![Wharton County Junior College logo]

Administrative Master Syllabus

Course Information

Course Title	Microprocessor
Course Prefix, Num. and Title	CETT 1345 – Microprocessor
Division	Technology and Business
Department	Electronics Engineering Technology
Course Type	WECM Course
Course Catalog Description	An introductory course in microprocessor software and hardware: its architecture, timing sequence, operation, and programming. Discussion of appropriate software diagnostic language and tools.
Pre-Requisites	CETT 1331 OR ELMT 1301
Co-Requisites	None

Semester Credit Hours

Total Semester Credit Hours (SCH): Lecture Hours: Lab/Other Hours	3:2:4
Equated Pay Hours	4
Lab/Other Hours Breakdown: Lab Hours	4
Lab/Other Hours Breakdown: Clinical Hours	0
Lab/Other Hours Breakdown: Practicum Hours	0
Other Hours Breakdown	0

Approval Signatures

Title	Signature	Date
Department Head:	David Kucera, Electronics Engineering Technology Program Director	10-26-2023
Division Chair:	David Kucera, Technology & Business Division Chair	10-26-2023
VPI:		

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 show understanding of the following in written examination or laboratory demonstration:

Hardware
- Computer Systems
- The bus concept
- Input techniques
- Output techniques
- Memory
- Memory Hierarchy
- Primary Memory – RAM/ROM
- Secondary Memory
- CPU-Introduction to processing action

Basic Processing
- Programming
- Assembly languages
- Timing and Multiplexing

Software
- Data transfer
- Arithmetic group
- Logical Group
- Loops and Jumps
- Interrupts

Interfacing
- Mathematical refinement
- Basic I/O Interfacing
- Programming Peripherals
- Controllers
- Data Communications: Serial I/O

Ardurino Microcontroller
- Architecture
- Instruction set
- Interrupts
- Input/output

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Course Learning Outcomes:

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

1. Define terms applicable to microprocessor/microcontroller systems
2. Program applications for microprocessor/microcontroller systems
3. Write a program to control microprocessor/microcontroller systems
4. Describe the purpose of microprocessor internal registers.

Methods of Assessment:

Outcomes 1,2,3,4 will be assessed by:

- Exams
- Homework
- Labs
- Quizzes
- Reassessed in Capstone Experience: CETT 2349 Final Project course

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

No text required; Instructor handouts
Calculator – scientific with Sine, Cosine, Tangent capabilities
Ardurino or similar Micro Controller

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 10 bench positions each with a digital meter, logic probe, 50 MHz oscilloscope and probes, bread boarding facility with power supply and signal generator, and a stock of basic circuit components.

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%

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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