

LESSON PLAN FOR THE ACADEMIC SESSION 2026-27(WINTER)

Discipline: Mechanical Engg. (Group-I&II)	Semester: 3rd	Name of the Teaching Faculty: Baneswar Munda Designation: Sr Lecturer Name of the Supporting Faculty : Laxman Hembram (Lab. Asst. Mechanical)
Subject: Material Testing and Metallography Lab	No. of days/week class allotted: 02	Semester From: 01.07.2026 to 05.11.2026 No. of weeks: 15
Week	Class Day	Theory/Practical Topics
1 ST	1 st	1.E-Learning, and Demonstration and Prepare a specimen of the Ferrous and Non- ferrous metals for examine the microstructure in Metallurgical Microscope
	2 nd	Demonstration and Prepare a specimen of the Ferrous and Non- ferrous metals and examine the microstructure in Metallurgical Microscope
2 ND	1 st	Examine the microstructure of specimen of the Ferrous and Non- ferrous metals in Metallurgical Microscope and note it
	2 nd	Record Check
3 RD	1 st	2.Record Check and E-Learning, and Demonstration of Detection the cracks in the specimen
	2 nd	Demonstration and Prepare a specimen and detect cracks in the specimen using Crack Testing Machine. And note it.
4 TH	1 st	Demonstration and detect cracks in the specimen using Crack Testing Machine. And note it.
	2 nd	Record Check
5 TH	1 st	3.Record Check and E-Learning, and Demonstration of Rockwell's Hardness Number for various materials like mild steel, high carbon steel, brass, copper and aluminium.
	2 nd	Demonstrate and preparation of speciman for various materials like mild steel, high carbon steel, brass, copper and aluminium. And Determination of Rockwell's Hardness Number.
6 TH	1 st	Demonstrate and Determination of Rockwell's Hardness Number.
	2 nd	Record Check
7 TH	1 st	4.Record Check and E-Learning, and Demonstration of Finding the resistance of materials of Izod test and Charpy test using Impact Test Machine.
	2 nd	Demonstration and Prepare a specimen of Izod test and Charpy test.and Finding the resistance of material using Impact Test Machine.
8 TH	1 st	Demonstration and Finding the resistance of material by Izod test and Charpy test using Impact Test Machine.
	2 nd	Record Check
9 th	1 st	5.Record Check and and E-Learning, and Demonstration of Torsion test on mild steel – relation between torque and angle of twist determination of shear modulus and shear stress.
	2 nd	Demonstrate and preparation of specimen for Torsion test on mild steel and note – relation between torque and angle of twist determination of shear modulus and shear stress.

10 TH	1 st	Demonstrate and determination of shear modulus and shear stress. and note relation between torque and angle of twist
	2 nd	Record Check
11 TH	1 st	6.Record Check and E-Learning, and Demonstration of Finding Young's Modulus of Elasticity, yield points, percentage elongation and percentage reduction in area, stress strain diagram plotting, tests on mild steel using UTM Machine. .
	2 nd	Demonstrate and preparation of specimen for Finding Young's Modulus of Elasticity, yield points, percentage elongation and percentage reduction in area, stress strain diagram plotting, tests on mild steel using UTM Machine.
12 TH	1 st	Demonstrate and Finding Young's Modulus of Elasticity, yield points, percentage elongation and percentage reduction in area, stress strain diagram plotting, tests on mild steel using UTM Machine.
	2 nd	Record Check
13 TH	1 st	7.Record Check and E-Learning, and Demonstration of Determination of modulus of rigidity, strain energy, shear stress and stiffness by load deflection method (Open & Closed coil spring)
	2 nd	E-Learning, and Demonstration of Determination of modulus of rigidity, strain energy, shear stress and stiffness by load deflection method (Open & Closed coil spring)
14 TH	1 st	Record Check
	2 nd	8.Record Check and E-Learning, and Demonstration of Single or double Shear test on M.S. bar to finding the resistance of material to shear load.
15 TH	1 st	E-Learning, and Demonstration of Single or double Shear test on M.S. bar to finding the resistance of material to shear load.
	2 nd	Record Check
TOTAL NO. OF CLASSES= 30 & Each Class of 2 Hrs Duration.		

Prepared By:

Baneswar Munda
Laxman Hembram

Baneswar Munda

Sr Lecturer (Mechanical)

Govt. Polytechnic, Sonapur

Laxman Hembram (Lab. Asst. Mechanical)

Checked by:

[Signature]
30/06/2026
H.O.D.

Dept. of Mech. Engg.

Govt Polytechnic, Sonapur

Approved by:

[Signature] 30/06/2026
Academic Coordinator
Govt. Polytechnic, Sonapur