Date Board Approved: Date Prepared/Revised: 1/13/2012

This is an important document. Keep it! In the future, it could save you TIME AND MONEY!

Iowa Central Community College
Industrial Technology Department

Iowa Central Community College

Course Syllabus

Course Name: Engineering Mechanics 2
Course Number: CAD-218

Class Location and Time:
Room: SC-302 Day: MWF Time: 11:30 - 12:30
Room: Day: Time:

Course Start Date: 1/12/2012 Course End Date: 5/6/2012

Instructor: Carl Gross | Office Location: SC-301A

E-mail Address:
gross_c@iowacentral.edu

Phone: (515) 574-1227, x or
800 362-2793, x 1227

Office Hours:
Days: MWF Times: 8:00 – 9:00 am
Days: Times:
Days: Times:

Final Exam: Day: Thursday Date: 5/3/2012 Time: 8:00 am -9:30 am

Departmental Assistance: For help with course selection, class registration, transfer information, and other academic assistance, please contact the department associate, Phyllis Minnihan in AST 117 at 515-574-1903 or by email to Minnihan@iowacentral.edu

1. Total Semester Hour Credit: 3

2. Total Contact Hours per Semester: Lecture: 54 Lab: Clinical:

3. Catalog Description:
   The student will apply principles of kinematics to design & construct virtual models of mechanisms. Students will study principles of motion, path & trajectory analysis, linkages, and other motion transmission concepts commonly used in the mechanical industries. Students will also examine principles of fluids.

4. Prerequisites and/or Co-requisites: Solid Modeling 2, Technical Math 2

5. Textbook Required:
   - Textbook Required: Machines & Mechanisms, David H. Myszka, Prentice-Hall, 2012 ISBN: 9780132157803
6. Supplemental Materials Required:
   - Scientific calculator – (Ti-36X is one example.)

7. College Procedures:

- **Children in the Classroom:**
  - Students are not allowed to bring children into the classrooms, labs, shops, or hallways during class times.
- **Electronic Devices in the Classroom:**
  - Cell phones, pagers, timers and similar devices are not to be operational during classroom, lab, and clinical times.
- **Inclement Weather Statement:**
  - The final decision to attend college classes can only be made by the individual based on their specific extenuating circumstances that may make it hazardous for them to travel.
- **Academic Accommodations:**
  - Any student who feels they may need academic accommodations should contact the Special Populations Coordinator early on in the semester. The Coordinator will verify documentation and coordinate appropriate and reasonable accommodations. Students must obtain a new accommodation notification each semester.
    - For information contact:
    - Heather Lundberg
    - Special Populations Coordinator
    - Student Resource Center/Library
    - 515-574-1045

8. Additional Course Information:

- Attendance
  - Attendance is required for success. Please be sure to attend class regularly. Refer to your student handbook for college attendance policy.
- Late Work
  - A regular homework assignment or quiz is ***NOT*** accepted late for ***any reason***.
  - A progress check on a project in the engineering notebook is counted as a regular homework assignment.
  - A project assignment that takes a number of days to complete will be accepted late with penalty. Penalty: 5% per day deduction in total score.
- Lab Work
  - Missed labs can't be made up.
  - An exception ***may*** be made if ***all*** of the following are satisfied:
    - The missed lab can be completed by one person or you can find a partner to help with the data collection.
    - A time can be found that is convenient for the instructor to set up the lab again.

        - The lab has not yet been graded.
- Make-up Work
    - Arrangements must be made with the instructor **prior to due date** if possible.
        - At minimum an e-mail or Facebook message must be received by the end of the day to be eligible for make-up work.
    - When available, make-up work will likely be different from in-class versions.
    - Make-up work will be evaluated on a case-by-case basis.
    - Missed presentations can't be made up unless arrangements are made **at the time the presentation is assigned**.
- Extra Credit
    - Not available.
- Quiz / Homework
    - Missed homework can't be made up because it is graded as attempted or not.
    - Quizzes can be made up by taking an alternate version. The alternate is due no later than the due date of the next assigned quiz unless otherwise stated.
        - The highest score from either the original or the alternate will apply to your grade.

9. *Grading Policy*:

Letter Grade Minimum Percent	
A	>90
B	>80
C	>70
D	>60
F	<60

Grade Weighting	
Homework	30
Quiz	30
Project	10
Midterm	15
Final	15

10. Course (Student) Outcomes:

    Upon satisfactory completion of this course, the student will be able to:
    - Define and discuss terminology of kinematics.
    - Apply principles of kinematics and mechanisms in design scenarios.
    - Use computer software to construct and analyze mechanisms.

11. Learning Strategies (Instructional Methods):
    - Lecture, hands-on lab exercises, videotapes, guest speakers, team exercises, unit problems, worksheets, computer-based problem solving.

12. Unit (Competencies) Outcomes:

During this course, students will be expected, through definition and problem completion, to demonstrate competency in each of the following areas:

1. Kinematics Terminology
2. Construction of Virtual Kinematic Models
3. Vector Math
4. Position Analysis
5. Mechanism Design
6. Velocity Analysis
7. Acceleration Analysis
8. Computer-Aided Mechanism Analysis
9. Design and Analysis of Cams
10. Design and Analysis of Gears
11. Design and Analysis of Belt and Chain Drives
12. Design and Analysis of Screw Mechanisms
13. Static & Dynamic Force Analysis
14. Properties of Fluids