

Course Number and Name	
BME601 - MACHINE DESIGN II	
Credits and Contact Hours	
4&60	
Course Coordinator's Name	
Dr. A. Buchshumiyar	
Text Books and References	
<p>TEXT BOOKS :</p> <p>1. Prabhu T.J. Design of Transmission Elements, 2008.</p> <p>REFERENCES :</p> <p>1. Shigley, Mechanical Engineering Design – Tata McGrawHill,2004.</p> <p>2. Dobrovolsky, Machine Elements – Mir Publications, 1978.</p> <p>3. Pandya & Shah – Elements of Machine Design, 2000.</p> <p>4. www.faadooengineers.com/.../26687-Machine-design-by-shigley-ebook-</p>	
Course Description	
To gain knowledge on the principles and procedure for the design of power Transmission components. To understand the standard procedure available for Design of Transmission sip terms	
Prerequisites	Co-requisites
MACHINE DESIGN I	Nil
required, elective, or selected elective (as per Table 5-1)	
Required	
Course Outcomes (COs)	
CO1	Upon completion of this course, the students can able to successfully design components for a system
CO2	Design gears
CO3	Understand bearings and design
CO4	Understand belt drives and chain drives
CO5	Understand the principle behind design
CO6	Learn calculation of speed reduction , kinematic and ray diagrams

Student Outcomes (SOs) from Criterion 3 covered by this Course												
COs/SOs	a	b	c	d	e	f	g	h	i	j	k	l
CO1	H	H	L					M	M		H	H
CO2	H	H	L					M	M		H	H
CO3	H	H						M	M		H	H
CO4	H	M	L					M	M		H	H
CO5	M	H	L					M	M		M	M
CO6	M	H	L					M	M		M	M

List of Topics Covered	
UNIT I BEARINGS	12
Design of sliding contact bearings using Somerfield number - Selection of rolling contact bearings for radial and axial load combination and for varying load cycles.	
UNIT II BELTS AND CHAINS	12
Design of flat belts and V – belts using manufacturer’s data – Design of chain drives using manufacturer’s data –PSG.	
UNIT III SPUR AND HELICAL GEARS	12
Design of spur and helical gears – Russian Design Procedure (PSG Design Data Book / Design of Transmission Elements – T.J. Prabhu)	
UNIT IV BEVEL, WORM GEARS, POWER SCREW	12
Design of bevel and worm gears – Design of Power screws for machine tool application. Russian Design Procedure (PSG Design Data Book / Design of Transmission Elements – T.J. Prabhu)	
UNIT V MULTI SPEED GEAR BOXES	12
Design of speed reducers. (Not for Examination)	
Design of Multispeed Gear boxes for machine tools - Ray Diagrams, Kinematic diagram and Number of teeth calculation for gears.	