PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

APPLIED STATICS
MET 1040

Lecture/Lab Hours: 3 **Credit Hours: 3**

Date Revised: Spring 2017

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 center of gravity.

Prerequisites

MATH 1710

Co-requisites

NONE

Textbooks and Other Supplies

Applied Statics and Strength of Materials: Limbrunner and Speigel, Pearson Prentice Hall, 5th edition or newer, 2009.

Week/Topic Basis

Week	Topic
1-2	Fundamental Concepts and Principles
3-5	Resultants of a Coplanar Force Systems
6-10	Equilibrium of Coplanar Force Systems
11-12	Analysis of Structures
13	Friction
14	Center of Gravity
15	Final Exam

Engineering Technology General Outcomes (Educational objectives)

I. Apply basic engineering theories and concepts creatively to analyze and solve technical problems.

II. Utilize with a high degree of knowledge and skill equipment, instruments, software, and technical reference materials currently used in industry.
III. Communicate effectively using developed writing, speaking, and graphics skills.
IV. Assimilate and practice the concepts and principles of working in a team environment.
V. Obtain employment within the discipline or matriculate to a four year program in engineering or industrial technology.

Engineering Technology Concentration Competencies
NOTE: At the program level all 6 competencies apply to roman numerals I – V of the Engineering Technology General Outcomes (Educational objectives) listed above.

Students will
A. Apply the knowledge, techniques, skills, and modern tools for the concentration of study to specifically defined engineering technology activities.
B. Demonstrate the knowledge of mathematics, science, engineering and technology to engineering technology problems using developed practical knowledge.
C. Conduct and report the results of standard tests and measurements, and conduct, analyze and interpret experiment or project results.
D. Function effectively as a member of a technical team.
E. Identify, analyze and solve specifically defined engineering technology-based problems.
F. Employ written, oral and visual communication in a technical environment.

Course Goals
NOTE: Capital letters after course goals reference goals of the Engineering Technology Program.

The course will
1. Guide students to understanding the basic concepts of statics. (A,B,E,F)
2. Guide students to independently apply problem-solving techniques to statics problems. (A,B,E,F)
3. Enhance effective use of outside resources, including computer software, to supplement the course. (A,B,E,F)
4. Expand student understanding of calculating centers of gravity using calculus. (A,B,E,F)
5. Guide students to relate topics covered during the course to the field of engineering technology. (A,B,E,F)

Expected Student Learning Outcomes
NOTE: Numbers after Expected Student Learning Outcomes reference the course goals listed above.

The student will

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

Evaluation

Total evaluation will be based on the following point distribution.

Testing Procedures

Unit Exams **65 points**
There will be 4-6 unit exams administered during the course.

Homework/Presentation **10 Points**
Homework will be assigned throughout the semester. Late homework will not be accepted

Final Exam **20 Points**
There will be a comprehensive final exam administered at the end of the course.

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.

Laboratory Experiences

N/A

Field Work

N/A

Other Evaluation Methods

N/A

Grading Scale

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

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

Policies

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 Academic Affairs, 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 Academic Affairs.

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.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

Accommodations for Disabilities

Students that 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 Disability Services (DS) in order to receive accommodations in this course. Disability Services (http://www.pstcc.edu/sswd/) may be contacted via Disability Services email or by visiting Alexander 130.

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 could result in automatic failure of the course