



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 – Research and Project Design

Course Prefix and Number - CETT 2349

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 # **3:2:2**

Equated Pay hours for course - 3

List Lab/ Other Hours
Lab Hours 2
Clinical Hours
Practicum Hours
Other (list)

Course Catalog Description - Principles of electrical/electronic design encompassing schematics, wiring diagrams, materials lists, operating characteristics, completion schedules, and cost estimates. The student will be required to plan and develop a project consisting of research, design, layout, construction and operation of an electrical-mechanical project. A formal written report and a demonstration and presentation of process and results are required. This course is intended to provide a Capstone experience for graduating Electronics Engineering Technology students.

Prerequisites/Co Requisites - Electronics Engineering Technology major expecting completion of all Electronics courses in the current semester.

Prepared by David Kucera	Date 05/10/15
Reviewed by Department Head David Kucera	Date 05/20/15
Accuracy verified by Division Chair David Kucera	Date 05/20/15
Approved by Dean or Vice President of Instruction Leigh Ann Collins	Date 12/3/15



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:

Week 1 : Introductions and Project consideration

Week 2 : Begin project design

Week 3 : Complete design with all documentation and schedules.

Week 4 : Preliminary design..

Week 5 : Obtain parts/assemble on breadboard.

Week 6 : Obtain parts/assemble prototype

Week 7 : Prototype testing

Week 8 : Design refinement

Week 9-13: Build hardware and test assembly

Week 14-15: Final functionality tests and documentation collection

Week 16 : Project and all documentation Due.

II. Course Learning Outcomes

Course Learning Outcome	Methods of Assessment
<p data-bbox="235 352 714 409">Upon successful completion of this course, students will:</p> <ul data-bbox="284 441 771 850" style="list-style-type: none">• Build a project using the principles of the electrical/electronic design process• Write an operations procedure of an electrical/electronic project• Demonstrate the operation or function of an electrical/electronic project• Use Critical thinking• Apply verbal and written communication• Work as a team• Apply project management skills• Show responsibility and ethical work habits• Apply technical knowledge and skills	<p data-bbox="803 378 1120 409">All outcomes are assessed by:</p> <p data-bbox="885 525 1258 556" style="text-align: center;">Standardized Departmental Rubric</p>

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

Departmental handouts, Internet, library, and data book references.

IV. Suggested Course Maximum - 15 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, 50 MHz oscilloscope and probes, bread boarding facility with power supply and signal generator, a comprehensive stock of electronic components, soldering irons, cutting, and drilling equipment..

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 This course is intended to provide a capstone experience to electronics majors expecting to graduate in the current year. Individual grades are determined by the quality of final project, individual contributions to the project, and written journal submissions.

Rubric: Grade total 100%

70% - Project
Group/Teamwork
Documentation
Presentations
Communication
Attendance

30% - Individual
Journal Entries
Work Ethic
Attendance
Personal contributions

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.