



---

**Syllabus for *EGR 236 Section 001***

***Dynamics***

**Spring Semester 2008**

***Meeting Days TR***

***8:00 – 9:15 am***

**Room EGC 218**

---

**Instructor:** Richard K. Kunz, Ph.D., P.E.  
Associate Professor  
Department of Mechanical and Industrial Engineering

**Office:** Suite 105F, School of Engineering

**Phone:** 478-301-4061

**Email:** [kunz\\_rk@mercer.edu](mailto:kunz_rk@mercer.edu)

**Web Page:** [http://faculty.mercer.edu/kunz\\_rk](http://faculty.mercer.edu/kunz_rk)

---

**Textbook:**

**Required:** *Vector Mechanics for Engineers: Dynamics*, by F. P. Beer, E. R. Johnston, Jr., and W. E. Clausen, 8<sup>th</sup> ed, 2007. ISBN: 0-07-297693-4

**Catalog Description:** Planar kinematics of particles and rigid bodies. Planar kinetics of particles and rigid bodies: force and acceleration, work and energy, and impulse and momentum.

**Course Objectives:** Upon successful completion of this course, you should be able to do the following:

- Determine position, velocity, and acceleration of particles in 2-D and 3-D.
- Prepare appropriate free body diagrams for particles and rigid bodies that are not in equilibrium.
- Determine forces and accelerations for systems of bodies in motion.
- Solve dynamic problems involving linear and angular momentum.
- Determine effects of impact on two bodies in a plane.
- Solve dynamic problems involving friction.
- Use work and energy relationships to solve dynamic problems.
- Calculate mass moment of inertia for bodies.
- Determine translational and rotational planar movements for rigid bodies.

**Prerequisites:**

EGR 232, MAT 192, PHY 161

## Grading:

Homework	10%
Tests (3)	20% each
Final Exam	30%

Grade Averages: A (90-100), B (80-89), C (70-79), D (60-69), F(<60)

## Course Standards:

1. **Homework** is an important part of learning, as performing the homework is the only way to have a good understanding of the course material and form good engineering work habits. Problems will be assigned each class period, and with a due date of the following class period. Selected problems will be collected and graded on a regular basis. Have problems ready to submit on the due date (or later).

- Homework must be done neatly in pencil.
- Place your name in the upper right hand corner.
- You may put up to 2 problems per page.
- Do not write on the backs of paper.
- Sketches must be neat and clear.
- Show all forces, coordinate systems, governing equations, and assumptions that are used in the solution.
- Equations and solutions must follow logically, step by step. Thus, your complete solution is supported by what you have presented. Show all your work.
- Numerical answers without units are meaningless.
- Papers not adhering to these rules will receive less than full credit.

You may work together in small groups, but copying is not permitted. Each student must turn in his/her own work. **DO NOT COPY HOMEWORK.** Copying work and submitting as your own is an Honor Code violation.

Solutions will be placed in the library on 2-hour reserve.

2. **Tests:** There will be three 75-minute tests during the semester. Problems will be similar to the homework. All tests will be closed notes and closed book. A calculator is recommended. No make-up tests will be given without a documented excuse.
3. **Final Exam:** There will be a comprehensive final exam. It will be closed notes and closed book. It will consist of problems similar to those on the tests.

The final exam will be given **Thursday, 1 May, 2:00 – 5:00 p.m.**

4. **Course Notebook:** I recommend that you keep all course materials in a separate three-ring binder. Sections should include lecture notes/handouts, homework, and tests, each sorted into chronological order. You will find that this will aid you immeasurably in studying, and will be a lovely keepsake at the conclusion of the course.
5. **Reading** assignments will be posted at each class meeting. You are encouraged to read the listed sections before the next class to prepare for the material to be covered.

## Additional Information:

1. Please feel free to arrange a meeting with me at any point that you feel you need it. If you would like to see me, come to my office, catch me after class to schedule a time, call, or email.
2. Please turn off cell phones, pagers, and other electronic noise-making devices before entering the classroom.
3. The **honor code** provisions as outlined in the *Catalog* and in the student handbook, *The Lair*, and on the web at <http://www2.mercer.edu/HonorCouncil/default.htm> apply to everyone. Plagiarism is a violation of the honor code and is prohibited. When in doubt, please ask to avoid potentially embarrassing situations.
4. Electronic communication is an important adjunct to face-to-face communication, including from professor to students, students to professor, and students to students. You must have regular access to your Mercer e-mail. If you do not have an active e-mail address on the first day of class, please secure one. Access to the Web and to the Internet is also integral to the class work. A number of laboratories on campus will provide access, in addition to EGC 102 and EGC 111-B.
5. Students requiring accommodations for a disability should inform the instructor at the close of the first class meeting or as soon as possible. If you are not registered with Disability Services, the instructor will refer you to the Disability Support Services office for consultation regarding documentation of your disability and eligibility for accommodations under the ADA/504. In order to receive accommodations, eligible students must provide each instructor with a "Faculty Accommodation Form" from Disability Services. Students must return the completed and signed form to the Disability Services Coordinator on the 3<sup>rd</sup> floor of the Connell Student Center. Students with a documented disability who do not wish to use academic accommodations are also strongly encouraged to register with Disability Services and complete a Faculty Accommodation Form each semester. For further information, please contact Carole Burrowbridge, Disability Services Coordinator, at 301-2778 or visit the website at [http://www.mercer.edu/stu\\_support/swd.htm](http://www.mercer.edu/stu_support/swd.htm)