problems on design of cylinder cover	14.05.2026		
Ergonomics & Aesthetic consideration in design:	64	Ergonomics of Design: Ergonomics, Man– Machine relationship	15.05.2026		
	65	Design criteria of Equipment for displays and control	16.05.2026		
	66	Need of modern approach in Design	19.05.2026		
	67	Aesthetic considerations regarding shape, size, color& surface finish	20.05.2026		
	68	----------do----------	21.05.2026		
	69	D.C.S.	22.05.2026		
	70	D.C.S.	23.05.2026		

	71	D.C.S.	26.05.2026		

Home Assignments

Ass. No	Contents of Syllabus Covered	Proposed date	Actual Date	Remarks
1	Unit-1&2	28.02.2025		
2	Unit-3&4	02.05.2025		
3				

Class /House Test

Name of Test	Syllabus Covered in Tests (Unit/Chapter Wise)	Proposed date	Actual Date	Remarks
Class Test-I	30% of whole syllabus	As per HPTSB Academic Calendar Schedule		
Class Test-II	60% of whole syllabus			
House Test	80% of whole syllabus			

Signature of Course Teacher with Name

MOHAN LAL

Approved by

OIC/HoD/Principal

	Government Polytechnic Hamirpur
	DEPARTMENT OF MECHANICAL ENGINEERING
	LESSON PLAN

Name of Faculty	**Dinesh Kumar Patial**	Academic Session	**Jan - May 2026**
Course Name	**CAD/CAM LAB**	Scheme	**N- 2022**
Course Code	**MEPC304**	Semester	**6th**
Course Type	**Core subject**	Semester start date	**27-01-2026**
L-DS-P	**0-2-2**	Semester end date	**27-05-2026**

STUDY AND EVALUATION SCHEME

Teaching Hours/Week		Internal Assessment		External Assessment				Total		Credit
Theory	Practical	Theory	Practical	Theory	Hrs	Practical	Hrs.	Theory	Practical	
NA	04 Hrs.	NA	40	NA	NA	60	03	NA	100	01

COURSE OUTCOMES (COs)

CO1	Explain the 3D commands and features of a CAD software
CO2	Create 3D solid model and find the mass properties of simples solids
CO3	Demonstrate the working of CNC turning and milling machine joints.
CO4	Develop the part program using simulation software for Lathe and Milling
CO5	Assess the part program, edit and execute in CNC turning and machining centre

RECOMMENDED BOOKS

1.	Machine Drawing–P.S .Gill S.K. Kataria & Sons, Delhi.,17th Revised edition,2001
2.	Mechanical Draughtsmanship-G.L .Tamta Dhanpat Rai & Sons,Delhi,1992
3.	Inside Auto CAD–D.Raker and H.Rice, BPB Publications, New Delhi,1985
4.	CAD/CAM/CIM–P. Radhakrishnan, S. Subramaniyan & V.Raju, New Age International Pvt. Ltd., New Delhi, 3rd Edition,

TEACHING PLAN

GROUP-1

Sr. No.	Date / No. of Lect.	Unit	Detail of Contents
1.	29 Jan. – 30 Jan. 26 **(02)**	I	**Introduction:** Part modelling; Datum Plane; constraint; sketch; dimensioning; extrude; revolve; sweep; blend; protrusion; extrusion; rib; shell; hole; round; chamfer; copy; mirror; assembly; align; orient.
2.	05 Feb. - 27 Feb. 26 **(08)**	II	**Exercises:**3D Drawings of 1). Geneva Wheel ; 2). Bearing Block; 3). Bushed bearing:4). Gib and Cotter joint; 5).Screw Jack; 6).Connecting Rod: (at least four drawings to be prepared)
3.	05 Mar. – 09 Apr. 26 **(10)**	III	**CNC Programming and Machining:** Introduction;1).Study of CNC lathe, milling; 2).Study of international standard codes: G-Codes and M-Codes; 3).Format –Dimensioning methods; 4). Program writing – Turning simulator – Milling simulator, IS practice – commands menus; 5). Editing the program in the CNC machines; 6). Execute the program in the CNC machines; **Exercises:** Print the Program from the Simulation Software and make the Component in the CNC Machine.
4.	10 Apr. – 30 Apr. 26 **(06)**	IV	**CNC Turning Machine**:(Material: Aluminum/Acrylic/Plastic rod) 1. Using Linear and Circular interpolation-Create a part program and produce component in the Machine. 2. Using Stock removal cycle–Create a part program for multiple turning operations and produce component in the Machine. 3. Using canned cycle-Create a part program for thread cutting, grooving and produce component in the Machine.
5.	07 May - 22 May 26 **(06)**	V	**CNC Milling Machine** (Material: Aluminum/Acrylic/Plastic) 1. Using Linear interpolation and Circular interpolation–Create a part program for grooving and produce component in the Machine. 2. Using canned cycle-Create a part program for drilling, tapping, counter sinking and produce component in the Machine. 3. Using sub program-Create a part program for mirroring and produce component in the Machine.

