Course Number and Name
BME4L1 - METROLOGY & METALLURGY LAB
Credits and Contact Hours
2 & 45
Course Coordinator's Name
Ms.Sucharitha
Text Books and References
Lab Manual
Course Description
To make the students understand the concept of standardization and interchangeability To familiarize the students with metallographion structures of different materials.

Prerequisites	Co-requisites
Nil	Metrology

required, elective, or selected elective (as per Table 5-1)
Required

Course Outcomes (COs)	
CO1	Students will understand the difference between accuracy and precision
CO2	Students will be aware of different measuring equipments .
CO3	Student will have hands on experience in handling a metallurgical microscope .
CO4	Student will understand metallographic structures of different materials.
CO5	Student will understand crystallographic structures of different materials.
CO6	Students will learn to measure the profile of a gear.

Student Outcomes (SOs) from Criterion 3 covered by this Course

COs/SOs	a	b	c	d	e	f	g	h	i	j	k	l
CO1	H								M			
CO2											H	L
CO3									M			
CO4												L
CO5												
CO6					H				M			

List of Topics Covered

LIST OF EXPERIMENTS:

METROLOGY LABORATORY

1. Estimation of accuracy of instruments-vernier and micrometer.
2. Calibration of dial gauge, micrometer and vernier.
3. Measurement of angles using sine bar, bevel protractors, spirit level.
4. Measurement of gear tooth thickness by various methods including profile projector.
5. Measurement of effective diameter, pitch and helix angle of screw threads by profile projector.

METALLURGY LABORATORY

1. Study of metallurgical microscope
2. Preparation of specimen for metallographic observation of white Cast Iron, Grey Cast Iron, Malleable Iron.
3. Preparation of specimen for metallographic observation of Mild Steel, Low Carbon Steel, Medium Carbon Steel, Tool Steel, and High speed Steel, and Stainless steel.
4. Preparation of specimen for metallographic observation of Copper-bronze, Copper brass.