Richland College is determined to prepare the student with the knowledge and skills you need to succeed in today's dynamic work environment.

CATALOG DESCRIPTION
Basic theory of engineering mechanics, using calculus, involving the motion of particles, rigid bodies, and systems of particles; Newton's Laws; work and energy relationships; principles of impulse and momentum; application of kinetics and kinematics to the solution of engineering problems. (3 Lec.)

COURSE LEARNING OUTCOMES
Upon successful completion of this course, students will:

1. Express dynamic quantities as vectors in terms of Cartesian components, polar coordinates, and normal-tangential coordinates.
2. Compute mass moments of inertia for systems of particles and rigid bodies.
3. Solve kinematic problems involving rectilinear and curvilinear motion of particles.
4. Solve kinetic problems involving a system of particles using Newton's Second Law.
5. Apply the principles of work and energy, conservation of energy, impulse and momentum, and conservation of momentum to the solution of engineering problems involving particles and systems of particles.
6. Solve kinematic problems involving the translation and rotation of a rigid body.
7. Solve kinetic problems involving planar translation and rotation of rigid bodies.
8. Apply the principles of work and energy, conservation of energy, impulse and momentum, and conservation of momentum to the solution of engineering problems involving rigid bodies in planar motion.
COURSE DESCRIPTION:

Course Number: ENGR 2302

Course Title: Engineering Mechanics II - Dynamics

Credit Hours: 3  Lecture Hours: 3  Lab Hours: 0

Prerequisites: ENGR 2301
Corequisites: MATH 2414

TEXTBOOK:


OR


SUPPLIES:

Scientific Calculator

COURSE REQUIREMENTS:

Students will be presented by hand outs for every class and are encouraged to take notes in class and will turn assigned materials in for grading. To receive full credit for your work, it must be turned in on the specified due date. Late work will not be accepted except for extraordinary circumstances that are approved by the instructor.

METHOD OF PRESENTATION:

Student participation and interaction is expected.
METHOD OF EVALUATION:

Evaluation will be based upon completion of all assigned work. The course average will be computed as follows:

- Short Quizzes .......................................................... 10%
- Homework ............................................................. 10%
- Midterm Exam 1 ..................................................... 20%
- Midterm Exam 2 ..................................................... 20%
- Final Exam ............................................................ 40%

In order to pass the course, a passing grade is required in homework assignments. Unless otherwise specified by the instructor, the grading system will be:

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<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>90 – 100</td>
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<td>80 – 89</td>
<td>B</td>
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<td>70 – 79</td>
<td>C</td>
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<td>60 – 69</td>
<td>D</td>
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<td>≤ 59</td>
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ATTENDANCE POLICY:

In order to be successful students must attend and participate in enrolled courses. You are expected to attend all classes and are fully responsible for your attendance. If at any time you wish to drop this course, or to withdraw from the college, initiate that action yourself. Do not assume that if you stop attending class you will be automatically dropped. It is the student's responsibility to drop or withdraw. You must withdraw from this course before the drop date specified to receive a grade of “W”.

WITHDRAWAL POLICY:

If you are unable to complete this course, it is your responsibility to withdraw formally.

The withdrawal request must be received in the Registrar's Office by the due date. Failure to do so will result in your receiving a performance grade, usually an “F”.

If you drop a class or withdraw from the college before the official drop/withdrawal you will receive a “W” (Withdraw).

CLASSROOM POLICIES:

No cellphone use is permitted in the classroom. No late arrival after the instructor has started the lecture. All the absence and special observation has to be given to instructor in the first week of class.

CLASSROOM FOOD AND DRINK POLICY:
Food and drink are not allowed in the classroom. (ref. OM CHB-801)

**ACADEMIC PROGRESS:**
Students are encouraged to discuss academic goals and degree completion with their instructors. Specific advising is available throughout the semester. Check 7Steps2Success for more details.

**INSTITUTION POLICIES:**
For Institution Policies, please refer to the Richland College website www.richlandcollege.edu (current students) or to www.richlandcollege.edu/syllabusinfo/syllabiInformation.pdf

**QEP: LEARNING TO LEARN: DEVELOPING LEARNING POWER**

“Richland’s Quality Enhancement Plan (QEP) provides techniques, practices, and tools to help students develop the habits, traits or behaviors needed to be effective lifelong learners empowering success in college and in life.”
For information log onto http://www.richlandcollege.edu/qep2013/

**SYLLABUS CHANGE DISCLAIMER:**
The instructor reserves the right to amend a syllabus as necessary
COURSE OBJECTIVES

Define mechanics and state the fundamental principles used in the study of mechanics

Review scalars and vectors

Express a vector in terms of Cartesian components, Polar Coordinates, and Normal-Tangential Coordinated

Derive equations of motion for a point and for rigid bodies using classic Newtonian, Energy, and Momentum Methods constrained to fixed or moving reference frames

Determine forces and/or moments applied to rigid bodies in motion

Determine position, velocity, and acceleration of bodies in motion

Apply the laws of dry sliding friction including the use of wedges and belts
COURSE OUTLINE:

SEMESTER / YEAR: SPRING, 2015  COURSE / SECTION: ENGR 2302/83201

CLASS MEETING DAYS AND TIMES: _M,W._– 2:15 – 4:05 P.M._

INSTRUCTOR: Faa Hooman________________  OFFICE NUMBER: __________

PHONE NUMBER: ______________________  EMAIL: F.HOOMAN@GMAIL.COM

OFFICE HOURS: Made by appointment.

<table>
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<tr>
<th>Date</th>
<th>Topic</th>
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<td>Force, Mass, Acceleration</td>
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