Home Assignments

Assignment. No.	Syllabus Covered	Proposed date	Actual Date	Remarks
1	NA	NA	NA	NA
2	NA	NA	NA	NA

Class / House Test

Name of Test	Syllabus Covered in Tests	Proposed date	Actual Date	Remarks
Class Test-I	NA	NA	NA	NA
Class Test-II	NA		NA	NA
House Test	NA		NA	NA

27/01/26.

Signature of course teacher
Dinesh Kumar Patial,
Lect. Mech. Engg.

HOD

TEACHING PLAN

GROUP-2

Sr. No.	Date / No. of Lect.	Unit	Detail of Contents
1.	31 Jan. – 02 Feb. 26 **(02)**	I	**Introduction:** Part modelling; Datum Plane; constraint; sketch; dimensioning; extrude; revolve; sweep; blend; protrusion; extrusion; rib; shell; hole; round; chamfer; copy; mirror; assembly; align, orient.
2.	07 Feb. – 07 Mar. 26 **(08)**	II	**Exercises:**3D Drawings of 1). Geneva Wheel ; 2). Bearing Block; 3). Bushed bearing:4). Gib and Cotter joint; 5).Screw Jack; 6).Connecting Rod: (at least four drawings to be prepared)
3.	09 Mar. – 13 Apr. 26 **(8)**	III	**CNC Programming and Machining:** Introduction;1).Study of CNC lathe, milling; 2).Study of international standard codes: G-Codes and M-Codes; 3).Format –Dimensioning methods; 4). Program writing – Turning simulator – Milling simulator, IS practice – commands menus; 5). Editing the program in the CNC machines; 6). Execute the program in the CNC machines; **Exercises:** Print the Program from the Simulation Software and make the Component in the CNC Machine.
4.	18 Apr. – 04 May 26 **(06)**	IV	**CNC Turning Machine**:(Material: Aluminum/Acrylic/Plastic rod) 1. Using Linear and Circular interpolation-Create a part program and produce component in the Machine. 2. Using Stock removal cycle–Create a part program for multiple turning operations and produce component in the Machine. 3. Using canned cycle-Create a part program for thread cutting, grooving and produce component in the Machine.
5.	11 May - 25 May 26 **(05)**	V	**CNC Milling Machine** (Material: Aluminum/Acrylic/Plastic) 1. Using Linear interpolation and Circular interpolation–Create a part program for grooving and produce component in the Machine. 2. Using canned cycle-Create a part program for drilling, tapping, counter sinking and produce component in the Machine. 3. Using sub program-Create a part program for mirroring and produce component in the Machine.

Home Assignments

Assignment. No.	Syllabus Covered	Proposed date	Actual Date	Remarks
1	NA	NA	NA	NA
2	NA	NA	NA	NA

Class / House Test

Name of Test	Syllabus Covered in Tests	Proposed date	Actual Date	Remarks
Class Test-I	NA	NA	NA	NA
Class Test-II	NA		NA	NA
House Test	NA		NA	NA

27/01/26

Signature of course teacher
Dinesh Kumar Patial,
Lect. Mech. Engg.

