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 Apply appropriate tools, equipment, and workshop practices to fabricate components using fitting, carpentry, and basic machining processes.

2 Apply drawings, process parameters, and machine settings to machine components using conventional and non-conventional machining processes.

3 Apply material selection, process planning, and fabrication techniques to develop polymer and composite components using advanced manufacturing processes.

4 Analyze measurement data and inspection results to determine dimensional accuracy, identify deviations, and infer causes across different manufacturing processes.

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
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

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Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
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					
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

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