Three Rivers
COMMUNITY COLLEGE

Engineering Statics – EGR K211
Spring 2011 Syllabus
Room D210, Thursdays, 6:00 – 8:45 pm

Instructor: Prof. Wanda Short
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Telephone: (860) 885.2349 office
Office Hours: 1:30 – 3:00 pm Mondays & Wednesdays; Alternate Days/Times by Appointment

Course Description:
Students will be introduced to engineering mechanics via vector approach to static forces and their resolution. Topics include: properties of force systems, free-body analysis, first and second moments of areas and mass and static friction. Applications to trusses, frames, beams and cables are included.
Prerequisite/Co-requisite: MAT K254, Calculus I

Text Book:
Hibbeler, R.C., *Engineering Mechanics, Statics*, 11th Edition, Pearson/Prentice Hall, 2007, ISBN: 0-13-221500-4

Reference Books:
Any statics or structural mechanics text.

Course Topics:
   I. VECTORS
  II. EQUILIBRIUM
 III. RESTRAINTS
 IV. STRUCTURAL ANALYSIS
  V. INTERNAL FORCES
 VI. FRICTION
VII. CENTROIDS

Course Objectives:
- Demonstrate the ability to solve problems related to Statics in an accurate, organized and neat manner,
- Demonstrate an understanding of the concept of a resultant force for systems of forces and proficiency in performing calculations,
- Demonstrate an understanding of the concept and calculations of the components of a force,
- Understand the principle of moments and solve for the moment caused by a force acting on a rigid body,
- Understand the principle of transmissibility and demonstrate the use of the principle of transmissibility to solve for reaction or for forces causing stress in members of a truss,
- Calculate the reaction forces at the supports of a rigid body at rest,
- Display competence in the determination of the force in members of a truss using the Method of Joints and the Method of Sections,
- Evidence of expertise in locating centroid and the center of gravity for rigid bodies at rest,
- Demonstrate proficiency in determination of moment of inertia or radius of gyration of a composite area and proficiency in their application in beam analysis.

Instructor Assistance:
Seeking help from the instructor outside of class is encouraged if you are having difficulty understanding course material. Feel free to Email/call for an appointment during office hours.

Academic Integrity:
Academic integrity is essential to a useful education. Failure to act with academic integrity severely limits a person's ability to success in the classroom and beyond. Furthermore, academic dishonesty erodes the legitimacy of every degree awarded by the College. In this class and in the course of your academic career, present only your own best work; clearly document the sources of the material you use from others; and act at all times with honor.

Homework:
If you cannot attend a lecture due to extraordinary events, **notify the instructor in advance** of the class you will miss. Unless special arrangements have been made with the instructor in advance, the due date for assignments **will not change**. You are responsible for obtaining the information covered at any meeting you miss. **Homework not received on due date may result in alternate assignment with reduction of grade due to lateness.**

Grading Policy:
Homework, quizzes, a mid-term and a final exam will be given during the semester. The dates of the exams are noted in the Lecture Schedule. Tests that are missed for any reason cannot be made up unless **prior** arrangements are made with the instructor. Approximately 30 minutes of the class meeting will be devoted for each quiz. The entire class will be devoted to the mid-term and final exams. Attendance and participation in class discussion and class problems will be noted for each class.

- ➢ 50%   Homework, Quizzes Average & Class Participation
- ➢ 20%   Mid Term
- ➢ 30%   Final Exam
-     100%   Total

Class Participation & Attendance:
This course is designed in such a way that a student should get more from the in-class activities than from the textbook alone. Therefore, students who are registered for this course are naturally expected to attend class regularly. Over the span of a semester the instructor expects to become familiar with the attendance habits of individual students. Therefore, these habits cannot help but be a factor in the evaluation of class participation and student contribution.

Withdrawal:
A student who finds it necessary to discontinue a course must complete a "Withdrawal Request Form" available in the Registrar's office within the time limits of the semester calendar. Students who do not withdraw, but stop attending will be assigned an "F" signifying a failing grade.

Disabilities Statement:
If you are a student with a disability and believe you will need accommodations for this class, you must contact the Disabilities Counseling Services at (860) 823-2830. To avoid any delay in the receipt of accommodations, you should contact the counselor as soon as possible. The instructor cannot provide accommodations until an accommodation letter from the Disabilities Counselor is received.

Technologies Department
Engineering Statics – Spring 2011
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Date	Class #	Event	Topic	Section Reading Prior to Class
Jan 20	1		General Principles Force Vectors	1.1 – 1.6 2.1, 2.4
Jan 27	2	HW #1 due	Force Vectors Equilibrium of a Particle	2.5 – 2.9 3.1 – 3.3
Feb 3			**Class Not in Session**	
Feb 10	3	HW #2 due	Force System Resultants	4.1 – 4.4
Feb 17	4	HW #3 due *Quiz #1*	Force System Resultants	4.6 – 4.8
Feb 24	5	HW #4 due	Equilibrium of a Rigid Body	5.1 – 5.3
Mar 3	6	HW #5 due *Quiz #2*	Equilibrium of a Rigid Body	5.4 – 5.7
Mar 10	7	HW #6 due	Trusses Method of Joints; Zero-Force Members	6.1 – 6.3
Mar 17			**Class Not in Session – Spring Break**	
Mar 24	**8**	**Mid-Term**	**Topics Covered in Classes #1 - #6**	
Mar 31	9	HW #7 due	Trusses Method of Sections	6.4
Apr 7	10	HW #8 due	Frames and Machines	6.6
Apr 14	11	HW #9 due *Quiz #3*	Internal Forces	7.1
Apr 21	12	HW #10 due	Shear and Moment Equations and Diagrams	7.2, 7.3
Apr 28	13	HW #11 due *Quiz #4*	Friction Center of Gravity and Centroid	8.1 – 8.2 9.1 – 9.3
May 5	14	HW #12 due	Moments of Inertia	10.1 – 10.5 10.9
May 12	**15**	**Final Exam**	**Topics Covered in Classes #7 - #14**	

Quizzes & Exams:
- **Closed Book**
- **Only 1 Page (8.5x11) of Notes (double-sided) Permitted**