HOD

Government Polytechnic Hamirpur

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

Name of Faculty	**Amit Sharma**	Academic Session	**Jan - May 2026**
Course Name	**Welding Technology**	Scheme	**N- 2022**
Course Code	MEPE302-3	Semester	**6th**
Course Type	PROGRAMME ELECTIVE	Semester Start Date	**27-01-2026**
L-T-P	**4-0-0**	Semester End Date	**27-05-2026**

STUDY AND EVALUATION SCHEME

Teaching Hours/Week		Internal Assessment		External Assessment				Total		Credit
Theory	Practical	Theory	Practical	Theory	Hrs	Practical	Hrs.	Theory	Practical	
04 Hrs.	**NA**	**40**	**NA**	**60**	**03 Hrs.**	**NA**	**NA**	**100**	**NA**	**03**

COURSE OUTCOMES(COs)

On the successful completion of this course, students will be able to:-	
CO1	Understand the basics of welding and to know about the various types of welding processes
CO2	Understand the principle and working of gas and arc welding processes
CO3	Understand the principle and working of resistance welding processes
CO4	Understand the concept and working of various special welding processes.
CO5	Understand the principle and concept of Brazing and soldering, Welding of Different Materials, welding defects and testing of welded joints.

Recommended Books

S.No.	Name of the Book	Author Name	Publication
1.	Advanced Welding Technology	Dr. S.P Tiwari and S.A Rizvi	S.K Kataria and sons
2.	Welding Technology	O.P Khanna	Dhanpat Rai
3.	Foundation of Welding Technology	K.S Ghosh	PHI Learning Pvt. Ltd.

Teaching Plan

Unit No	No. of Lect. Planned	Topic to be covered	Proposed date (as per time table)	Actual Date	Remarks
1. Introduction to Welding & Gas Welding	1	Principle of Welding	28.01.2026		
	2	Classification of Welding processes	29.01.2026		
	3	Advantages and Limitations of Welding	31.01.2026		
	4	Applications of welding, Weld ability	02.02.2026		
	5	Principle of operation of Gas Welding	04.02.2026		
	6	Oxyacetylene Flame and combustion of flame	05.02.2026		
	7	Types of Flame	07.02.2026		
	8	Welding Techniques	09.02.2026		
	9	Filler rods and fluxes for Gas Welding	11.02.2026		
	10	Oxygen and acetylene gas cylinders, Acetylene gas generator	12.02.2026		
	11	Pressure regulator, Oxygen and acetylene hoses, Welding Torch	14.02.2026		
2. Arc Welding & Resistance Welding	12	Principle of arc welding and striking the arc	16.02.2026		
	13	Arc length and Arc blow	18.02.2026		
	14	Arc Welding Machine and its types	19.02.2026		
	15	AC and Dc Welding	21.02.2026		
	16	Types of Polarity	23.02.2026		
	17	Electrodes: Classification, Specification	25.02.2026		
	18	Selection of electrodes, Coated Electrodes	26.02.2026		
	19	Welding defects	28.02.2026		

	20	Principle of Resistance Welding, Advantages, Disadvantages and its applications	02.03.2026		
	21	Spot Welding	05.03.2026		
	22	Seam Welding	07.03.2026		
	23	Projection Welding	16.03.2026		
	24	Butt Welding: Upset Butt Welding and Flash Butt Welding	18.03.2026		
	25	Percussion Welding	19.03.2026		
3. Other Welding Processes	26	Submerged Arc Welding	23.03.2026		
	27	TIG Welding	24.03.2026		
	28	MIG Welding	25.03.2026		
	29	Electro Slag Welding	28.03.2026		
	30	Plasma Arc Welding	30.03.2026		
	31	Ultrasonic Welding	01.04.2026		
	32	Thermit Welding	02.04.2026		
	33	Atomic Hydrogen Welding	04.04.2026		
	34	Electron Beam Welding	13.04.2026		
	35	Laser Beam Welding	16.04.2026		
4. Brazing and Soldering	36	Principle and procedure of Brazing	18.04.2026		
	37	Brazing Filler Alloys and Brazing Fluxes	20.04.2026		
	38	Advantages, Limitations and applications of Brazing	22.04.2026		
	39	Principal and Procedure of soldering	23.04.2026		
	40	Solders and Soldering Fluxes	25.04.2026		
	41	Soldering Methods	27.04.2026		
	42	PCB Soldering	29.04.2026		
5. Welding of Different Materials, Weld defects and testing	43	Welding of Cast Iron	30.04.2026		
	44	Welding of Alloy steel and tool steel	02.05.2026		
	45	Welding of Aluminium and magnesium	11.05.2026		
	46	Welding of Stainless Steel and Copper	13.05.2026		
	47	Types of Weld defects, their causes and preventions	14.05.2026		
	48	Destructive and Nondestructive testing of Welds	16.05.2026		
	49	Fluorescent Penetration Test and Magnetic particle test	18.05.2026		
	50	Ultrasonic Test	20.05.2026		
	51	Radiographic Test	21.05.2026		
	52	Revision	23.05.2026		
	53	Revision	25.05.2026		

