

Semester:	3				
Course Code:	ME2020				
Course Name:	Mechanics of Machines				
Credits Value:	3 (Notional hours: 150)				
Pre-requisites:	None				
Core/ Optional:	Core				
Hourly Breakdown	Lectures (hours)	Tutorials (hours)	Practical classes (hours)	Assignments (hours)	Independent Learning & Assessment (hours)
	35			25	90

Course Aim:

To provide the students with an opportunity to identify the role of common machine elements and their characteristics, functional requirements and specifications so that all the students will be able to use them in the designing of machines.

Intended Learning Outcomes:

On successful completion of the course, the students should be able to;

- **describe** the role and operating characteristics of power transmission elements
- **analyze** the dynamics of power transmission elements using fundamental laws of physics and mathematics to determine their functionality and specifications.
- **analyze** tribological aspects such as friction, lubrication and wear of machine components using fundamental laws of physics and mathematics.

Course Content:

- **Dynamics of machine elements:** Gear Trains, Belts & Chains, Clutches, Brakes, Bearings, Flywheels.
- **Tribology:** Contact of surfaces, Adhesion theory & adhesive effect, friction and wear, Lubrication theory.

Teaching/ Learning Methods:

Classroom lectures and in-class exercises and assignments

Assessment Strategy:

Continuous Assessment 40%		Final Assessment 60%		
Details:		Theory (%)	Practical (%)	Other (%) (Project)
Assignments/Quizzes	40 %	60%		

Recommended Reading:

- Cleghorn, W. & Dechev, N. (2014). *Mechanics of Machines* (2nd Edition). Oxford University Press, Oxford, UK.
- Khurmi R. S. & Gupta J.K. (2005). *Theory of Machines* (14th Edition). S Chand Publishing, New Delhi, India.
- Shizhu, W. & Ping, H. (2012). *Principles of Tribology* (3rd Edition). John Wiley & Sons, Inc, New Jersey USA.
- Arnell, R. D., Davies, P. B., Halling, J . and Whomes, T. L. *Tribology: Principles and Design Applications* (1st Edition), Springer-Verlag, New York, USA.