Date Board Approved: Date Prepared/Revised: 1/11/2012

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: Principles of Engineering
Course Number: EGT-410

Class Location and Time:
Room: Science 302 Day: TR Time: 9:10am-12:30pm
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: 9:40-11:20 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: 36 Lab: 36 Clinical:

3. Catalog Description:
   This course is an introduction to the opportunities and responsibilities of Engineering. Students will learn the fields of Engineering, and explore Engineering Careers. They will complete projects from areas such as Design, Engineering Systems, Thermodynamics, Fluid Systems, Electrical and Control Systems, Strength and Properties of Materials, and Production Process and Quality Control.

4. Prerequisites and/or Co-requisites: None

5. Textbook Required:
   - Engineering Mechanics Statics, R.C. Hibbeler, Prentice-Hall, 2010 ISBN:9780136077909

6. Supplemental Materials Required:
   - Ti-92 calculator or equivalent is highly recommended
   - Engineer Notebook – may be any notebook with permanent pages
   - USB flash drive

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	15
Quiz	15
Notebook	20
Transport Project Stacker Project Sorter Project	10 10 10
Midterm Final	10 10

10. Course (Student) Outcomes:
    - Students will demonstrate the ability to use critical thinking skills
    - Students will demonstrate the ability to communicate effectively.
    - Students will demonstrate personal responsibility.
    - to explain the different types of engineering and careers in engineering.
    - to explore the basic tools and functions of each engineering field.
    - to learn and utilize engineering technical writing and oral data presentation.
    - to analyze the legal, social and ethical issues related to engineering.

Expected performance outcomes (measurable): a, b, c, ….

a. The student will demonstrate knowledge of the definition and types of Engineering, the workings of the engineering team and careers in Engineering.

b. The student will plan and compose a written technical report about a career field in engineering.

c. Students will design and deliver a presentation utilizing appropriate support materials about research they have conducted.

d. Students conduct an energy analysis on a section of their home.

e. Students will design, diagram and implement a program using robotic systems, and defend their design solution in an oral presentation.

f. Students will prepare and present a mathematical analysis of a truss design as part of a 5 minute oral presentation about their bridge design.

g. Students will give an oral presentation on the production processes used to create products from a category of materials and a demonstration about one of the processes.

h. Students will prepare and defend a position on an ethical engineering dilemma.

i. Students will design and build a device for the purpose of conducting experiments of acceleration, displacement, and velocity.

○

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