



## Engineering Mechanics: Dynamics

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Wiley, 2006. Book Condition: New. Brand New, Unread Copy in Perfect Condition. A+ Customer Service! Summary: PART I. DYNAMICS OF PARTICLES. CHAPTER 1. INTRODUCTION TO DYNAMICS. 1/1 History and Modern Applications. History of Dynamics. Applications of Dynamics. 1/2 Basic Concepts. 1/3 Newton's Laws. 1/4 Units. 1/5 Gravitation. Effect of Altitude. Effect of a Rotating Earth. Standard Value of  $g$ . Apparent Weight. 1/6 Dimensions. 1/7 Solving Problems in Dynamics. Approximation in Mathematical Models. Method of Attack. Application of Basic Principles. Numerical versus Symbolic Solutions. Solution Methods. 1/8 Chapter Review. CHAPTER 2. KINEMATICS OF PARTICLES. 2/1 Introduction. Particle Motion. Choice of Coordinates. 2/2 Rectilinear Motion. Velocity and Acceleration. Graphical Interpretations. Analytical Integration. 2/3 Plane Curvilinear Motion. Velocity. Acceleration. Visualization of Motion. 2/4 Rectangular Coordinates ( $x$ - $y$ ). Vector Representation. Projectile Motion. 2/5 Normal and Tangential Coordinates ( $n$ - $t$ ). Velocity and Acceleration. Geometric Interpretation. Circular Motion. 2/6 Polar Coordinates ( $r$ -). Time Derivatives of the Unit Vectors. Velocity. Acceleration. Geometric Interpretation. Circular Motion. 2/7 Space Curvilinear Motion. Rectangular Coordinates ( $x$ - $y$ - $z$ ). Cylindrical Coordinates ( $r$ - $z$ ). Spherical Coordinates ( $R$ -). 2/8 Relative Motion (Translating Axes). Choice of Coordinate System. Vector Representation. Additional Considerations. 2/9 Constrained Motion of Connected Particles. One Degree of Freedom. Two Degrees of Freedom. 2/10 Chapter Review. CHAPTER...

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