PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS
ENGINEERING TECHNOLOGY CAPSTONE
ENGT 2995

Class Hours: 0.0
Credit Hours: 3.0
Laboratory Hours: 4.0
Revised: Spring 2013

Catalog Course Description:
A project or research-oriented course that emphasizes synthesis through collaborative learning. Students integrate and apply previous knowledge, skills and experiences they have learned in their major and academic courses to complete a team-oriented project. The course emphasizes communication skills, critical thinking, problem solving, computer literacy, and teaming skills.

Entry Level Standards:
Students must be proficient in the basics of their engineering technology concentration and have sufficient mastery of mathematics, communication skills, problem solving, computer literacy, and teaming skills.

Prerequisites:
Must be taken in the final semester or with coordinator approval.

Textbook(s) and Other Course Materials:


Other required Materials: Additional textbooks and materials may be required.

Handouts: Instructor Generated

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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</thead>
</table>
| 1-2  | Course Introduction  
Team Formation and Project Approval  
Review Teaming and Oral Communication Techniques |
| 3    | Presentation of Project Or Research Plan |
| 4-12 | Develop & Complete Project  
Develop & Complete Written Report & Oral Presentation |
| 13-14| Submit Project & Written Report  
Deliver Oral Presentation |
II. 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

III. Engineering Technology Concentration Competencies*

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

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

IV. Course Goals*:

The course will

1. Enhance the student’s ability to communicate effectively by developing oral presentations, written technical reports, and technical drawings. (A, C, D)

2. Integrate and apply previous knowledge, skills, and experiences learned in major discipline and academic courses. (A-F)

3. Apply and demonstrate computer literacy and research skills. (A-C)

4. Enhance the student’s ability to function in a team environment. (A-F)

5. Encourage research, development and production of a comprehensive project. (A-F)

*Capital letters after course goals reference the competencies of the Engineering Technology
concentrations listed above.

V. Expected Student Learning Outcomes*:

Students will be able to:

a. Prepare a comprehensive technical report based on individual and collaborative effort. (1, 4, 5)

b. Prepare an oral presentation using Microsoft PowerPoint through individual and collaborative effort. (1, 4, 5)

c. Deliver oral presentation using proper speech techniques. (1, 4, 5)

d. Utilize library and internet research to plan, develop, and analyze a team based project. (3, 4, 5)

e. Utilize and synthesize engineering technology theory, laws, procedures, techniques, and psychomotor skills learned in major discipline courses. (1-5)

f. Utilize and synthesize mathematical, scientific, cultural, ethical, computer, and communication skills learned in academic courses. (1, 2, 4)

g. Utilize computer based word-processing, spreadsheet, drawing, mathematical, and discipline related software. (1, 3, 4)

h. Develop, implement, analyze, and complete a project in a teaming environment. (1-5)

i. Identify and resolve conflicts, which will decrease effectiveness in a teaming environment. (4)

j. Demonstrate ability to function as an active and effective team member. (4)

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

VI. Evaluation:

A. Testing Procedures:

The specific evaluation methods and focus will vary according to the course content.

Students can expect to be evaluated upon:

- Use of library, internet and industry resources for research
- Communication skills, both written and verbal
- Interpretation and production of technical documents such as drawings and reports
- Team effectiveness
- Technical knowledge
- Project results
- Final presentation
- Exams

B. Laboratory Expectations:
C. Field Work:

n/a

D. Other Evaluation Methods:

n/a

E. Grading Scale:

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

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93-100</td>
</tr>
<tr>
<td>B+</td>
<td>88-92</td>
</tr>
<tr>
<td>B</td>
<td>83-87</td>
</tr>
<tr>
<td>C+</td>
<td>79-82</td>
</tr>
<tr>
<td>C</td>
<td>74-78</td>
</tr>
<tr>
<td>D</td>
<td>65-73</td>
</tr>
<tr>
<td>F</td>
<td>Below 65</td>
</tr>
</tbody>
</table>

VII. 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 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.

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.

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

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 could result in automatic failure of the course