Home Assignments

Ass. No	Contents of Syllabus Covered	Proposed date	Actual Date	Remarks
1	Unit-1&2	05.03.2026		
2	Unit-3&4	23.04.2026		
3				

Class /House Test

Name of Test	Syllabus Covered in Tests (Unit/Chapter Wise)	Proposed date	Actual Date	Remarks
Class Test-I	30% of whole syllabus	As per HPTSB Academic Calendar Schedule		
Class Test-II	60% of whole syllabus			
House Test	80% of whole syllabus			

Signature of Course Teacher with Name

Amit Sharma

Approved by

OIC/HoD/Principal

Government Polytechnic Hamirpur

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

Name of Faculty	**Tanuj Gupta**	Academic Session	**Jan - May 2026**
Course Name	**Entrepreneurship and Start up**	Scheme	**N- 2022**
Course Code	**HS 302**	Semester	**6th**
Course Type	**Humanities & Social Science course**	Semester Start Date	**27-01-2026**
L-T-P	**4-0-0**	Semester End Date	**27-05-2026**

STUDY AND EVALUATION SCHEME

Teaching Hours/Week		Internal Assessment		External Assessment				Total		Credit
Theory	Practical	Theory	Practical	Theory	Hrs	Practical	Hrs.	Theory	Practical	
04 Hrs.	**NA**	**40**	**NA**	**60**	**03 Hrs.**	**NA**	**NA**	**100**	**NA**	**03**

COURSE OUTCOMES(COs)

On the successful completion of this course, students will be able to:-	
CO1	Understanding the dynamic role of entrepreneurship and small businesses
CO2	Organizing and Managing a Small Business
CO3	Financial Planning and Control

CO4	New Product or Service Development
CO5	Forms of Ownership for Small Business □

Recommended Books			
S.No.	**Name of the Book**	**Author Name**	**Publication**
1	The Startup Owner's Manual: The Publication Step-by-Step Guide for Building a Great Company	Steve Blank and Bob Dorf	K & S Ranch ISBN – 9780984999392
2	The Lean Startup: How Today's K & S Ranch ISBN – 9780984999392 Eric Ries Entrepreneurs use Continuous Innovation to Create Radically Successful Businesses	Eric Ries	Penguin UK, ISBN - 978-0670921607
3	Demand: Creating What People Love Before They Know They Want It	Adrian J. Slywotzky With Karl Weber	Headline Book Publishing, ISBN – 978-0755388974
4	The Innovator's Dilemma: The Headline Book Publishing, ISBN – 978-0755388974 Revolutionary Book that will Change the Way You do Business	Clayton M. Christensen	Harvard Business, ISBN: 978142219602

Teaching Plan

Unit No	No. of Lect. Planned	Topic to be covered	Proposed date (as per time table)	Actual Date	Remarks
1. **Introduction to Entrepreneurship and Start–Ups**	1	Introduction to Syllabus	28.01.2026		
	2	Definitions	29.01.2026		
	3	Intrapreneurship, Motivation.	31.01.2026		
	4	Types of Business Structures	02.02.2026		
	5	----------do----------	04.02.2026		
	6	Similarities/differences between entrepreneurs and managers.	05.02.2026		
	7	----------do----------	07.02.2026		
	8	----------do----------	09.02.2026		
2. **Business Ideas and their implementation**	9	Introduction	11.02.2026		
	10	Discovering ideas and visualizing the business	12.02.2026		
	11	----------do----------	16.02.2026		
	12	----------do----------	18.02.2026		
	13	----------do----------	19.02.2026		
	14	Activity map	21.02.2026		

