INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
भारतीय प्रौद्योगिकी संस्थान तिरुपति
Yerpedu-Venkatagiri Road, Yerpedu Post, Tirupati District, Andhra Pradesh - 517 619

भारतीय प्रौद्योगिकी संस्थान तिरुपति

TIRUPATI

1.	Title of the course	Engineering Dynamics
2.	Course number	ES107L
3.	Structure of credits (L-T-P-C)	2-1-0-3
4.	New course/modification to	New
5.	To be offered by	Mechanical Engineering
6.	Prerequisite	None
7.	**Course Objective(s):** To analyze the dynamics of rigid mechanical systems by formulating the governing equations. To use the theoretical tools for studying two and three-dimensional systems, and develop proficiency in applying these principles to estimate the dynamic variables.	
8.	**Course Content:** Lumped mass models in dynamics: Particle motion in cylindrical coordinates, engineering applications of central force motion; Kinematics of rigid bodies: translation and rotation of a rigid body, relative motion with translating and rotating axes, Coriolis acceleration; Kinetics of rigid bodies: 3D properties of sections, angular momentum of rigid bodies, energy relations for rigid bodies.	
9.	**Textbook(s):** 1. Beer F P and Johnston E R, Vector Mechanics for Engineers - Volume I - Statics, Volume II - Dynamics, McGraw Hill, New York (2016). 2. Meriam J L and Kraige L G, Engineering Mechanics, Volume II - Dynamics, John Wiley & Sons, New York, (2012).	
10.	**Reference(s):** 1. Shames I H and Rao K M, Engineering Mechanics: Statics and Dynamics, 4th Edition, Pearson, New Delhi (2005).	