

PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

**SPECIAL PROJECTS: MET
MET 2610**

Class Hours: 2.0

Credit Hours: 2-4

Laboratory Hours: 6.0

Revised: Fall 2010

Catalog Course Description:

A projects-based course in which the students and the instructor identify a research design problem to be pursued by the students. This course exposes the students to “real world” situations encountered in industry and offers the students an opportunity to apply the skills, knowledge, and abilities learned in previous classes. May be repeated, maximum 8 credits.

Entry Level Standards:

Students entering this course should have sophomore class standing in Mechanical Engineering Technologies (MET). The program coordinator must approve any exceptions.

Prerequisites:

Sophomore class standing

Textbook(s) and Other Course Materials:

Textbook: None

Handouts: Instructor Generated

Resources: Library, Internet, Subject Matter Experts, Industrial Partners

I. Week/Unit/Topic Basis:

Week	Topic
1	Course Introduction Project Planning & Logistics
2-5	Design Criteria & Considerations
6-11	Production and Assembly
12-13	Inspection (parts & assemblies)
14	Functional Testing & Analysis
15	Presentations & Reports; Final Exam

II. Course Goals*:

The course will:

- A. Apply basic skills and knowledge of mechanical design. (I-V)
- B. Apply basic skills and knowledge of manufacturing. (I-V)
- C. Apply basic skills and knowledge of quality control. (I-V)
- D. Apply basic skills and knowledge of electrical engineering technologies. (I-V)
- E. Apply basic skills and knowledge of computer integrated drafting. (I-V)
- F. Work in a multi-disciplinary team to create a product. (I-V)
- G. Present results and findings in a professional and formal manner. (I-V)

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

III. Expected Student Learning Outcomes*:

The student will be able to:

1. Identify, explain, and apply mechanical design concepts to include the following areas of study: statics; strengths of materials; fluid power application; mechanical elements and systems; part print production, and work scheduling. (A, F, G)
2. Identify, explain, and apply manufacturing concepts, such as: process and tooling selection; material acquisition; part programming and production, work handling and scheduling. (B, F, G)
3. Identify, explain, develop, and apply quality control practices as they relate to the following: test plan development; destructive and nondestructive testing procedures; statistical process control (SPC); coordinate measuring techniques and programming; and data collection and analysis. (C, F, G)
4. Identify, explain, and apply electrical and electronic concepts to include the following areas of study: AC and DC circuits, microprocessors, and rotating machinery (e.g. motors, servo drives, and generators) (D, F, and G)
5. Identify, explain, and apply computer drafting and design concepts to include the following: three-view orthographic drawings, auxiliary and section views, assembly drawings, fluid power schematics, and electrical diagrams. (E, F, G)
6. Develop information and write technical reports and related documents, such as feasibility studies, progress reports, test plans, control charts, forms, and final inspection analysis documents. (A, B, C, D, E, F, & G)

7. Present findings formally as a team to an evaluation committee or peer group. (A, B, C, D, E, F, & G)

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

IV. Evaluation:

A. Testing Procedures:

Evaluation of work is required in this course. Total evaluation is based on the following point distribution.

B. Laboratory Expectations:

Project Production (40 Points)

Project Report (35 Points)

Project Presentation (20 Points)

Guidelines and requirements for the project will be developed by the instructor and students.

C. Field Work:

N/A

D. Other Evaluation Methods:

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 team discussions, being prepared, efficient use of lab time, striving to achieve more than minimum requirements, and regular attendance.

E. Grading Scale:

Final grade for this course will be based on the following alpha-numeric 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/

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.