EEM 117
AC/DC CIRCUITS I

Course Description
This course is a study of direct and alternating theory, Ohm’s Law, series, parallel, and combination circuits. Circuits are constructed and tested. <Prerequisites: none>
4 Cr (4 lect/pres, 0 lab, 0 other)

Text and References
Text books are downloadable
1.) http://www.allaboutcircuits.com/vol_2/index.html
2.) http://www.allaboutcircuits.com/vol_1/index.html

Course Goals
The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives (Addendum A). (*designates a CRUCIAL goal)

1. calculate Amp-hours from a model circuit
2. utilize Oscilloscope instrument
3. construct RCL circuits
4. construct AC Inductive- Capacitive circuits
5. define Capacitive Reactance term
6. construct Inductive circuits
7. construct RC circuit components
8. define Power term
9. calculate voltage division in a Series resistive current
10. construct DC series-parallel resistive circuits
11. define Lambda value
12. analyze Series RCL circuits
13. design power supply circuits
14. predict DC resistive circuit characteristics calculator
15. learn Basic Atomic theory
16. learn basic Scientific calculator functions
17. learn Electron flow theory
18. interpret Resistor color code values
19. define Ohm’s Law quantities
20. learn basic passive component schematic symbols
21. define Current term
22. calculate Ohm’s Law properties
23. analyze DC series resistive circuits
24. calculate Total resistance in a DC series circuit
25. calculate Voltage division in a DC Series resistive circuit
26. learn metric prefix "nano" term
27. calculate total voltage in a DC series circuit
28. calculate total current in a DC parallel resistive circuit
29. define Resistance term
30. learn metric prefix Kilo term
31. learn metric prefix Mega term
32. learn metric prefix "micro" term
33. apply metric prefixes quantities
34. construct DC series resistive circuits
35. analyze DC parallel resistive circuits
36. learn metric prefix "milli" term
37. learn Schematic symbol resistor
38. calculate current division in a DC parallel resistive circuit
39. construct DC parallel resistive circuits
40. analyze DC series-parallel resistive circuits
41. analyze Capacitive reactance properties
42. learn schematic symbol capacitor
43. utilize Digital Multi-meter instrument
44. troubleshoot DC Series resistive circuit
45. troubleshoot AC resistive circuit
46. read DC oscilloscope
47. analyze Parallel LC circuits
48. calculate Power in a circuit
49. define Capacitance term
50. learn schematic symbol inductor
51. troubleshoot DC Parallel resistive circuit
52. read AC signal oscilloscope
53. troubleshoot DC Resistance Capacitive circuit
54. define Inductance term
55. calculate Capacitive reactance models
56. analyze Inductive circuit characteristics
57. define Impedance term
58. solve Impedance circuit
59. calculate Lambda for a signal
60. calculate Impedance from model circuits

Students Contributions
Each student will spend approximately 2.5-5 hours per week preparing for class and completing assignments to turn in weekly.

Each week students will turn in assignments as specified on Blackboard. In addition, chapter tests are to be completed as assigned. Students will also complete a final exam/project to demonstrate their knowledge of the material.

Student Attendance Policy: See student handbook within the TCL Catalog.

Course Evaluation
There will be four cumulative exams offered via Blackboard, including the Final examination. The first three exams will be worth 100 points each. The Final exam will be worth 300 points.
Course Schedule
The class meets for 4 lecture/presentation hours per week on Monday evenings (5:20-8:40pm). Course content will be taught in the order that the content goals are presented in the syllabus. The schedule for this course is provided on Blackboard.
AMA Statement
The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8228 during the first ten business days of the academic term.

Academic Misconduct
There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student’s responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the TCL Student Handbook, the Division Office, and the Learning Resources Center.

Attendance
The College’s statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.

- Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING. Reinstatement requires the signature of the division dean.

- Students taking an online/internet class must sign in and communicate with the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING. Reinstatement requires the signature of the division dean.

- In the event it becomes necessary for a student to withdraw from the course OR if a student stops attending class, it is the student’s responsibility to initiate and complete the necessary paperwork. Withdrawing from class may have consequences associated with financial aid and time to completion.

- When a student exceeds the allowed absences, the student is in violation of the attendance policy. The instructor MUST withdrawal the student with a grade of “W”, “WP”, or “WF” depending on the date the student exceeded the allowed absences and the student’s progress up to the last date of attendance. Under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.

- Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.

- A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.

- A copy of TCL’s STATEMENT OF POLICY NUMBER: 3-1-307 CLASS ATTENDANCE (WITHDRAWAL) is on file in the Division Office and in the Learning Resources Center.

Hazardous Weather
In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGCO 98.3, WGZO 103.1, WFXH 106.1, WWVV 106.9, WLOW 107.9, WGZR 104.9, WFXH 1130 AM, WLW 101.1, WSOK 1230 AM, WAEV 97.3, WTOC TV, WTGS TV, WJWJ TV, and WSAV TV. Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. www.tcl.edu/textalert.asp
Emergency Text Message Alert

Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. Participants receive immediate notification of emergency events and weather cancelations via text messaging on their cell phones. Participants can also opt in to receive non-emergency news and announcements. Go to www.tcl.edu. On the homepage, click on “emergency Text Alert at TCL” and fill out the form or go to www.tcl.edu/textalert.asp