	15	----------do----------	23.02.2026		
	16	----------do----------	25.02.2026		
	17	----------do----------	26.02.2026		
	18	Business Plan	28.02.2026		
	19	----------do----------	02.03.2026		
	20	----------do----------	05.03.2026		
	21	----------do----------	07.03.2026		
	22	CLASS TEST-I	09.03.2026		
3, -Idea to Start-up	23	Introduction	11.03.2026		
	24	----------do----------	12.03.2026		
	25	CLASS TEST-I	16.03.2026		
	26	Market Analysis–Identifying the target market,	18.03.2026		
	27	----------do----------	19.03.2026		
	28	----------do----------	23.03.2026		
	29	----------do----------	25.03.2026		
	30	Competition evaluation and Strategy Development	28.03.2026		
	31	----------do----------	30.03.2026		
	32	----------do----------	01.04.2026		
	33	----------do----------	02.04.2026		

	34	Marketing and accounting,	04.04.2026		
	35	----------do----------	06.04.2026		
	36	Risk analysis	08.04.2026		
	37	----------do----------	09.04.2026		
	38	CLASS TEST-II	13.04.2026		
4. Management	39	Introduction	16.04.2026		
	40	Company's Organization Structure,	18.04.2026		
	41	----------do----------	20.04.2026		
	42	Recruitment and management of talent.	22.04.2026		
	43	----------do----------	23.04.2026		
	44	Financial organization and management	25.04.2026		
	45	----------do----------	27.04.2026		
	46	----------do----------	29.04.2026		
5. Financing and Protection of Ideas	47	Financing methods available for start-ups in India	30.04.2026		
	48	----------do----------	02.05.2026		
	49	Communication of Ideas to potential investors–Investor Pitch	02.05.2026		
	50	----------do----------	11.05.2026		
	51	Patenting and Licenses	13.05.2026		
	52	----------do----------	14.05.2026		
6. Exit strategies for entrepreneurs	53	Exit strategies for entrepreneurs,	16.05.2026		
	54	bankruptcy, and succession and harvesting strategy.	18.05.2026		
	55	----------do----------	20.05.2026		
	56	----------do----------	21.05.2026		
	57	D.C.S.	23.05.2026		
	58	D.C.S.	25.05.2026		

Home Assignments

Ass. No	Contents of Syllabus Covered	Proposed date	Actual Date	Remarks
1	Unit-1&2	11.03.2026		
2	Unit-3&4	30.04.2026		
3				

Class /House Test

Name of Test	Syllabus Covered in Tests (Unit/Chapter Wise)	Proposed date	Actual Date	Remarks
Class Test-I	30% of whole syllabus	As per HPTSB Academic Calendar Schedule		
Class Test-II	60% of whole syllabus			
House Test	80% of whole syllabus			

Tanuj Gupta

Signature of Course Teacher with Name

TANUJ GUPTA
Lect Mech

Approved by

OIC/HoD/Principal

	Atal Bihari Vajpayee Govt Institute of Engineering & Technology
	DEPARTMENT OF MECHANICAL ENGINEERING
	LESSON PLAN

Name of Faculty	**Er.Arvind Katoch**	Academic Session	**Jan - May 2025**
Course Name	**Basics of Management**	Scheme	**N- 2022**
Course Code	**EEVOE 303**	Semester	**6th**
Course Type	**Open Elective**	Semester Start Date	**27-01-2026**
L-T-P	**3(L: 3, DCS: 1,P: 0)**	Semester End Date	**29-05-2026**

STUDY AND EVALUATION SCHEME

Teaching Hours/Week		Internal Assessment		External Assessment				Total		Credit
Theory	Practical	Theory	Practical	Theory	Hrs	Practical	Hrs.	Theory	Practical	
04 Hrs.	**NA**	**40**	**NA**	**60**	**03 Hrs.**	**NA**	**NA**	**100**	**NA**	

COURSE OUTCOMES(COs)

On the successful completion of this course, students will be able to:-	
CO1	To understand the basics of management
CO2	To understand self-management.
CO3	To understand the leadership and motivation.
CO4	To understand the Legal Environment and Business.
CO5	To understand the concept of total quality management.

