

APPLIED TROUBLESHOOTING

COURSE SYLLABUS

Revised 01/05/2012

C - L - CR
1 - 6 - 3

COURSE NUMBER: EEM 276

PREREQUISITE(S): EEM 202 or permission

CO-REQUISITE(S): None

COURSE DESCRIPTIONS This course is an application of electronic troubleshooting methods. The student analyzes, troubleshoots, and repairs circuits.

TEXTBOOK(S): Supplemental documents will be supplied from the instructor.

REFERENCE(S): None

OTHER REQUIRED MATERIALS, TOOLS, AND EQUIPMENT: Calculator
Safety Glasses
Digital Multimeter

METHOD OF INSTRUCTION: This is a lecture/lab course. The course will be supplemented throughout by visual presentations and lab demonstrations.

GRADING SYSTEM:

90	-	100	=	A
80	-	89	=	B
70	-	79	=	C
60	-	69	=	D
Below	-	60	=	F

GRADE CALCULATION METHOD:

Projects and Labs	=	70%
Exams	=	20%
Attendance and Participation	=	<u>10%</u>
Total		100%

ATTENDANCE POLICY: Students are responsible for punctual and regular attendance in all classes, laboratories, field trips, and other class activities. The College does not grant excused absences; therefore, students are urged to reserve their absences for

emergencies. When illness or other emergencies occur, the student is responsible for notifying instructors and completing work missed.

Students are tardy if not in class at the time the class is scheduled to begin. Tardy students are admitted to class at the discretion of the instructor.

If you have attended at least one session during the first week of the semester you are responsible for dropping yourself from the class. It is the students' responsibility to withdraw from a course. A student who stops attending class and fails to initiate a withdrawal will remain on the class roster.

If you do not attend a class session during the first week of class you will automatically be dropped by the College.

A student who does not complete an assignment, test, or final exam in the course will receive a zero for each missing grade and the final course grade will be calculated accordingly.

Absences for Religious Holidays: Students who are absent from class in order to observe religious holidays are responsible for the content of any activities missed and for the completion of assignments occurring during the period of absence. Students who anticipate their observance of religious holidays will cause them to be absent from class and do not wish such absences to penalize their status in class should adhere to the following guidelines:

1. Observance of religious holidays resulting in three or fewer consecutive absences: Discuss the situation with the instructor and provide written notice at least one week prior to the absence(s). Develop (in writing) an instructor-approved plan which outlines the make-up of activities and assignments.
2. Observances of religious holidays resulting in four or more consecutive absences: Discuss the situation with the instructor and provide the instructor with written notice within the first 10 days of the academic term. Develop an instructor-approved plan which outlines the make-up of activities and assignments.

**ACADEMIC
CONDUCT:**

ACADEMIC DISHONESTY: Students are expected to uphold the integrity of the College's standard of conduct, specifically in regards to academic honesty. All forms of academic dishonesty including, but not limited to, cheating on assignments/tests, plagiarism, collusion, and falsification of

information will call for disciplinary action. Disciplinary action imposed may include one or more of the following: written reprimand, loss of credit for assignment/test, termination from course, and probation, suspension, or expulsion from the College. For further explanation of this and other conduct codes, please refer to the Student Handbook.

CELLULAR PHONES AND PAGERS/BEEPERS: Cellular phones, pagers and beepers are not permitted to be turned on or used within the classroom. Use of these devices during classroom time will be considered a violation of the student code as it relates to “disruptive behavior.”

CLASS/LAB PROCEDURES:

Labs will be submitted in written form, complete with equipment list, procedures, results, and summaries.

ACCOMMODATIONS:

Students who need special accommodations in this class because of a documented disability should notify Student Disability Services by calling (864) 592-4818, toll-free 1-800-922-3679; via email through the SCC web site at www.sccsc.edu/resources/disabilities; or by visiting the office located in the East Building Room 30-B on the SCC Central campus. Contacting Student Disability Services early in the semester gives the College an opportunity to provide necessary support services and appropriate accommodations.

Inclement Weather Schedule:

- Check SCC Web Site: www.sccsc.edu
- Tune to **Channel-7** Local T.V. Station (CBS)
- Tune to an FM/AM Local radio station

COURSE COMPETENCIES & OBJECTIVES:

Upon satisfactory completion of this course, the student will be able to:

- I. Repair various stages of electronic equipment.
 1. Demonstrate proper use of a digital multimeter to measure resistance, current, and voltage.
 2. Demonstrate proper use of the oscilloscope to determine faulty analog and digital signals.
 3. Demonstrate proper use of the common hand tools used in electronic troubleshooting and repair.
 4. Use selected specialized test instruments.
 5. Demonstrate differences between TTL and CMOS devices.

- II. Employ proper techniques to construct a complete printed circuit board.
 - 1. Demonstrate the proper method for creating PC layouts.
 - 2. Etch and develop a single sided board.

- III. Build an electronic device using discrete and integrated components.
 - 1. Demonstrate the ability to present technical data to an audience both orally and in writing.
 - 2. Document the steps necessary to troubleshoot their project.
 - 3. Demonstrate the ability to develop and follow a project plan.