



**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** Technical Programming

**Course Prefix and Number** – CETT 1331

**Department** - Electronics

**Division** – Bus. and Technology

**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 #**     **3:3:1**

**Equated Pay hours for course** –  $3+(11/2) = 3.5$

|                          |
|--------------------------|
| List Lab/<br>Other Hours |
| Lab Hours<br>1           |
| Clinical Hours           |
| Practicum Hours          |
| Other (list)             |

**Course Catalog Description** – Introduction to a high level programming language such as BASIC, PASCAL, or “C”. Topics include structured programming and problem solving and how they apply to technical applications. Lecture and lab programming practice using Python.

**Prerequisites/Corequisites** - Credit or concurrent enrollment in MATH 1314

**Approvals** – the contents of this document have been reviewed and are found to be accurate.

|  |                                    |                  |
|--|------------------------------------|------------------|
| Prepared by<br><i>David Keenan</i>     | Signature<br><i>David Keenan</i>   | Date<br>9-24-07  |
| Department Head<br><i>David Keenan</i> | Signature<br><i>David Keenan</i>   | Date<br>9-24-07  |
| Division Chair                         | Signature<br><i>Stephanie Dees</i> | Date<br>11/8/07  |
| Vice President<br><i>Dr. Ty Pate</i>   | Signature<br><i>Ty Pate</i>        | Date<br>11/12/07 |



**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:

- \*Define, give examples of, and clearly differentiate between hardware and software.
- \*Define the nature of algorithms
- \*Describe the functioning of flowcharts and logic diagrams
- \*Use Boolean equations to make choices
- \*Understand the difference between high and low level languages
- \*Demonstrate the use of input and output statements.
- \*Convert text files to program code.
- \*Use mathematical operators as part of program code.
- \*Demonstrate the importance of formatting techniques and documentation.
- \*Demonstrate the use of IF/ELSE loops
- \*Understand the significance of infinite loops
- \*Use the REPEAT statement in programs.
- \*Describe the importance of making programs user friendly.
- \*Demonstrate the use of logical debugging techniques.
- \*Write functional programs of a technical nature using correct code.
- \*Understand the different data types.
- \*Use FUNCTIONS as part of a program
- \*Demonstrate the ability to solve a problem by logically breaking it down into sections.

**II. Course Learning Outcomes**

| Course Learning Outcome  | Method of Assessment   |
|--|--|
| Use structured programming methods to develop and execute high-level language programs which solve technical problems. | Assessed in Capstone Experience: ELMT 2330 Final Project course. |

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

An appropriate electronics text covering PYTHON. Example-How to think like a Computer Scientist.

Calculator – scientific with Sine, Cosine, Tangent capabilities..

**IV. Suggested Course Maximum - 20 lecture, 20 laboratory**

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

Lecture facilities for 20 students. Laboratory facilities for 20 students must include 20 bench positions each with a PC capable of running Windows and PYTHON.

**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, physical soldering exams, 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% |

**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**  
Attach the following:

- Program SCANS Matrix
- Course SCANS Competencies Checklist

| Program:<br>Electronics Technology                       |   |   |   |   |   |   |   | Credential:<br>AAS Degree     |                                    |
|--|---|---|---|---|---|---|---|-------------------------------|------------------------------------|
| LIST OF ALL COURSES REQUIRED AND IDENTIFIED COMPETENCIES |   |   |   |   |   |   |   |                               |                                    |
| Competencies   |   |   |   |   |   |   |   | Course Number                 | Course Title                       |
| 1  | 2 | 3 | 4 | 5 | 6 | 7 | 8 |                               |                                    |
| X  |   |   | X | X | X | X | X | CETT 1321                     | Electronic Fabrication             |
| X  | X | X | X | X | X | X | X | CETT 1403                     | D. C. Circuits                     |
| X  | X | X | X | X | X | X | X | CETT 1425                     | Digital Fundamentals               |
| X  | X | X | X | X | X | X | X | CETT 1405                     | A. C. Circuits                     |
| X  | X | X | X | X | X | X | X | CETT 1449                     | Digital Systems                    |
| X  | X | X | X | X | X | X | X | CETT 1331                     | Technical Programming              |
| X  |   | X | X | X | X | X | X | CETT 1341                     | Solid State Circuits               |
| X  | X | X | X | X | X | X | X | CETT 1445                     | Microprocessors                    |
| X  | X | X | X | X | X | X | X | CETT 1457                     | Linear Integrated Circuits         |
| X  | X | X | X | X | X | X | X | EECT 2439                     | Communication Circuits             |
| X  | X | X | X | X | X | X | X | ELMT 1301                     | Programmable Logic Controllers     |
| X  | X | X | X | X | X | X | X | ELMT 2330                     | Final Project                      |
| X  |   | X | X | X | X | X | X | ELMT 2433                     | Industrial Electronics             |
| X  | X | X | X | X | X | X | X | EECT 1303                     | Introduction to Telecommunications |
| X  | X |   | X | X | X |   |   | ENGL 1301                     | English                            |
| X  |   | X | X | X | X |   |   | MATH 1314                     | College Algebra                    |
| X  | X |   | X | X | X |   |   | ENGL 2311                     | Technical Report Writing           |
| X  |   | X | X | X | X |   |   | Math 1316                     | Trigonometry                       |
| X  |   |   | x | x | x |   |   | Elective                      | Social Behavioral Science          |
| X  |   |   | X | X | X |   |   | Elective                      | Humanities/Fine Arts               |
|  |   |   |   |   |   |   |   | <b>COMPETENCY REFERENCES</b>  |                                    |
|  |   |   |   |   |   |   |   | 8 B BASIC USE OF COMPUTERS    |                                    |
|  |   |   |   |   |   |   |   | 7 B WORKPLACE COMPETENCIES    |                                    |
|  |   |   |   |   |   |   |   | 6 B PERSONAL QUALITIES        |                                    |
|  |   |   |   |   |   |   |   | 5 B THINKING SKILLS           |                                    |
|  |   |   |   |   |   |   |   | 4 B SPEAKING AND LISTENING    |                                    |
|  |   |   |   |   |   |   |   | 3 B ARITHMETIC OR MATHEMATICS |                                    |
|  |   |   |   |   |   |   |   | 2 B WRITING                   |                                    |
| 1 B READING  |   |   |   |   |   |   |   |                               |                                    |