Recommended Books	
	1. Principles of Management by Philip Kotler TEE Publication 2. Principles and Practice of Management by Shyamal Bannerjee: Oxford and IBMPublishing Co, New Delhi. 3. Financial Management by MY Khan and PK Jain, Tata McGraw Hill Publishing Co:: 7,West Patel Nagar , New Delhi. 4. Modern Management Techniques by SL Goel: Deep and Deep Publications Pvt Limited ,Rajouri Garden, New Delhi.

Teaching Plan

Unit No	No. of Lect. Planed	Topic to be covered	Proposed date (as per time table)	Actual Date	Remarks
1. **Introduction to Management**	1	Introduction to Syllabus	27.01.2026		
	2	Definitions and concept of Management, Functions of management	28.01.2026		
	3	------do------	31.01.2026		
	4	--------do----------	2.02.2026		
	5	planning, organizing, staffing, coordinating and controlling, Various areas of management, Structure of an Organization.	03.02.2026		
	6		04.02.2026		
	7	--------do----------	07.02.2026		
	8	--------do----------	09.02.2026		
	9	----------do----------	10.02.2026		
2. **Self-Management and Development**	10	Life Long Learning Skills, Concept of Personality Development, Ethics and Moral values,	11.02.2026		
	11	----------do----------	16.02.2026		
	12	----------do----------	17.02.2026		
	13	--------do----------	18.02.2026		
	14	Concept of Physical Development; Significance of health, hygiene, body gestures, Time Management Concept and its importance	20.02.2026		
	15	----------do----------	23.02.2026		
	16	----------do----------	24.02.2026		
	17	----------do----------	25.02.2026		
	18	Intellectual Development:	28.02.2026		

		Reading skills, speaking, listening skills, writing skills (Note taking, rough draft, revision, editing and final drafting), Concept of Critical Thinking and Problem Solving (approaches, steps and cases).			
	19	----------do----------	2.03.2026		
	20	----------do----------	3.03.2026		
	21	----------do----------	7.03.2026		
	22	----------do----------	9.03.2026		
	23	----------do----------	10.03.2026		
3. Leadership and Motivation	24	Meaning, importance , types of leadership and qualities of a good leader.	16.03.2026		
	25	--------do----------	17.03.2026		
	26	--------do----------	18.03.2026		
	27	----------do----------	23.03.2026		
	28	Concept and importance of motivation-drives and incentives, types of motivation.	24.03.2026		
	29	----------do----------	25.03.2026		
	30	----------do----------	28.03.2026		
	31	----------do--------	30.03.2026		
	32	----------do----------	1.04.2026		
4. Legal Environment and Business :	33	Various labour laws and its necessity. Salient features of Income Tax Act – computation of income tax on salary income, Sales and Excise Tax Act-VAT& Excise duty and Factory Act. 1948.	04.04.2026		
	34	----------do----------	06.04.2026		
	35		07.04.2026		
	36	----------do----------	13.04.2026		
	37	.	18.04.2026		
	38	Labour Welfare Schemes including wage payment-types, system of	20.04.2026		

		wage payment and incentives			
	39	----------do----------	21.04.2026		
	40	----------do----------	22.04.2026		
	41	----------do----------	25.04.2026		
	42		27.04.2026		
	43		28.04.2026		
	44	Intellectual Property Rights(IPR)- Concepts, infringements and remediesrelated to patents, copy rights, trademarks and designs	29.04.2026		
	45	----------do----------	02.05.2026		
	46	----------do----------	11.05.2026		
	47	----------do----------	12.05.2026		
	48		13.05.2026		
	49	Accident and Safety- Meaning and concept of accident and safety, causes, safety precautions and various measures after accidents	16.05.2026		
	50	----------do----------	18.05.2026		
	51	----------do----------	19.05.2026		
5.Total Quality Management	52	Meaning and concept of Total Quality Management, variousfactors/measures to achieve TQM in an organization. Standards and Codes-National & International.	20.05.2026		
	53	----------do----------	23.05.2026		
	54	----------do----------	24.05.2026		
	55	----------do----------	25.05.2026		
	56	DCS	26.05.2026		
	57	DCS	27.05.2026		

Home Assignments

Ass. No	Contents of Syllabus Covered	Proposed date	Actual Date	Remarks
1	Unit-1&2	10.03.2026		
2	Unit-3&4,5	29.04.2026		
3				

Class /House Test

Name of Test	Syllabus Covered in Tests (Unit/Chapter Wise)	Proposed date	Actual Date	Remarks
Class Test-I	30% of whole syllabus	As per HPTSB Academic Calendar Schedule		
Class Test-II	60% of whole syllabus			
House Test	80% of whole syllabus			

Signature of Course Teacher with Name

Approved by

OIC/HoD/Principal

राजकीय बहुतकनीकी, हमीरपुर(हि.प्र.)
GOVT. POLYTECHNIC, HAMIRPUR (H.P.)

