Subject Code: 1ET4000109	**Subject Title: Mechanical Workshop Practice**
Pre-Requisite	--

Rationale

Workshop practice is the backbones of the real industrial work situation, which helps in development and enhancement of relevant skills required by the technician working in engineering industries and workshops. The workshop experiences would also help them to understand the complexity of industrial

working in relative shorter duration of time. Moreover, the contents of these curricula form a basis and link for study of manufacturing processes and production technology courses in successive semesters.

The students are advised to undergo each skill experience with an understanding of know-how with special emphasis on know-why for the various instructions/practices imparted to them in each shop

Course Objective:

1. Comprehend the need of various sections in a workshop
2. Demonstrate observance of the safety consciousness and good housekeeping in a workshop
3. Follow the standard procedure for workshop practice.
4. Select and use appropriate materials for various sections of a workshop.
5. Use various tools, instruments and machines for different operations in fitting, smithy, carpentry, pipefitting and metal joining shop.
6. Prepare the required jobs correctly according to given specification in various sections of a workshop as mentioned in 5.

Teaching Scheme (Hours per week)				**Evaluation Scheme (Marks)**				Total (Marks)
Lecture	Tutorial	Practical	Credit	Theory		Practical		
				University Assessment	Continuous Assessment	University Assessment	Continuous assessment	
-	1	2	2	-	-	-	50	50

SR. NO.	TOPIC	THEORY HOURS	PRACT. HOURS
1	**Introduction to Workshop** Workshop layout, Importance of various shops of workshop, type of jobs done in each shop. General Safety aspects in various industries such as process industries, automotive industries, power plant , Oil Industries, Electrical Industries etc.	--	06
2	**Fitting** Fitting tools like - files vice, chisels, punch, scriber, hammers, surface plate, try square, Calipers etc., Fitting operations such as chipping, filing, scraping, grinding, sawing, marking, drilling, reaming, tapping, Safety precautions, Demonstration of various operations, Preparation of male-female joints.	--	16
3	**Smithy** Smithy tool like - hammer, tongs, anvil, flatner etc, Smithy operations such as upsetting, drawing down, bending, setting down, welding, cutting, punching and fullering etc, Safety precautions, Demonstration of various smithy operations.	--	08
4	**Tin Smithy** Tin smithy tools like - hammers, stakes, scissors etc, Sheet metal operations such as shearing bending, joining, Safety precautions, Demonstration of various operations	--	04
5	**Carpentary** Carpentry tools like - saws, planner, chisels, hammers, pallet, marking gauge, vice, try square, rule etc, Carpentry operations such as marking, sawing, planning, chiseling, grooving, boring, joining. Types of woods and carpentry hardware, Safety precautions, Demonstration of various operations using hardware.	--	12
6	**Pipe Fitting** Pipe fitting tools, Pipe fitting operations such as marking, cutting, bending, threading assembling, dismantling etc, Types of various spanners such as flat, fix, ring, box, adjustable etc, Safety precautions, Demonstrations of various operations.	--	06

7	**Metal Joining** Metal joining hand tools and equipment, Metal joining temporary and permanent methods such as, screw, nuts bolts and washers, rivets, keys, pins and welding soldering brazing Demonstrations of metal joining operations, Safety precautions.	**--**	**04**

1. LIST OF EXERCISES

(1) FITTING

Prepare one job on marking, drilling filing and tapping generating different profiles such as pentagon, hexagon etc. Prepare one job on male female fitting.

(2) SMITHY

Prepare one job on upsetting, drawing down, bending, joining, etc.

(3) TIN SMITHY

Prepare one job on sheet metal marking, shearing, flattening, bending and joining

(4) CARPENTARY

Prepare one job on marking, planning, sawing, chiseling and joining.

Prepare one job on marking, sawing, planning, nailing and screwing using plywood/packing wood.

(5) PIPE FITTING

Prepare one job on pipe marking, cutting, threading and assembling. pipe fitting in a group of students.

(6) WELDING

Prepare one job using arc welding.

REFERENCES :

1. Workshop Familiarization E. Wilkinson
2. Workshop Technology - I Hazra and Choudhary
3. Workshop Technology - I W.A.J. Chapman
4. Sheet metal shop practice Bruce & Meyer
5. Workshop Technology Vol. I & II Gupta & Kaushik