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

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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**