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

Name of Faculty	**Manoj Kumar**	Academic Session	**Jan - May 2026**
Course Name	**Robotics and Applications**	Scheme	**N- 2022**
Course Code	**MAOE302**	Semester	**6th**
Course Type	**Open Elective**	Semester Start Date	**27-01-2026**
L-T-P	**4-0-0**	Semester End Date	**27-05-2026**

STUDY AND EVALUATION SCHEME

Teaching Hours/Week		Internal Assessment		External Assessment				Total		Credit
Theory	Practical	Theory	Practical	Theory	Hrs	Practical	Hrs.	Theory	Practical	
04 Hrs.	**NA**	**40**	**NA**	**60**	**03 Hrs.**	**NA**	**NA**	**100**	**NA**	**03**

COURSE OUTCOMES(COs)

On the successful completion of this course, students will be able to:-	
CO1	Understand the basic concept of robot motion and physical configuration
CO2	Learn the basic structure of robotic system & degree of freedom.
CO3	Use of different types of drives, commissioning of drives and application
CO4	Use different types of industrial sensor to make a live project .

Recommended Books	
1.	Robotics for Engineers Yoram Koren; McGraw Hill Publisher
2.	Robotics by K S Fu, R. C. Gonzalez and C S G Lee
3.	Robotic Engineering by Richard K Lafter
4.	Robot Reliability and Safety by B.S. Dhillon
5.	Industrial Robotics by M.P. Groovers et al.

Teaching Plan

Unit No	No. of Lect. Planed	Topic to be covered	Proposed date (as per time table)	Actual Date	Remarks
1. **Introduction**	1	Introduction to Syllabus	27.01.2026		
	2	Robot definition	28.01.2026		
	3	——————do——————	29.01.2026		
	4	Need of Robots	30.01.2026		
	5	Robot terminology	03.02.2026		
	6	——————do——————	04.02.2026		
	7	Robot motion	05.02.2026		
	8	Robot classification based on physical configuration	06.02.2026		
	9	——————do——————	10.02.2026		
	10	Advantages and limitations of robot.	11.02.2026		
2. **Basic Elements of Robots**	11	Basic structure	12.02.2026		
	12	Classification of robotic systems--according to types of system	13.02.2026		
	13	Classification of robotic systems--according to control loop	17.02.2026		
	14	Classification of robotic systems--according to structure of manipulator (Cartesian, cylindrical, spherical and articulated).	18.02.2026		
	15	Degree of freedom	19.02.2026		
	16	End effectors- types, working principle and applications	20.02.2026		
	17	————————do——————————	24.02.2026		
	18	Drives- types and application with working principle.	25.02.2026		
	19	————————do——————————	26.02.2026		
	20	Sensing Devices- optical sensor	27.02.2026		
	21	Sensing Devices-proximity sensor-LVDT	03.03.2026		

