GUJARAT TECHNOLOGICAL UNIVERSITY

WORKSHOP PRACTICE (Modified on 4th Feb 2014)
SUBJECT CODE: 2110012
B.E. 1st YEAR

Type of course: Engineering Science

Prerequisite: Zeal to learn the subject

Rationale: Workshop practice is the backbone of the real industrial environment which helps to develop and enhance relevant technical hand skills required by the technician working in the various engineering industries and workshops. Irrespective of branch, the use of workshop practices in day to day industrial as well domestic life helps to dissolve the problems.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P	C	Theory Marks		Practical Marks		
				ESE (E)	PA (M)	ESE Viva (V)	PA (I)	
0	0	4	4	0	0	80#	20	100

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Contents:

Introduction to various shops / sections and workshop layouts. Safety norms to be followed in a workshop should be conveyed to students.

Demonstration of hand tools, power tools, machine tools, basic measuring instruments, materials, Marking and measurement in Carpentry, Fitting, Smithy, Welding, Tin smithy, Plumbing and Machine shop.

Practice:

Students are required to prepare one job each in any three of the four shops viz. Fitting, Carpentry, Smithy and Tin smithy.

Journal is to be prepared covering the topics of demonstration and report about process / methodology / inspection for making jobs.

Open Ended Problems: Apart from above practice jobs a group of students has to undertake one open ended problem/design problem. Few examples of the same are given below.

1. Prepare a working model of a toy

Prepare a game/puzzle games

Reference Books:

1. Mechanical Workshop Practice by K C John, PHI Learning
2. Workshop Technology Vol. 1 and 2 by Raghuvanshi B.S. Dhanpat Rai & Sons 1998
3. Workshop Technology by Chapman W.A. J and Arnold E. Viva low priced student edition, 1998

4. Workshop Practices, H S Bawa, Tata McGraw-Hill, 2009
5. Workshop Practices and Materials, B J Black, CRC Press.

Course Outcome:

After learning the course the students should be able to

1. Understand applications of hand tools and power tools.
2. Understand the operations of machine tools.
3. Select the appropriate tools required for specific operation.
4. Comprehend the safety measures required to be taken while using the tools.

Major Equipments: Fitting, Carpentry and Plumbing vice, various types of files for fitting shop, machine and hand hacksaw, monkey spanner, die, chisels, jack plane, furnace, anvil, different types of hammers for various shops, tongs, scissors, hand shear machine, sheet cutter, arc welding machine, welding goggles, welding gloves, gas welding machine

List of Open Source Software/learning website: http://nptel.iitm.ac.in/courses.php

ESE Pr (V):30 marks for Open Ended Problems, 50 marks for VIVA.

Note: Passing marks for ESE Pract(V) will be 40 out of 80.