

# ENGR 3200 – Dynamics

Spring 2009, TR: 11:10 – 12:35, 116 Rogers Hall (3 credit hours)

**Instructor:** Dr. Sarah P. Formica, ext: 2701, office: 107 Rogers Hall,  
[spformica@ngcsu.edu](mailto:spformica@ngcsu.edu)

**Office Hours:** MWF: 8:00 – 9:00, 11:10 – 11:40, TR: 10:10 – 11:05

## Course Syllabus

**Catalog Description:** Prerequisite: ENGR 2001. Kinematics and dynamics of particles and rigid bodies in one, two, and three dimensions. Work-energy and impulse-momentum concepts. Two lecture-recitations per week.

**Text:** The main textbook for this course is: Engineering Mechanics: Dynamics 2<sup>nd</sup> Ed., by Riley and Sturges. It is available to buy from the university bookstore. There are some times when I may refer to another text, but I will make copies of these other texts for you.

### Course Calendar:

January 8 <sup>th</sup>	Chapter 12: Introduction
January 13 <sup>th</sup> – January 22 <sup>nd</sup>	Chapter 13: Kinematics of Particles
January 27 <sup>th</sup> – February 10 <sup>th</sup>	Chapter 14: Kinematics of Rigid Bodies
February 12 <sup>th</sup> – February 19 <sup>th</sup>	Chapter 15: Kinematics of Particles – Newton’s Laws
February 24 <sup>th</sup> – March 5 <sup>th</sup>	Chapter 16: Kinematics of Rigid Bodies – Newton’s Laws
March 10 <sup>th</sup> – March 26 <sup>th</sup>	Chapter 17: Kinematics of Particles – Work & Energy
March 31 <sup>st</sup> – April 9 <sup>th</sup>	Chapter 18: Kinematics of Rigid Bodies – Work & Energy
April 14 <sup>th</sup> – April 16 <sup>th</sup>	Chapter 19: Kinematics of Particles – Impulse & Momentum

### Scheduled Course Events:

#### Problem Sets

PS1	Ch 13: 7, 11, 13, 20, 23, 31, 37, 52, 56	Due: 1/20/09 at 5:00 PM
PS2	Ch 13: 94, 96, 103, 119, 137, 144	Due: 1/27/09 at 5:00 PM
PS3	Ch 14: 2, 6, 13, 20, 23, 27, 44, 50, 58, 71, 96, 108	Due: 2/3/09 at 5:00 PM
PS4	Ch 14: 117, 130, 137, 142	Due: 2/12/09 at 5:00 PM
PS5	Ch 15: 1, 8, 12, 17, 21, 54, 58, 60	Due: 2/24/09 at 5:00 PM
PS6	Ch 16: 1, 4, 9, 11, 27, 28, 36	Due: 3/3/09 at 5:00 PM
PS7	Ch 16: 52, 55, 62, 74, 85	Due: 3/10/09 at 5:00 PM
PS8	Ch 17: 1, 5, 13, 22, 28,	Due: 3/24/09 at 5:00 PM
PS9	Ch 17: 52, 57, 69, 71, 78	Due: 3/31/09 at 5:00 PM
PS10	Ch 18: 1, 3, 7, 11, 14, 25, 49	Due: 4/14/09 at 5:00 PM

#### Exams

Exam 1	Chapters 12 – 14	2/17/09 at 11:10 AM – 12:35 PM
Exam 2	Chapters 15 – 16	3/12/09 at 11:10 AM – 12:35 PM
Exam 3	Chapters 17 – 18	4/16/09 at 11:10 AM – 12:35 PM
Final Exam	Comprehensive	4/23/09 at 10:30 AM – 12:30 PM

## ENGR 3200 – Dynamics

**Course Resources:** All course announcements, reading assignments and necessary course documentation can be accessed via the Dynamics course webpage, located at:

<http://polaris.deas.harvard.edu/galileo/students/?courseID=2112>

In the upper right corner of the course webpage, click the Sign In link. This is where you will register. Below the Login button, click Not registered? Enroll to set up your account. When you login to the course webpage, you will be able to access your reading assignments by clicking the READINGS title at the top of the page. There will be a reading assignment before every lecture. Along with the reading, there will be questions to answer about the reading, *a.k.a.* the lecture warm-up. Your answers will be submitted electronically via the course webpage. **All warm-ups are due by 9:10 A.M. on the day of lecture.**

**Teams:** You will be assigned to a team on the first day of class. You and your teammates will work together on problems and projects in class and on the problem sets. Twice during the semester you will grade your teammates in a peer assessment process. This peer assessment will count toward your final grade. I reserve the right to change any peer assessment grade for any reason.

**Problem Sets (PS):** Each problem set will consist of approximately 8 – 10 problems and will be due at the time and date listed above. Only **one copy per team** of the solutions to each problem set will be accepted for grading.

**Exams:** There will be three in-class exams and one two-hour final exam given. The final exam will be comprehensive. Calculators are allowed during exams but cannot be shared. A cell-phone cannot be used as a calculator. Absence from any exam will result in an automatic grade of zero. The only exception is if you notify me at least one day prior to the exam with a reasonable excuse for missing the exam and I approve your excuse. If you are sick the day of the exam, you will be allowed to make up the exam with some written proof of your illness, such as a Dr.'s note with the doctor's phone number.

**Grading:** Warm-up exercises will be worth 5% of your final grade. Each in-class exam will be worth 15%. The final exam will be worth 20%. Problem sets will be worth 15%. Your peer assessment will be worth 5% of your final grade. Your team project (details to be discussed later) will be worth 10% of your final grade. A = 90 -100; B = 80 – 89; C = 70 – 79; D = 60 – 69; F = < 60.

**Class Evaluations:** Class evaluations at NGCSU are now conducted on-line through Banner. Evaluation of the class is considered a component of the course and students will not be permitted to access their course grade until the evaluation has been completed. The evaluations will be accessible beginning one week prior to Final Exam week.

**Early Intervention:** I am committed to your success in this course and at this university. I may, therefore, refer you to other persons and/or services available to help you achieve academic success. In turn, if you are referred, you will be expected to comply with the referrals. Please understand that such referrals are not a form of punishment, rather, they are intended to help you.

**Academic Honesty:** NGCSU's integrity code- "On my honor, I will not lie, cheat, steal, plagiarize, evade the truth, or tolerate those who do" -reflects the university's commitment to academic integrity. The "Academic Integrity Policy" (2004-2006 Undergraduate Bulletin, pp. 78-81) is incorporated herein by reference.