Atal Bihari Vajpayee Govt Institute of Engineering & Technology

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

Name of Faculty	**Parul Dhiman**	Academic Session	**Aug-Nov 2026**
Course Name	**MATERIAL HANDLING SYSTEM**	Scheme	**N- 2022**
Course Code	**MEPE301-3**	Semester	**5th**
Course Type	**Program Elective core course**	Semester Start Date	**01/08/2026**
L-T-P	**4-0-0**	Semester End Date	**28/11/2026**

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 constructional & operational features of various materials handling systems.
CO2	Identify, compare & select proper material handling equipment for specified applications.
CO3	Know the controls & safety measures in corporate on material handling equipment.
CO4	Appreciate the role of material handling devices in mechanization & automation of industrial process.
CO5	Understand & appreciate safety instrumentation for equipment

Recommended Books	
1.	Material handling (Principles & Practice)–Allegri T.H.,CBS Publisher, New Delhi.
2.	Plant Layout & Materials Handling–Apple J.M., John Wiley Publishers.
3.	Material Handling Equipment–N. Rundenko, Peace Publisher, Moscow.
4.	Material Handling Equipment–M.P. Alexandrov, MIR Publisher, Moscow
5.	Material Handling Equipment–Y.I. Oberman ,MIR Publisher, Moscow.

Teaching Plan

Unit No	No. of Lect. Planned	Topic to be covered	Proposed date (as per time table)	Actual Date	Remarks
1.Introduction to Material Handling System	1	Introduction to Syllabus	03/08/2026		
	2	Main types of Material handling equipments	05/08/2026		
	3	Their applications	07/08/2026		
	4	Types of load to be handled	17/08/2026		
	5	Types of Movements	19/08/2026		
	6	Methods of stacking, loading & unloading systems	21/08/2026		
	7	Principles of Material Handling Systems	22/08/2026		
	8	Modern trends in Materials handling	24/08/2026		
2. Hoisting Machinery & Equipments	9	Construction, Working & Maintenance of different types of hoists such as Lever operated hoist	26/08/2026		
	10	Portable hand chain hoist	28/08/2026		
	11	Differential hoists	29/08/2026		
	12	Construction, Working & Maintenance of different types of cranes such as Rotary cranes	31/08/2026		
	13	Trackless cranes	02/09/2026		
	14	Mobile cranes	05/09/2026		
	15	Bridge cranes, Cable cranes	07/09/2026		
	16	Floating cranes	11/09/2026		
	17	Cranes traveling on guide rails	14/09/2026		
3. Conveying Machinery	18	Construction, Working & Maintenance of Traction type conveyors such as Belt conveyors	16/09/2026		
	19	Chain conveyors	18/09/2026		
	20	Bucket elevators	19/09/2026		
	21	Construction, Working & Maintenance of Traction less type conveyors such as Gravity type conveyors	21/09/2026		

	22	Vibrating & Oscillating conveyors	23/09/2026		
	23	Screw conveyors	25/09/2026		
	24	Pneumatic & Hydraulic conveyors	26/09/2026		
	25	Construction, Function, Working of following Trackless equipment:- Hand operated trucks	28/09/2026		
	26	Powered trucks, Tractors	30/09/2026		
	27	Automatic Guided vehicle, Industrial Trailers	03/10/2026		
4. Components of Material Handling Systems	28	Flexible hoisting appliances such as Welded load chains, Roller chains	05/10/2026		
	29	Hemp ropes, Steel wire ropes	09/10/2026		
	30	Fastening methods of wire & chains, Eyebolts	12/10/2026		
	31	Lifting tackles, Lifting & Rigging practices	14/10/2026		
	32	Load handling attachments: a) Various types of hooks- Forged, Triangular eyehooks	16/10/2026		
	33	Appliances for suspending hooks b) Electric lifting magnet, vacuum lifter	17/10/2026		
	34	Crane attachment for handling liquids/molten metals	19/10/2026		
	35	Construction & use of electromagnetic shoe brakes, Thruster operated shoe brakes, Control brakes.	21/10/2026		
5. Mechanism used in Material Handling Equipment	36	Steady state motion; Starting & stopping of motion in following mechanisms Hoisting mechanism	23/10/2026		
	37	Lifting Mechanism	24/10/2026		
	38	Traveling Mechanism	28/10/2026		
	39	Rope & chain operated Cross-Traverse Mechanism	30/10/2026		
	40	Factors affecting choice of material handling equipment such as Type of loads	31/10/2026		
	41	Hourly capacity of the unit	07/11/2026		
	42	Direction & length of travel	13/11/2026		
	43	Nature of production process involved	16/11/2026		
	44	Specific load conditions	18/11/2026		
	45	Economics of material handling system	20/11/2026		
	46	Revision	21/11/2026		
	47	Revision	23/11/2026		
	48	Revision	25/11/2026		
	49	Revision	27/11/2026		
	50	Revision	28/11/2026		

Home Assignments

Ass. No	Contents of Syllabus Covered	Proposed date	Actual Date	Remarks
1	Unit-1&2	19/09/2026		
2	Unit-3&4	24/10/2026		
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
(Parul Dhiman)

Approved by

OIC/HoD/Principal