ME 302: Engineering Mechanics II

Lecture: W F 6-8 PM

Instructor: **John Voccio, Adjunct Professor**
Office: **TBD**
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Textbook:

Williams, JH, Fundamentals of Applied Dynamics, John Wiley and Sons, Inc., 1996

Course Topics:

Kinematics of particles and rigid bodies

- Inertial reference frames; coordinate systems
- Intermediate noninertial reference frames

Direct/Algebraic approach to kinetic analysis (Newtonian)

- Universal law of gravitation, linear and angular momenta, moments of inertia
- Work/energy relationship

Indirect approach to kinetic analysis (Lagrangian)

- Calculus of variations, Hamilton's principle, Lagrange's equation

Grading:		
	Homework	15%
	Quizzes & Projects:	25%
	Exam 1:	15%
	Exam 2:	15%
	Final Exam:	30% (comprehensive; date TBD by registrar)

Assignments:

- HW problems will be assigned after class every other Wednesday and due the following Friday.

- The project will serve as a platform for students to apply principles learned in class to real-world scenarios. Further information will be given during the semester.

ME 302 Syllabus

Week	Date	Required Reading	Topic	HW, Quizzes & Exams
1	**1/16** **1/18**	CH 3	Introduction Position, Velocity and Acceleration	HW #1 Assigned
2	**1/23** **1/25**	CH 3	Plane Kinematics of Rigid Bodies Time Rate of Change of Arbitrary Vector	 HW #1 Due
3	**1/30** **2/1**	CH 3	Review	HW #1 Review HW #2 Assigned **Quiz #1**
4	**2/6** **2/8**	CH 4	Particle Dynamics Particle Dynamics	Quiz #2 Review HW #2 Due
5	**2/13** **2/15**	CH 4	Review	HW #2 Review **Quiz #2**
6	**2/20** **2/22**	CH 6	Rigid Body Dynamics **Exam #1**	Quiz #2 Review HW #3 Assigned **Exam #1**
7	**2/27** **3/1**	CH 6	Rigid Body Dynamics Rigid Body Dynamics	Exam #1 Review HW #3 Due
8	**3/6** **3/8**	CH 5	Work & State Functions Generalized Coordinates	HW #3 Review Quiz #2
9	**3/13** **3/15**		**SPRING BREAK**	
10	**3/20** **3/22**	CH 5	Lagrangian Dynamics	Quiz #3 Review HW #4 Assigned
11	**3/27** **3/29**	CH 6	Lagrangian For Rigid Bodies	 Quiz #4; HW #4 Due
12	**4/3** **4/5**		Review **Exam #2**	Quiz#4 & HW#4 Review **Exam #2**
13	**4/10** **4/12**	CH 8	Small Oscillations	Exam #2 Review HW #5 Assigned
14	**4/17** **4/19**	CH 8	Stability Review	 HW #5 Due
15	**4/24** **4/26**		Review **Practice Final**	Overall Review **Practice Final**
16	**5/1**		Last Day of Classes—Review	Review