	22	Sensing Devices- Force sensor (strain gauges and piezoelectric)	05.03.2026		
	23	---------do----------	06.03.2026		
	24	CT-1	10.03.2026		
	25	Temperature sensors- RTD and thermocouple	11.03.2026		
	26	Motion encoders	12.03.2026		
	27	Selection Criteria for Robot.	13.03.2026		
	28	----------do----------	17.03.2026		
3. Robot controls	29	Purpose of Robot contol	18.03.2026		
	30	Level of controls	19.03.2026		
	31	Device controller Work cell controller	20.03.2026		
	32	Servo and Non-servo control systems – types, basic principle and block diagrams, Working, advantages, limit at ions	24.03.2026		
	33	----------do----------	25.03.2026		
	34	Adaptive control	27.03.2026		
	35	Computed Torque Technique	31.03.2026		
	36	New minimum time control	01.04.2026		
	37	Resolved motion Control	02.04.2026		
	38	---------do----------	07.04.2026		
	39	CT-2	08.04.2026		
4. Robot Programming	40	Need and function of robot programming	09.04.2026		
	41	Methods: Manual Teaching	10.04.2026		
	42	Methods: Manual Teaching	16.04.2026		
	43	Lead through Programming languages (VAN, RAIL)	17.04.2026		
	44	----------do----------	21.04.2026		
	45	Types, features and applications of various programming language	22.04.2026		
	46	----------do----------	23.04.2026		
	47	----------do----------	24.04.2026		
5. Robot Programming	48	Robot applications- Material transfer	28.04.2026		
	49	Robot applications- Machine loading and unloading	29.04.2026		
	50	Robot applications- painting	30.04.2026		
	51	Robot applications- packaging	12.05.2026		
	52	Robot applications- inspection	13.05.2026		
	53	Robot applications- welding	14.05.2026		

	54	----------do----------	15.05.2026		
	55	DCS	19.05.2026		
	56	DCS	20.05.2026		
	57	DCS	21.05.2026		
	58	DCS	22.05.2026		

Home Assignments

Ass. No	Contents of Syllabus Covered	Proposed date	Actual Date	Remarks
1	Unit-1&2	02.03.2026		
2	Unit-3&4	01.04.2026		
3				

Class /House Test

Name of Test	Syllabus Covered in Tests (Unit/Chapter Wise)	Proposed date	Actual Date	Remarks
Class Test-I	30% of whole syllabus	10.03.2026		
Class Test-II	60% of whole syllabus	08.04.2026		
House Test	80% of whole syllabus	As per HPTSB Academic Calendar Schedule		

Signature of Course Teacher with Name

MANOJ KUMAR

Approved by

OiC/HoD/Principal

GOVT. POLYTECHNIC, HAMIRPUR
(H.P.) Lesson Planning and Coverage

Semester: 6th

Branch: Mech Engineering

Session: Jan-May 2026

Subject: Indian Constitution

Laboratory: No

Teacher: Shraddha Devi

Sr. No.	No of Lectures	Chapter/Unit Description	Detailed contents	Reference Resources	Remarks
1	8	Introduction to Constitution	History of making of the Indian Constitution. Meaning and importance of the Constitution. Salient features and Preamble of Indian Constitution. Fundamental rights- meaning and limitations. Directive principles of state policy and Fundamental duties - their enforcement and their relevance.	R1, R2,R3	
2	8	Union Government	Structure of Union Government. Union Executive- President, Vice-president, Prime Minister, Council of Ministers. Union Legislature- Parliament and Parliamentary proceedings. Union Judiciary-Supreme Court of India – composition and powers and function.	R1, R2,R3	

3	10	State and Local Governments	Structure of State Government. State Executive-Governor. Chief Minister. Council of Ministers. State Legislature-State Legislative Assembly and State Legislative Council. State Judiciary-High court.	R1, R2,R3	
			Local Government-Panchayat raj system with special reference to 73rd and Urban Local Self Govt. with special reference to74th Amendment.		
4	6	Election provisions, Emergency provisions, Amendment of the constitution	Election Commission of Indiacomposition, powers and functions and electoral process. Types of emergency-grounds, procedure, duration and effects. Amendment of the constitution- meaning, procedure and limitations.	R1, R2,R3	

References:

R1: "Introduction to the Constitution of India"by M.V.Pyle,.4th Edition, Vikas publication,2005

R2: The Constitution of India by B.L. Fadia, Sahitya Bhawan, New Edition 2017

R3: "Introduction to the constitution of India" by Durga Das Basu (DD Basu) ,

COURSE OUTCOMES:

After completing this course students will be able to:

CO-1 Understand and explain the significance of Indian Constitution as the fundamental law of land.

CO-2 Exercise his fundamental rights in proper sense at the same time identifies his responsibilities in national building.

CO-3 Analyse the Indian political system, the powers and functions of the Union, State and Local Governments in detail.

CO-4 Understand Electoral Process, Emergency provisions and Amendment procedure.

Signature of Teacher with Date

Signature of HOD