

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF
ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN
Session-2023-2024

Discipline: Metallurgy Engg. Semester: 4th

Subject: Material Testing

Name of the Teaching Faculty: Shashanka Sekhar Bhoi

Subject: MT No. of Days/per week class allotted : 04

Semester From Date : 16-01-2024 To Date : 26-04-2024 No. of Weeks : 15

Week	Class Day	Theory / Practical Topics
01	01	Introduction to Hardness Test.
	02	Brinell Hardness Test.
	03	Vickers Hardness Test.
	04	Rockwell Hardness Test.
02	01	Rebound Hardness
	02	Shore's Scleroscope.
	03	Scratch Hardness
	04	Moh's scale.
03	01	Imperial Relationship of hardness with strength.
	02	Overall chapter discussion.
	03	Introduction to Tensile Test.
	04	Draw stress-strain curve.

Signature of the Faculty

subject: MT No. of Days/per week class allotted : 04

Semester From Date : 16-01-2024 To Date : 26-04-2024 No. of Weeks : 15

Week	Class Day	Theory / Practical Topics
04	01	Explain stress-strain curve.
	02	Modulus of elasticity -
	03	Proof stress.
	04	Yield point phenomenon.
05	01	True stress
	02	True strain curve
	03	Ductility
	04	Toughness.
06	01	Introduction to Impact test -
	02	Define impact strength.
	03	Charpy test
	04	Izod impact test -


Signature of the Faculty

Subject: MT No. of Days/per week class allotted : 04

Semester From Date : 16-01-2024 To Date : 26-04-2024

No. of Weeks : 15

Week	Class Day	Theory / Practical Topics
07	01	Discuss about transition temperature and ductility -
	02	Brittle fracture .
	03	Introduction to Fatigue test .
	04	Explain different stress cycles .
08	01	Describe S.N curve .
	02	Endurance limit .
	03	Explain the procedure of fatigue testing
	04	Fatigue testing machine .
09	01	Different metallurgical factors that affect fatigue behavior .
	02	Overall chapter discussion .
	03	Introduction to creep test .
	04	creep and its importance .


Signature of the Faculty

Subject: MT No. of Days/per week class allotted : 04

Semester From Date : 16-01-2024 To Date : 26-04-2024 No. of Weeks : 15

Week	Class Day	Theory / Practical Topics
10	01	Discuss engineering creep curve, constant creep curve and andrad concept.
	02	Explain equicohesive temperature, various factors that effect creep.
	03	Describe creep testing machine.
	04	stress rupture test.
11	01	Introduction to non destructive Testing
	02	Scope of NDT.
	03	Elementary idea about different NDT.
	04	Significance of NDT.
12	01	Visual testing.
	02	Leakage testing.
	03	Magnetic particle testing.
	04	Dye penetration test.



Signature of the Faculty

Subject: M7 No. of Days/per week class allotted : 04

Semester From Date : 16-01-2024 To Date : 26-04-2024 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
13	01	Acoustic methods and ultrasonic testing
	02	Ultrasonic testing.
	03	Eddy current testing.
	04	X-ray diffraction.
14	01	Doubt clear class.
	02	Overall chapter discussion.
	03	Temperature measurement.
	04	Calibration.
15	01	Analysis the basic principle of pyrometry.
	02	Explain the different types of pyrometer
	03	Thermocouples.
	04	Overall chapter discussion.


Signature of the Faculty