

INSTITUTE	FACULTY OF TECHNOLOGY
PROGRAM	BACHELOR OF TECHNOLOGY (MECHANICAL ENGINEERING)
SEMESTER	2
COURSE TITLE	MECHANICAL WORKSHOP
COURSE CODE	01ME1104
COURSE CREDITS	1

Objective:

- 1 Mechanical Workshop is of paramount importance for the engineering students to enhance their technical skills as per the need of industries. Practice of engineering workshop make students aware about practical work in industrial environment as well as day-to-day life work.

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

- 1 Students will be able to demonstrate the proper use of hand tools and power tools by applying safety rules and regulations during workshop operations.
- 2 Students will be able to illustrate and execute conventional machining processes by analyzing their applications in real-world mechanical tasks.
- 3 Students will be able to implement advanced manufacturing processes by demonstrating their use in specialized operations and evaluating their efficiency compared to conventional methods.
- 4 Students will be able to apply and explain the manufacturing processes of composite materials by selecting appropriate methods for specific engineering tasks.

Pre-requisite of course: Zeal to learn subject

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
0	0	2	0	0	0	0	50

Contents : Unit	Topics	Contact Hours
Total Hours		

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	Introduction Introduction	4

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
2	Fitting shop and Carpentry shop Fitting shop and Carpentry shop	8
3	Metal removing operations Metal removing operations	4
4	Laser Cutting operations Laser Cutting operations	4
5	Additive manufacturing Additive manufacturing	4
6	Manufacturing of GFRP composite Manufacturing of GFRP composite	4
Total Hours		28

Textbook :

- 1 A Textbook of Workshop Technology, R.S. Khurmi, S. Chand, 1983
- 2 Workshop Technology Part-1, W.A.J. Chapman, Edward Arnold, 1976

References:

- 1 Elements of Workshop Technology, Volume-2, Elements of Workshop Technology, Volume-2, S.K. Hajra Choudhury, Nirjhar Roy, MPP Publication, 1988
- 2 The Laser Cutting Process: Analysis and Applications, The Laser Cutting Process: Analysis and Applications, Bekir Sami Yilbas, Elsevier Publication, 2017
- 3 Additive Manufacturing Technologies: 3D Printing, Rapid Prototyping and Direct Digital Manufacturing, Additive Manufacturing Technologies: 3D Printing, Rapid Prototyping and Direct Digital Manufacturing, Ian Gibson, David Rosen, Brent Stucker, Springer, 2015
- 4 Composite Materials: Science and Engineering, Composite Materials: Science and Engineering, Krishan K Chawla, Springer, 2012
- 5 A Textbook of Manufacturing Technology, A Textbook of Manufacturing Technology, R.K. Rajput, Laxmi Publication, 2007

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 and evaluation					
Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
10.00	10.00	40.00	20.00	10.00	10.00

Instructional Method:

- 1 Experimental and Demonstration

Supplementary Resources:

- 1 <https://nptel.ac.in/courses/112107219>