Course Syllabus

Course: **Electronic Communications**

Course Detail:

CRN	Course #	Credits	Title	Day	Time	Date	Room
31840	EET K274	3	Electronic Communications	TR	1 :00-2 :15	8/31-12/23	K229
31841	EET K275	1.5	Lab, Electronic Communications	TR	2 :16-3 :31	8/31-12/23	K229

Prerequisites: **EET* K105/106** **Corequisite:** **EET* K275**

Instructor: **Dan Courtney – dcourtney@trcc.commnet.edu – 860-215-9417**

Office Hours: **As Posted – C134**

Text: **Electronic Communications: A Systems Approach, Jeffery Beasley, Jonathan Hymer**

Course Description:

Students will study communications from an informational and circuit/systems point of view. Modulation theory and techniques will be covered. Noise considerations, bandwidth requirements, and the transmission, propagation, reception and detection of RF signals will be considered. Analog and digital considerations will be addressed.

This lab course supports the Electronic Communications Systems course by providing students with hands-on experience in the design, check-out, and evaluation of the various circuits and subsystems that comprise a communications system. Both computer simulation and bench experimentation are emphasized in gaining a familiarization with the circuitry and instrumentation involved.

Course Topics:

Review of Circuit Analysis
Communications Concepts
Amplitude & Frequency Modulation
Communications Circuits
Transmitters and Receivers
Digital Communications Techniques
Serial Communications
Wireless Communications
Network Concepts
Wave Propagation
Transmission Lines
Fiber Optics

Laboratory Topics:

Individual Project
Modulators/Demodulators
Spectrum Analysis
Raspberry Pi Networking
Filters & Oscillators
Serial Communications
Wireless Communications
Fiber Optics

Course Format: Classes will consist of topic discussions, classroom exercises, projects and laboratory exercises. Classes will move fluently between these activities.

Course Grading: Class Participation, Technical Aptitude, Laboratory Skills, Professional Attitude
One grade is determined for both lecture and laboratory sections.

Attendance/Timeliness: Attendance is mandatory at all class and lab sessions. Tardiness of attendance and assignments will have a significant negative impact on grading.

Do not email the instructor asking if you missed anything when absent. You did. Get the information from your lab partner or another student.

All students are also required to maintain an online learning portfolio in Digication that uses the college template. The Digication Portfolio may be separate from the Course Portfolio. Specific items may be required for upload to the Digication Portfolio. The instructor will give specific direction concerning course content for upload to the Digication Portfolio.

Other Required Course Materials: Scientific Calculator e.g. TI-30 – Calculators should be available at all times during classes.

TRCC EET Outcomes

1. Students will practice the skills needed to work effectively in teams and as an individual.
2. Students will demonstrate the ability to use appropriate mathematical and computational skills needed for engineering technology applications.
3. Students will combine oral, graphical, and written communication skills to present and exchange information effectively and to direct technical activities.
4. Students will know of a professional code of ethics.
5. Students will describe concepts relating to quality, timeliness, and continuous improvement.
6. Students will describe how the concepts of electric circuits, electrical measurements, digital electronic devices, programmable logic circuits, electromechanical and automated systems, affect the design, maintenance, and operation of electrical systems.
7. Students will illustrate an ability to think critically and identify, evaluate and solve complex technical and non-technical problems; demonstrate creativity in designing problem solutions; and conduct and interpret experimental data and outcomes.
8. Students will recognize actions and acts of professionalism that allows them to become informed and participating citizens cognizant of ethics, civic duty, and social responsibility.
9. Students will recognize the need to be lifelong learners.

K274/5 Course Outcomes

1. Mastery of Electronic Communications Technology concepts as defined in the course syllabus
2. Knowledge of Electronic Communications terminology, quantities, units and relationships
3. Demonstrate an ability to build, test and troubleshoot Electronic Communications circuits and systems
4. Demonstrate an ability to analyze and solve problems relating to basic Electronic Communications systems
5. Demonstrate technician level oral and written communication skills
6. Demonstrate an appreciation for lifelong learning
7. Demonstrate proper professional and ethical behavior
8. Demonstrate a commitment to quality, timeliness and continuous improvement