



**Purpose:** It is the intention of this Administrative-Master Syllabus to provide a general description of the course, outline the required elements of the course and to lay the foundation for course assessment for the improvement of student learning, as specified by the faculty of Wharton County Junior College, regardless of who teaches the course, the timeframe by which it is instructed, or the instructional method by which the course is delivered. It is not intended to restrict the manner by which an individual faculty member teaches the course but to be an administrative tool to aid in the improvement of instruction.

**Course Title** - Introduction to Telecommunications

**Course Prefix and Number** - EECT 1303

**Department** – Electronics Eng. Tech.

**Division** - Technology and Business

**Course Type:** (check one)

- Academic General Education Course (from ACGM – but not in WCJC Core)
- Academic WCJC Core Course
- WECM course (This course is a Special Topics or Unique Needs Course: Y  or N )

**Semester Credit Hours # : Lecture hours # : Lab/Other Hours #**    **3:3:0**

**Equated Pay hours for course** - 3

**Course Catalog Description** - An overview of the telecommunications industry. Topics include the history of the telecommunications industry, terminology, rules and regulations, industry standards and protocols, microwave, satellite, optical, and wire/cable-based communications systems. Instruction in installation, testing, and maintenance of communications systems components. Introduction to data communication protocols.

List Lab/ Other Hours
Lab Hours 0
Clinical Hours
Practicum Hours
Other (list)

**Prerequisites/Co Requisites** - Credit for CEET 1405, CETT 1429, CETT 1449

**Prepared by** David Kucera

**Date** 05/15/13

**Reviewed by Department Head** David Kucera

**Date** 06/10/13

**Accuracy verified by Division Chair** David Kucera

**Date** 06/10/13

**Approved by Dean or Vice President of Instruction** Amy LaPan

**Date** 1/30/2014



**I. Topical Outline** – Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, clinical or other non-lecture instruction):

The following performance will be expected of any student completing this course with a passing grade. There is no absolute time limit on the performance of these objectives, unless noted, but the grade received by the student will depend, in part, on the relative speed and precision of the student's performance in these tasks. Where subjective evaluations are indicated, the instructor will make these judgments based on his or her knowledge of the skills required to place a graduate with the expectation of successful on-job performance.

The student will be expected to perform the following tasks in written examination or laboratory demonstration:

**Multiplexing**

- Time Division
- Frequency Division

**Telephone Systems**

- Fundamentals
- Dialing
- Architecture
- Facsimile
- Cellular Telephone systems
- Paging systems
- ISDN

**Satellite Communications**

- Digital Communications
- Modems
- Protocols and Error Detection
- Networks
- Spread Spectrum
- Internet

**Fiber Optic Communications**

- Light Wave systems
- Optical cable operation
- Fiber optical cable construction
- Optical transmitters and receivers
- Data communication systems

**Television**

- TV signal characteristics
- TV receiver design
- Cable TV
- Satellite TV
- Digital HDTV

**Digital Communications**

Data transmission system Fundamentals  
Pulse Modulation  
    PAM  
    PTM  
    PDM  
    PPM  
Digital Modulation  
Pulse Code Modulation  
Delta Modulation  
Companding

**II. Course Learning Outcomes**

<b>Course Learning Outcome</b> <b>Upon successful completion of this course, students will:</b>	<b>Methods of Assessment</b> <b>Outcomes 1,2,3,4,5,6 are assessed by:</b>
<ul style="list-style-type: none"> <li>• 1. Identify telecommunications system components</li> <li>• 2. Define, explain and use common telecommunication terms</li> <li>• 3. Describe the organizational evolution of the telecommunications industry</li> <li>• 4. Identify, define and describe the rules and regulations governing the telecommunications industry</li> <li>• 5. Identify and describe industry standards and protocols</li> <li>• 6. Describe safety procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Exams</li> <li>• Homework</li> <li>• Labs</li> <li>• Quizzes</li> <li>• Reassessed in Capstone Experience: CETT 2349</li> </ul>

**III. Required Text(s), Optional Text(s) and/or Materials to be Supplied by Student.**

An electronics text covering the required material such as: Communication Electronics by Frenzel  
Calculator – scientific with Sine, Cosine, Tangent capabilities

**IV. Suggested Course Maximum** - 30 lecture, 15 laboratory

**V. List any specific spatial or physical requirements beyond a typical classroom required to teach the course.**

Lecture facilities for 30 students. Laboratory facilities for 18 students must include 9 bench positions each with a digital meter, logic probe, 20 MHz oscilloscope and probes, bread boarding facility with power supply and signal generator, and a stock of basic AC circuit components.

**VI. Course Requirements/Grading System – Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course**

Evaluation of Performance:

Course grades will be determined by the percentage of course objectives for which the student can demonstrate mastery and by attendance as stated in the Departmental Policy sheet provided to the student. Mastery of course objectives will be determined by written examinations, an attendance grade as described in the Departmental Policy handout, a daily work grade which will include graded homework, graded laboratory work, and a comprehensive final exam.

Approximate Grade Evaluation Summary:

Major tests .....	60%
Attendance.....	10%
Lab reports, homework, and quizzes. ....	15%
Comprehensive Final examination .....	15%

**Grade Scale:**

90 to 100:	A
80 to 89:	B
70 to 79:	C
60 to 69:	D
0 to 59:	F

**VII. Curriculum Checklist**

- **Academic General Education Course** (from ACGM – but not in WCJC Core)  
No additional documentation needed
  
- **Academic WCJC Core Course**  
Attach the Core Curriculum Checklist, including the following:
  - Basic Intellectual Competencies
  - Perspectives
  - Exemplary Educational Objectives
  
- **WECM Courses**  
If needed, revise the Program SCANS Matrix & Competencies Checklist.