

**GOVERNMENT POLYTECHNIC JAJPUR**

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**DEPARTMENT OF MECHANICAL ENGINEERING  
LESSON PLAN**

<b>Discipline: Mechanical</b>	<b>Semester: 3RD</b>	<b>Name of the Teaching faculty: Manas Kumar Mishra</b>
<b>Subject: ME LAB 1</b>	<b>No of Days/Week class allotted:</b>	<b>Semester from Date: 5/10/21 To Date: 30/1/22 No of weeks: 15</b>
<b>Week</b>	<b>Class Day</b>	<b>Topics</b>
1st	1st (1p), Gr 1&2	Syllabus, Lesson Plan, Cos, Exam and Evaluation Scheme.
	2nd (3p), Gr 1	Determine end reactions in a simply supported beam using parallel force apparatus.
		i) Aim of the expt, Theory
		ii) Tools and Equipments required
	3rd (3p), Gr 2	iii) Demonstration
		Determine end reactions in a simply supported beam using parallel force apparatus.
i) Aim of the expt, Theory		
ii) Tools and Equipments required		
iii) Demonstration		
2nd	1st (1p), Gr 1&2	Determine end reactions in a simply supported beam using parallel force apparatus.
		i) precautions
		ii) handling of the equipment
	2nd (3p), Gr 1	Determine end reactions in a simply supported beam using parallel force apparatus.
		i) Taking readings for calculation of end reactions by students
		ii) viva, records checking
3rd (3p), Gr 2	Determine end reactions in a simply supported beam using parallel force apparatus.	
	i) Taking readings for calculation of end reactions by students	
	ii) viva, records checking	
3rd	1st (1p), Gr 1&2	Determination of Young's modulus using Searle's apparatus
		i) Aim of the expt, Theory
	2nd (3p), Gr 1	Determination of Young's modulus using Searle's apparatus
		i) Tools and Equipments required
	3rd (3p), Gr 2	ii) Demonstration of experiment
		Determination of Young's modulus using Searle's apparatus
i) Tools and Equipments required		
ii) Demonstration of experiment		
1st (1p), Gr 1&2	Determination of Young's modulus using Searle's apparatus	
	i) Taking readings for calculation of youngs modulus by students	
2nd (3p), Gr 1	Determination of Young's modulus using Searle's apparatus	

4th		i) Taking readings for calculation of young's modulus by students
		ii) viva, record checking
		Determination of torsional rigidity of the shaft using torsion testing machine
	3rd (3p), Gr 2	i) Aim of the expt, Theory
		Determination of Young's modulus using Searle's apparatus
		i) Taking readings for calculation of young's modulus by students
5th	1st (1p), Gr 1&2	ii) viva, record checking
		Determination of torsional rigidity of the shaft using torsion testing machine
		i) Aim of the expt, Theory
	2nd (3p), Gr 1	Determination of torsional rigidity of the shaft using torsion testing machine
		i) Tools and Equipments required
		ii) specimen preparation
		Determination of torsional rigidity of the shaft using torsion testing machine
		i) Demonstration of experiment
		ii) precautions and handling of machine tool
	3rd (3p), Gr 2	iii) taking readings for calculation of torsional rigidity by students
		Determination of torsional rigidity of the shaft using torsion testing machine
		i) Demonstration of experiment
ii) precautions and handling of machine tool		
iii) taking readings for calculation of torsional rigidity by students		
Determination of torsional rigidity of the shaft using torsion testing machine		
6th	1st (1p), Gr 1&2	i) Taking readings for torsional rigidity by students
		Determination of torsional rigidity of the shaft using torsion testing machine
		i) Taking readings for calculation of end reactions by students
	2nd (3p), Gr 1	ii) viva, records checking
		Determination of salient points (Young's modulus, yield point, fracture point) from stress- strain curve using Universal Testing Machine
		i) Aim of the expt, Theory
		Determination of torsional rigidity of the shaft using torsion testing machine
		i) Taking readings for calculation of end reactions by students
		ii) viva, records checking
	3rd (3p), Gr 2	Determination of salient points (Young's modulus, yield point, fracture point) from stress- strain curve using Universal Testing Machine
		i) Aim of the expt, Theory
		Determination of salient points (Young's modulus, yield point, fracture point) from stress- strain curve using Universal Testing Machine
i) Tools and Equipments required		
ii) specimen preparation		
Determination of salient points (Young's modulus, yield point, fracture point) from stress- strain curve using Universal Testing Machine		
7th	1st (1p), Gr 1&2	i) Demonstration of experiment
		ii) precautions and handling of machine tool
		iii) testing of standard specimen in UTM by students

