Wharton County Junior College

Administrative Master Syllabus

Course Information

Course Title	Programming for Discrete Electronic Devices
Course Prefix, Num. and Title	CETT 1331 Programming for Discrete Electronic Devices
Division	Technology and Business
Department	Electronics Engineering Technology
Course Type	WECM Course
Course Catalog Description	Introduction to a high level programming language. Includes structured programming and problem solving applicable to discrete electronic devices and how they apply to technical applications. Lecture and lab programming practice using Python.
Pre-Requisites	None
Co-Requisites	None

Semester Credit Hours

Total Semester Credit Hours (SCH): Lecture Hours: Lab/Other Hours	3:3:1
Equated Pay Hours	3.5
Lab/Other Hours Breakdown: Lab Hours	1
Lab/Other Hours Breakdown: Clinical Hours	0
Lab/Other Hours Breakdown: Practicum Hours	0
Other Hours Breakdown	0

Approval Signatures

Title	Signature	Date
Prepared by:	David Kucera Digitally signed by David Kucera DN: cn=David Kucera, o=Wharton County Junior College, ou=Division of Technology and Business, email=davidk@wcjc.edu, c=US Date: 2019.10.28 12:23:54 -05'00'	10/28/19
Department Head:	David Kucera Digitally signed by David Kucera DN: cn=David Kucera, o=Wharton County Junior College, ou=Division of Technology and Business, email=davidk@wcjc.edu, c=US Date: 2019.10.28 12:24:05 -05'00'	10/28/19
Division Chair:	David Kucera Digitally signed by David Kucera DN: cn=David Kucera, o=Wharton County Junior College, ou=Division of Technology and Business, email=davidk@wcjc.edu, c=US Date: 2019.10.28 12:24:17 -05'00'	10/28/19
Dean/VPI:	Paul J. Quinn Digitally signed by Paul J. Quinn Date: 2020.01.02 13:31:20 -06'00'	1/2/20
Approved by CIR:	Paul J. Quinn Digitally signed by Paul J. Quinn Date: 2020.01.02 13:31:57 -06'00'	9/26/19

Additional Course Information

Topical Outline:

Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and 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 loops
- Understand the significance of infinite loops
- Use repeating mechanisms 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 including lists.
- Use FUNCTIONS as part of a program
- Demonstrate the ability to solve a problem by logically breaking it down into sections.

Course Learning Outcomes:

Learning Outcomes – Upon successful completion of this course, students will:

Use structured programming methods to develop and execute high-level language programs which solve technical problems.

Methods of Assessment:

- Exams
- Homework
- Programming Projects
- Quizzes
- Reassessed in Capstone Experience: ELMT 2349 Final Project course.

Required text(s), optional text(s) and/or materials to be supplied by the student:

An appropriate electronics text covering PYTHON. Example-How to think like a Computer Scientist. http://www.openbookproject.net/thinkcs/python/english3e/

Suggested Course Maximum:

20 lecture, 20 laboratory

List any specific 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. PCs must have internet access.

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. 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%
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

Curriculum Checklist:

☐**Administrative General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.

☐**Administrative WCJC Core Course**. Attach the Core Curriculum Review Forms

- ☐Critical Thinking
- ☐Communication
- ☐Empirical & Quantitative Skills
- ☐Teamwork
- ☐Social Responsibility
- ☐Personal Responsibility

☒**WECM Course** -If needed, revise the Program SCANS Matrix and Competencies Checklist