BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, Pilani
Pilani Campus

INSTRUCTION DIVISION

FIRST SEMESTER 2016-2017

Course Handout (Part-II)

Date: 02/08/2016

Course No. : **ME F215/MF F215**

Course Title : **MECHANICAL ENGINEERING LABORATORY**

Instructor-in-charge : **ARUN KUMAR JALAN**

Instructor : Srinivas Kota, Sharad Shrivastava, Girish Kant, Sandeep Dhar, Shivani Nain, Neha Arora, Paridhi puri, Nilesh purohit, Nitesh Sihag, Sanjeev Jakhar, Sangram Kegridas, Kiran Raj, Rajesh Kumar

Scope and objective of the course:

The objective of the course is to train the students in the skill of operation of instruments and equipments related to mechanical engineering, Course will mainly focus on testing of mechanical properties like tensile testing, hardness, impact, bending of beams. Basic fluid mechanics experiments like measurements of pressure, temperature, viscosity, flow measurement, basic electrical & electronics engineering like experiments on power measurements, transformers, induction motors. LVDT Transducers, logic gates etc. This course will also expose the students to a broad knowledge of experimental methods and measurement techniques.

Laboratory Manual (LM): "A Laboratory Manual for MECHANICAL ENGINEERING LABORATORY (Enlarge and Edited Version of Measurement Techniques-II: TA C 222)", Digalwar, A. K. et al., EDD Notes.

Reference Books:

R1: Holman J.P., "Experimental Methods for Engineers," TATA McGRAW HILL, 7th ed., 2004.

Laboratory Plan:

Exp. No.	Name of Experiment	Ref
MEL1	Determine the modulus of elasticity of mild steel specimen using tensile test	LM: ME1
MEL2	Determine the modulus of elasticity of mild steel specimen using bending test.	LM: ME2
MEL 3	(a) Vicker's Hardness Testing Machine and correlate them with the Ultimate Tensile Strength (UTS) of the materials (b) Measurement of hardness of the given samples using Rockwell Hardness Testing Machine	LM: ME6 LM: ME5

MEL 4	Verification of Bernoulli's theorem	LM: CH5
MEL 5	Study of logic gates and combinations	LM: EEE 1
MEL 6	Hardware familiarity, component study and operational amplifier circuits	LM: EEE 3
MEL 7	Measurement of electrical variables in single phase circuit	LM: EEE 4
MEL 8	Measurement of hardness of the given samples using Brinell Hardness Testing Machine and correlate them with the ultimate Tensile Strength(UTS) of the Materials	LM: ME 4
MEL9	To estimate and compare the shock resistance qualities of the materials by conducting Impact Test	LM: ME 7
MEL10	(a) Perform Torsion test to find modulus of elasticity (b) Study of Fatigue Testing Machine	LM: ME 8 Class Note
MEL 11	(a) Study of Viscosity Coefficient (b) Study of Reynold's apparatus	LM: CH 2 LM: CH 3
MEL12	Test on single phase induction motor	LM: EEE 2
MEL13	Determination of sensitivity of LVDT transducer	LM: EEE 5
MEL14	Test on single phase transformer	LM: EEE 6

Laboratory Location : Material testing laboratory Room No 2104

Lab Cycle Details:

Lab Cycle I : Exp No MEL 1 to MEL 7
Lab Cycle II : Exp No MEL 8 to MEL14

Evaluation Scheme:

Component	Duration	Marks	Weightage (%)	Date & Time	Remarks
Lab. Expt. 1st cycle	14 Hr	70	35	TBA	OB
Viva -I		10	5	TBA	CB
Lab. Expt. 2nd cycle	14 Hr	70	35	TBA	OB
Viva -II		10	5	TBA	CB
Lab. Test -1	01 Hr	20	10	TBA	CB
Lab. Test -2	01 Hr	20	10	TBA	CB
TOTAL		**200**	**100**		

Makeup Policy: Makeup will be granted only for genuine cases:
Chamber Consultation hours: Wednesday 3.30 pm to 5.30 pm Chamber no: 2152-C
Notices: Notices concerning the course will be displayed only on Nalanda and Mechanical Lab Notice board

Instructor-in-charge

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