BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI – HYDERABAD CAMPUS
INSTRUCTION DIVISION

FIRST SEMESTER 2016-2017

Course Handout (Part II)

Date: 1/08/2016

In addition to part-I (General Handout for all courses appended to the time table), this portion gives further specific details regarding the course.

Course No. : **ME F215**
Course Title : **Mechanical Engineering Laboratory**
Instructor-in-charge : **AMRITA PRIYADARSHINI**

Team of Instructors : Amrita Priyadarshini, Pavan Kumar, P Shravya

1. **Scope and Objective:** The objective of this course is to expose the students to a broad knowledge of experimental methods and measurement techniques useful in Mechanical engineering.

2. **Text Books / Manuals:**

Holman J.P., "Experimental Methods for Engineers," Tata McGraw Hill, 7th ed., 2004.

A Laboratory Manual pertaining to the experiment will be provided

Reference Books:

Doebelin E.O. "Measurement Systems: Application and Design" TATA McGraw HILL, 5th ed.2003

Welty James R., Charles E. Wicks and Robert E. Wilson, "Fundamentals of Momentum, Heat and Mass Transfer", John Wiley & Sons, New York, 1984.

Modi P.N. and S.M Seth, "Hydraulics and Fluid Mechanics," Standard Publishers, 12th ed. 1998.

3. **List of Experiments:**

Following is the list of experimental set ups on which experiments shall be conducted. Complete modalities of operation of the laboratory such as the exact titles of experiments, reports submission and evaluation methodology etc. shall be announced at the beginning of laboratory session.

	Exp. No.	Experimental Setup	Location to perform experiment
CYCLE I	1	ROCKWELL HARDNESS TESTING	Material Testing Lab **E-block cellar**
	2	BRINELL HARDNESS TESTING (Al & MS)	
	3	TENSILE TEST(COMPRESSION & TENSILE)	
	4	IMPACT TESTING(IZOD/CHARPY)	
	5	CRYSTALLOGRAPHY (MS)	
	6	CRYSTALLOGRAPHY (Al)	
	7	TORSION TEST	
	8	SPRING TEST	
CYCLE II	9	FLOW MEASUREMENT USING VENTURIMETER	HFM Lab **E-122**
	10	CALIBRATION OF ORIFICE METER	
	11	VERIFICATION OF BERNOULLI'S THEORM	
	12	STUDY OF REYNOLD'S APPARATUS	
	13	MEASUREMENT OF ELECTRICAL VARIABLES IN SINGLE PHASE CIRCUIT	Electrical Machines Lab **E-block entrance**
	14	DETERMINATION OF SENSITIVITY OF LVDT	
	15	TESTS ON DC SHUNT MOTOR	
	16	TESTS OF SINGLE PHASE TRANSFORMER	

DEMONSTRATION		
17	CALIBRATION OF THERMOCOUPLE	Will be announced later
18	MEASUREMENT OF POWER IN 3-PHASE CIRCUITS	Will be announced later
19	FATIGUE TEST	Will be announced later
20	VICKER'S MICRO HARDNESS TESTER	Will be announced later

2. Evaluation Schedule:

Component	Duration	Weightage (%)	Date & Time	Remarks
Lab reports		20	Continuous	--
Lab viva		10	Continuous	--
Lab Compre and Viva	2 hours	30		CB
Compre. (MCQ + Fill up the blanks)	1 hour	40		CB

3. Chamber consultation hours: To be announced in the class.

4. Notices: Notices pertaining to this course will be displayed on CMS only.

Make-up Policy: Make-up is strictly not entertained and may be considered only in the case of hospitalization with appropriate certification.

AMRITA PRIYADARSHINI
Instructor-in-charge
ME F215