

SYLLABUS CURRICULUM

COURSE	Course Name : KINEMATICS & DYNAMICS
	Course Code : TM184309
	Credit : 4 sks
	Semester : III

COURSE DESCRIPTION

LEARNING OUTCOMES

LO6	Understand the engineering principles in mechanical system to identify, formulate and solve the problem of mechanical engineering.
LO9	Able to find the source of engineering problems in mechanical system through research that includes identification, formulation, analysis, data interpretation based on engineering principles.
LO10	Able to formulate the solution of engineering problem in mechanical system by considering economy, safety, environment and energy conservation.

COURSE LEARNING OUTCOMES

Students can develop a mathematical model from dynamics problems [C4, A3, P3] comprising the principles of work and energy, impulse and momentum, forces, and the relationship between velocity, displacement and time, construct [C5, A4, P4] free body diagrams from particle- and rigid body-equilibriums problems, and apply mechanical concepts to analyze and solve [C5, A4, P4] practical problems such as balancing, flywheel, gyroscope, and load/moment acting on a mechanism.

MAIN SUBJECT

The focus of this course are as follows:

- Equation of motion for a system of particles and rigid body
- The principles of work and energy
- The principles of impulse and momentum
- The principles of virtual work
- Practical problems: balancing, flywheel, gyroscope
- Mechanism of forces

PREREQUISITES

Kinematics of Mechanisms

REFERENCE

1. R. C. Hibbeler, "Engineering Mechanics: Dynamics", 13th Edition, Prentice Hall Inc. 1997.

2. J. L. Meriam, L. G. Kraige, "Engineering Mechanics, Dynamics", 2nd Edition, John Wiley and Sons, Inc. 1987.
3. Ferdinand p. Beer, E. Russell Johnston Jr. "Vector Mechanics for Engineers, Dynamics", 9th Edition, McGraw-Hill, 2010.