

PELLISSIPPI STATE COMMUNITY COLLEGE  
MASTER SYLLABUS

**APPLIED STATICS  
MET 1040**

**Class Hours: 3.0**

**Credit Hours: 3.0**

**Laboratory Hours: 0.0**

**Revised: Fall 2010**

**Catalog Course Description:**

A study of the effects of forces acting on rigid bodies at rest. Topics include moments, equilibrium, simple trusses friction, centroids and moments of inertia.

**Entry Level Standards:**

Students entering this course must have a working knowledge of geometry, advanced algebra, and trigonometry.

**Prerequisites:**

MATH 1710

**Textbook(s) and Other Course Materials:**

*Statics and Strength of Materials*: Cheng, Glenco/McGraw Hill, Latest Edition, 1997.

**I. Week/Unit/Topic Basis:**

<b>Week</b>	<b>Topic</b>
1-2	Fundamental Concepts and Principles
3-5	Resultants of Coplanar Force System
6-10	Equilibrium of Coplanar Force Systems
11-12	Analysis of Structures
13	Friction
14	Center of Gravity
15	Final Exam/Presentation/Project

**II. Course Goals\*:**

**The course will:**

- A. Guide students to understanding the basic concepts of statics. (I-III)

- B. Guide students to independently apply problem-solving techniques to statics problems. (I-IV)
- C. Enhance effective use of outside resources, including computer software, to supplement the course. (II-V)
- D. Expand student understanding of calculating centers of gravity using calculus. (I, II)
- E. Guide students to relate topics covered during the course to the field of engineering technology. (I-V)

\* Roman numerals after course goals reference goals of the Engineering Technology Program

### **III. Expected Student Learning Outcome\*:**

The student will be able to:

1. Construct free body diagrams. (A, B)
2. Solve for resultant forces. (A, B)
3. Calculate moments. (A, B)
4. Associate and apply force analysis to system equilibrium. (A, B)
5. Solve for forces in truss members using method of joints and method of sections. (A, B)
6. Solve for the frictional forces due to sliding friction, belt friction, disk friction, and rolling resistance. (A, B)
7. Locate the centroid or center of gravity of both a homogeneous and non-homogeneous body using calculus. (A, B)
8. Prepare and give an oral presentation on statics that meets professional standards (D, E)
9. Use the software available to solve specific types of statics problems. (C, E)

\*Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

### **IV. Evaluation:**

Total evaluation will be based on the following point distribution.

#### **A. Unit Exams: (65 Points)**

There will be 4-6 unit exams administered during the course.

#### **B. Homework/Presentation : (10 Points)**

Homework will be assigned throughout the semester and turned in the day of the unit exam. Late homework will not be accepted. Informal laboratories and demonstrations will be completed in class. Those requiring calculations will be taken up and count toward the homework grade. The presentation to the class will count towards three of the ten points.

#### **C. Final Exam: (20 Points)**

There will be a comprehensive final exam administered at the end of the course.

**D. Participation: (5 Points)**

Based on instructor observation during the course, each student will be evaluated on participation activities. Evaluation parameters to include active participation in class discussions, response to verbal questions, and regular attendance.

**E. Grading Scale:**

Final grade for this course will be based on the following alphabetic/numerical scale.

A	93-100
B+	88-92
B	83-87
C+	79-82
C	74-78
D	65-73
F	Below 65

**V. Policies:**

**A. Attendance Policy:**

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of the Learning Division, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of the Learning Division.

**B. Academic Dishonesty:**

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one's own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

**C. Accommodations for disabilities:**

Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be

contacted by going to Goins 127, 132, 134, 135, 131 or by phone: 539-7153 or TTY 694-6429.  
More information is available at [www.pstcc.edu/departments/swd/](http://www.pstcc.edu/departments/swd/).

D. Other Policies:

Safety and Equipment Abuse: Repeated safety violations will result in a reduction of final grade, at the instructor's discretion. Flagrant violations which result in equipment damage or personal injury will result in automatic failure of the course.