

INSTITUTE	DIPLOMA STUDIES
PROGRAM	DIPLOMA ENGINEERING (CIVIL ENGINEERING)
SEMESTER	1
COURSE TITLE	MECHANICAL WORKSHOP
COURSE CODE	09ME3102
COURSE CREDITS	2

Objective:

- 1 Mechanical workshop develops core manufacturing skills: fitting, measurement, and machine tool operation. Students learn to interpret drawings, ensuring safe practices. Hands-on experience fosters problem-solving and confidence. The course prepares students for industrial roles, building a foundation for mechanical engineering careers.

Course Outcomes: After completion of this course, student will be able to:

- 1 Perform basic cutting operations including filing, drilling, tapping, and threading.
- 2 Demonstrate the use of various hand tools and power tools.
- 3 Interpret technical drawings and specifications for fabrication process.
- 4 Perform basic welding and plumbing operations adhering to safety protocols.

Pre-requisite of course:NA

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
0	0	4	0	30	20	25	25

Contents : Unit	Topics	Contact Hours
1	Introduction: Sketch general workshop layout: Workshop layout, Importance of various sections/shops of workshop, Types of jobs done in respective shop., Follow preliminary safety rules in workshop: General safety rules and work procedure in workshop	0
2	Prepare the simple jobs as per specification using fitting tools. Prepare the simple jobs as per specification using fitting tools.	0
3	Prepare the simple job as per specification using carpentry tools. Prepare the simple job as per specification using carpentry tools.	0
4	Prepare the simple jobs as per specification using proper metal joining and cutting method. Prepare the simple jobs as per specification using proper metal joining and cutting method.	0

Contents : Unit	Topics	Contact Hours
5	Prepare the simple job as per specification using tin smithy tools. Prepare the simple job as per specification using tin smithy tools.	0
6	Prepare the simple job as per specification using pipe fitting tools. Prepare the simple job as per specification using pipe fitting tools.	0
7	Introduction about power tools. Introduction about power tools.	0
Total Hours		0

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	To prepare plant layout for workshop. To prepare plant layout for workshop.	2
2	Exercise on safety practices in a Mechanical Workshop. Exercise on safety practices in a Mechanical Workshop.	2
3	To prepare job a by using files and hacksaw. To prepare job a by using files and hacksaw.	12
4	Hands on practice of punch and hammer. Hands on practice of punch and hammer.	4
5	Demonstration of carpentry tools. Demonstration of carpentry tools.	2
6	To prepare carpentry job (wood material) as per given diagram To prepare carpentry job (wood material) as per given diagram	10
7	To. Perform experiment on spot welding. To. Perform experiment on spot welding.	4
8	To perform experiment on arc welding To perform experiment on arc welding	4
9	To perform experiment on tin smithy. To perform experiment on tin smithy.	6
10	To demonstration of plumbing tools. To demonstration of plumbing tools.	2
11	Hands on the practice of power tools Hands on the practice of power tools	4
12	To interpret the use of drilling machine and to prepare job. To interpret the use of drilling machine and to prepare job.	4
Total Hours		56

Textbook :

- 1 Workshop Technology Vol. I and II, B. S. Raghuvanshi, Dhanpat Rai and Sons, 1998

References:

- 1 Mechanical Workshop Practice, Mechanical Workshop Practice, K C John, PHI Learning, 2010
- 2 Workshop Practices, Workshop Practices, H S Bawa, McGraw Hill Education, 2017
- 3 Workshop Technology, Workshop Technology, Chapman W A J, CBS, 2001

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
10.00	20.00	50.00	20.00		

Instructional Method:

- 1 The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory.
- 2 Practical examination will be conducted for evaluation of performance of students in laboratory.

Supplementary Resources:

- 1 <https://www.aboutmech.com/2020/09/workshop-technology.html>
- 2 <https://www.youtube.com/watch?v=KgQyuCrOKoU>
- 3 <https://www.youtube.com/watch?v=XzZWYyj2hRw>
- 4 <https://www.youtube.com/watch?v=U9sO7kpzK-Q>
- 5 <https://www.youtube.com/watch?v=iFqYhGqJiBs>