

## Semester/Term 5

### MACHINE DESIGN AND CAD-I(ME-311)

Pre-requisite: None

Credit Hours: 02

Contact Hours: 32

#### RECOMMENDED BOOK(S)

Mechanical Engineering Design, *By J.E. Shigley*, McGraw Hill.

#### REFERENCE BOOK(S)

Machine Design, an Integrated Approach, By R L Norton, McGraw Hill.

Design of Machine Elements, By M.F. Spotts, Prentice Hall

#### COURSE OBJECTIVES

To design common machine elements and to gain experience in solving design problems. To prepare professional quality solutions and effectively communicate the results of analysis and design.

S. No.	CLO/PLOS MAPPING	DOMAIN	PLO
1	To know the different criteria of design to <b>solve</b> the problems of machine elements like keys, couplings, brakes, clutches, fly wheels and screws.	C3	01
2	<b>Analyze</b> the behavior of machine element like keys, couplings, brakes, clutches, fly wheels and screws.	C4	02
3	Ability to <b>evaluate</b> a design problems related to fasteners	C6	04

#### COURSE CONTENTS

Basic criteria of design of machine parts, determination of permissible and actual stress, factor of safety.

Design of keys, cotters, and couplings.

Design of brakes, clutches and flywheel.

Design of welded, riveted and bolted joints.

Design of translation screws.

Design codes and standards, tolerances, standards of fits & tolerances.

Fundamentals of CAD