Course Code	ME 221
Course Title	Mechanics of Machines
No. of Credits	3
Pre-requisites	None
Compulsory/Optional	Compulsory for Mechanical Engineering stream

Aim(s):

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 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 functional requirements and specifications,
- Analyze tribological aspects such as friction, lubrication and wear of machine components using fundamental laws of physics and mathematics.

Time Allocation (Hours) : Lectures 35, Assignments 20
(Notional Hours : 150)

Course content / Course description :

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

Recommended Texts (if any) :

- Cleghorn, W. and Dechev, N. (2014). *Mechanics of Machines* (2nd Edition). Oxford University Press, Oxford, UK.
- Khurmi R. S. and Guptha J.K. (2005). *Theory of Machines* (14th Edition). S Chand Publishing, New Delhi, India.
- Shizhu, W. and 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.

Assessment	**Percentage Mark**
In-course	
Tutorials/Assignments/Quizzes/Practicals	40
Mid Semester Examination	-
End-semester	60