**Course Outcomes** [Related ME Program Outcomes in brackets]

1. Develop an understanding of *Newton’s Laws of Motion* and how to apply them to engineering systems. [A1, A2]
2. Develop an understanding of *conservation principles* (work-energy, linear impulse-momentum and angular impulse-momentum). [A1, A2]
3. Introduce methods to model and evaluate the response of 2nd *order linear mechanical systems*. [A1, A2]
4. Develop a systematic approach to *problem solving*. [A2]
1. COURSE NUMBER AND NAME : ME 27400  Basic Mechanics II

2. CREDITS AND CONTACT HOURS: 3 credits
   a. Lecture – 3 days per week at 50 minutes for 16 weeks

3. COURSE COORDINATOR OR INSTRUCTOR:
   C.M. Krousgrill

4. TEXTBOOK: Class Notes

5. SPECIFIC COURSE INFORMATION:
   a. Catalog Description: Review and extension of particle motion to include energy and momentum principles. Planar kinetics of rigid bodies. Kinetics for planar motion of rigid bodies including equations of motion and principles of energy and momentum. Introduction to three-dimensional kinematics of rigid bodies. Introduction to linear vibrations with emphasis on single-degree-of-freedom systems. Typically offered in fall, spring and summer.
   b. Prerequisites:
      ME 27000 – Basic Mechanics I or equivalent and ENGR 13200 – Transform Ideas to Innovation II
   Concurrent Pre-requisites:
      MA 26200 – Linear Algebra and Differential Equations or MA 26600 – Ordinary Differential Equations
   c. Status: Required

6. SPECIFIC GOALS FOR THE COURSE
   a. Course Outcomes:
      [Related ME Program Outcomes in Brackets]
      1. Develop an understanding of *Newton’s Laws of Motion* and how to apply them to engineering systems. [A1, A2]
      2. Develop an understanding of *conservation principles* (work-energy, impulse-momentum and angular impulse-momentum). [A1, A2]
      3. Introduce methods to model and evaluate the response of 2\textsuperscript{nd} order linear mechanical systems. [A1, A2]
      4. Develop a systematic approach to *problem solving*. [A2]
   b. Related ME Program Outcomes:
      [Related ABET Outcomes Listed in Brackets]
      A1. Engineering Fundamentals; B3. Prof/Ethical Responsibility;
      A3. Experimental Skills; B5. Life-Long Learning;
      A4. Modern Engr Tools; C1. Leadership,
      A5. Design Skills; C2. Global Engineering Skills;
      A6. Impact of Engr Solns; C3. Innovation;
      B1. Communication Skills; C4. Entrepreneurship
      B2. Teamwork Skills

7. LIST OF TOPICS: See following page.

PREPARED BY: C.M. Krousgrill
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