	3rd (3p), Gr 2	Determination of salient points (Young's modulus, yield point, fracture point) from stress- strain curve using Universal Testing Machine i) Demonstration of experiment ii) precautions and handling of machine tool iii) testing of standard specimen in UTM by students
8th	1st (1p), Gr 1&2	Determination of salient points (Young's modulus, yield point, fracture point) from stress- strain curve using Universal Testing Machine i) testing of standard specimen in UTM by students
	2nd (3p), Gr 1	Determination of salient points (Young's modulus, yield point, fracture point) from stress- strain curve using Universal Testing Machine i) testing of standard specimen in UTM by students ii) viva, records checking
	3rd (3p), Gr 2	Determination of salient points (Young's modulus, yield point, fracture point) from stress- strain curve using Universal Testing Machine i) testing of standard specimen in UTM by students ii) viva, records checking
9th	1st (1p), Gr 1&2	Determination of hardness number by Rockwell/Vickers hardness testing machine i) Aim of the expt, Theory ii) Tools and Equipments required
	2nd (3p), Gr 1	Determination of hardness number by Rockwell/Vickers hardness testing machine i) Demonstration of experiment ii) precautions and handling of machine tool iii) testing of standard specimen
	3rd (3p), Gr 2	Determination of hardness number by Rockwell/Vickers hardness testing machine i) Demonstration of experiment ii) precautions and handling of machine tool iii) testing of standard specimen
10th	1st (1p), Gr 1&2	Determination of hardness number by Rockwell/Vickers hardness testing machine i) result analysis ii) viva, records checking
	2nd (3p), Gr 1	Determination of toughness using Impact testing machine (Charpy/Izod) i) Aim of the expt, Theory ii) specimen preparation
	2nd (3p), Gr 2	Determination of toughness using Impact testing machine (Charpy/Izod) i) Aim of the expt, Theory ii) specimen preparation
	1st (1p), Gr 1&2	Determination of toughness using Impact testing machine (Charpy/Izod) i) specimen preparation Determination of toughness using Impact testing machine (Charpy/Izod)

11th	2nd (3p), Gr 1	i) Demonstration of experiment ii) precautions and handling of machine tool iii) testing of standard specimen
	2nd (3p), Gr 2	Determination of toughness using Impact testing machine (Charpy/Izod) i) Demonstration of experiment ii) precautions and handling of machine tool iii) testing of standard specimen
12th	1st (1p), Gr 1&2	Determination of toughness using Impact testing machine (Charpy/Izod) i) viva, records checking
	2nd (3p), Gr 1	Determination of Flash point and fire point i) Aim of the expt, Theory ii) apparatus and consumables required iii) Demonstration of experiment
	2nd (3p), Gr 2	Determination of Flash point and fire point i) Aim of the expt, Theory ii) apparatus and consumables required iii) Demonstration of experiment
13th	1st (1p), Gr 1&2	Determination of Flash point and fire point i) testing of specimen for flash point and fire point
	2nd (3p), Gr 1	Determination of Flash point and fire point i) testing of specimen for flash point and fire point ii) record checking iii) viva
	2nd (3p), Gr 2	Determination of Flash point and fire point i) testing of specimen for flash point and fire point ii) record checking iii) viva
14th	1st (1p), Gr 1&2	Joule's experiment i) Aim of the expt, Theory
	2nd (3p), Gr 1	Joule's experiment i) apparatus and experimental set up required ii) Demonstration of experiment
	2nd (3p), Gr 2	Joule's experiment i) apparatus and experimental set up required ii) Demonstration of experiment
15th	1st (1p), Gr 1&2	Joule's experiment i) establishment of relation between work and heat through experiment
	2nd (3p), Gr 1	Joule's experiment i) viva, records checking Any skipped experiments to be done by students
	2nd (3p), Gr 2	Joule's experiment i) viva, records checking Any skipped experiments to be done by students

Mishra  
Sign of faculty  
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lect, Mechanical