

COURSE TITLE : WORK SHOP PRACTICE-III
COURSE CODE : 3027
COURSE CATEGORY : B
PERIODS/ WEEK : 6
PERIODS/ SEMESTER : 90
CREDIT : 3

TIME SCHEDULE

MODULE	TOPIC	PERIODS
1	Machine Shop.	24
2	Fitting	24
3	Sheet metal , Aluminum fabrication.	22
4	Welding	20
TOTAL		90

Course Distribution:

Module	Name of Module	Course Outcome no.	Total periods per semester		
			Instructional	Test	Total
1	Machine Shop.	1 2 3	Theory : Practical :21	3	24
2	Fitting	4	Theory : Practical :21	3	24
3	Sheet metal , Aluminum fabrication.	5	Theory : Practical :21	3	22
4	Welding	6	Theory : Practical :21	3	20
Total periods per semester					90

Remarks based on feedback from students, faculty, industry (revision 2010)

GENERAL INFORMATION:

*Class is divided into 2 batches (Batch I and Batch II). For Batch I –it is M/c. Shop and Fitting shop and for Batch II- it is Sheet metal, Aluminum fabrication And welding. This syllabus should be continued for Semester IV also by interchanging the batch of students.

COURSE OUTCOME :

Sl.No.	Sub	Student will be able to
1	1	Work on Lathes.
	2	Work on shaper machine.
	3	Work on drilling machine.
2	4	Understand the fitting practice and use of gauges.
	5	Work in sheet metal shop and aluminum fabrication
	6	Work on welding machine.

CONTENT DETAILS

MODULE I MACHINE SHOP

Understand the safety precautions

1.1.0 Lathe work

- 1.1.1 Familiarization with lathes- principal parts, work holding device, measuring instruments, accessories & attachments
- 1.1.2 Plain turning to the given accuracy - Practice with Precision measuring devices - use of digital vernier and Micrometer
- 1.1.3 Taper turning
- 1.1.4 Form turning (ball and curve)
- 1.1.5 Combination of above operations (taper, ball and curve)

1.2.0 Work on shaper

- 1.2.1 Familiarize with the parts, accessories and attachments.
- 1.2.2 Simple operations on Shaper (Planning)
- 1.2.3 Shaping of a rectangular block
- 1.2.4 Shaping a 'V' in a rectangular block

1.3.0 Work on drilling machine

- 1.3.1 Familiarization of drilling machine parts
- 1.3.2 Marking and drilling holes
- 1.3.3 Boring and counter boring
- 1.3.4 Reaming
- 1.3.5 Combination works

MODULE II FITTING PRACTICE

- 2.1 Study of measuring gauges-**dial gauges, feeler gauges, thread gauges**
- 2.2 Working from a given blue print **exercises involving marking filing, drilling, reaming and tapping to an accuracy of 0.02mm (T- joint, V-joint, Single dovetail joint)**

MODULE III SHEET METAL & ALUMINIUM FABRICATION

- 3.1 Understand safety precautions.
- 3.2 Familiarization of sheet metal tools – **scribers, dividers, trammel points, set square, punches – prick punches, centre punches – hand Grover, rivet, chisels, hammers, riveting hammers, ball peen hammers – mallet, snip shears, pliers, hand seamers (tongs) files, stakes. Measuring instruments in sheet metal - folding rule, common rule, steel circumference rule, vernier calipers, micrometer, combination set, Thickness gauges – Plate gauge.**

MODULE IV WELDING

- 4.1 **Safety precautions**
- 4.2 **Study of various tools and equipments used in the welding shop for both arc welding and gas welding (review)**
- 4.3.0 **Practice work**
 - 4.3.1. D.C. arc welding (review of practice)
 - 4.3.2. A.C. arc welding (review of practice)
 - 4.3.3. Gas welding (review of practice)
 - 4.3.4. Horizontal, flat, vertical and over head welding
 - 4.3.5. Edge preparation of welded joint such as V, double V.
 - 4.3.6. Pipe welding – linear and round
 - 4.3.7. Flame cutting

GENERAL INFORMATION:

***Class is divided into 2 batches (Batch I and Batch II). For Batch I –it is M/c. Shop and Fitting shop and for Batch II- it is Sheet metal, Aluminum fabrication and welding**

This syllabus should be continued for Semester IV also by interchanging the batch of students.

TEXT BOOKS

- 1. Mechanical Workshop Practice by K. C. John (PHI Learning Private Limited)**
- 2. Mechanical Workshop & Laboratory Manual by K. C. John**

REFERENCE

- 1. Workshop Technology Vol. I by S K Hajra Choudhary**
- 2. Workshop Technology Vol. II by S K Hajra Choudhary**