

COLLEGEWIDE COURSE OUTLINE OF RECORD

METC 111, STATICS

COURSE TITLE: Statics

COURSE NUMBER: METC 111

PREREQUISITES: MATH 137 Trigonometry with Analytic

SCHOOL: Applied Science and Engineering Technology

PROGRAM: Mechanical Engineering Technology

CREDIT HOURS: 3

CONTACT HOURS: Lecture: 2 Lab: 2

DATE OF LAST REVISION: Fall, 2012

EFFECTIVE DATE OF THIS REVISION: Fall, 2013

CATALOG DESCRIPTION: Studies applied mechanics dealing with bodies at rest without the use of calculus. Covers units, vectors, forces, equilibrium, moments and couples, planar force systems, distributed forces, analysis of structures, and friction.

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course the student will be expected to:

1. Determine the resultant of several vectors.
2. Calculate the moment of a force by multiplying the total force by (a) its moment arm and (b) multiplying each force component by its respective moment arms.
3. Calculate the moment of a couple.
4. Replace a given force-couple system by an equivalent force-couple system at a different location.
5. Draw complete free-body diagrams of whole mechanisms or parts of mechanisms.
6. Apply the equations of equilibrium to free-body diagrams.
7. Calculate the axial loads in truss members using (a) the method of sections and (b) the method of pins.
8. Calculate the pin reactions for various mechanisms and frames using the method of members.
9. Apply the friction laws for dry surfaces.
10. Determine if motion is (a) impending slipping or (b) impending tipping.
11. Locate the centroid of a (a) composite area and (b) a composite line.
12. Construct complete load-shear-bending moment diagrams using slope-area methods.

COURSE CONTENT: Topical areas of study will include -

Forces and vectors

Solutions and summary

Moments and force

Trusses

Project

Frames

Mathematics review

Vector resolution

Distributed force

Equilibrium and free body diagrams

Sections

Friction

HOW TO ACCESS THE IVY TECH COMMUNITY COLLEGE LIBRARY:

The Ivy Tech Library is available to students' on- and off-campus, offering full text journals and books and other resources essential for course assignments. Go to <http://www.ivytech.edu/library/> and choose the link for your campus.

ACADEMIC HONESTY STATEMENT:

The College is committed to academic integrity in all its practices. The faculty value intellectual integrity and a high standard of academic conduct. Activities that violate academic integrity undermine the quality and diminish the value of educational achievement.

Cheating on papers, tests or other academic works is a violation of College rules. No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials and other academic work. This includes students who aid and abet as well as those who attempt such behavior.

COPYRIGHT STATEMENT:

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ADA STATEMENT:

Ivy Tech Community College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. If you need an accommodation because of a documented disability, please contact the Office of Disability Support Services.

If you will require assistance during an emergency evacuation, notify your instructor immediately. Look for evacuation procedures posted in your classroom.

SYLLABUS FOR METC 111, STATICS

The instructor will provide students with a course syllabus on the first scheduled class meeting. The syllabus should communicate clear and concise information to help the student understand the scope of the course and expectation for successful completion. The following information will appear on the syllabus and be identical to information on the Course Outline of Record (COR):

Required Syllabus Information from (COR)

- Course title
- Course prefix and number
- Prerequisite(s)
- Corequisite(s)
- Program
- Division
- Credit hours
- Contact hours
- Catalog description
- Major course learning objectives
- Course content
- Academic honesty statement
- ADA statement

Additional Required Syllabus Information

The syllabus must also contain the following additional information. The instructor may determine the content of this information.

- Instructor
- Course section number
- Additional course learning objectives (if required)
- Required text, or other instructional materials
- Required consumable materials and equipment supplied by student
- Instructor phone number
- Instructor e-mail address
- Instructor office location and hours
- Method(s) of instructional delivery
- Method(s) of evaluation
- Grading scale
- Make-up policy
- Attendance policy
- Activities schedule, including calendar of topics, assignment, test, etc.
- Last date to drop course without grade

- The name and location of the Disabilities Support Services Coordinator
- Right of revision statement

Optional Syllabus Information

Faculty are encouraged to provide additional information that will help the student understand in more detail how the class will be conducted.

- Extra credit work, if applicable
- Class/lab relationship
- References or reading that are optional but recommended
- Format for papers, projects, or other assignments
- Computer room/lab rules if applicable
- Withdrawal process and responsibility
- Other