Wharton County Junior College

Academic Master Syllabus

Course Information

Course Title	Fundamentals of Computer Numerical Controlled (CNC) Machine Controls
Course Prefix, Num. and Title	MCHN 2403
Division & Department	Vocational Science: Manufacturing Technology
Course Type	WECM Course
Course Catalog Description	Programming and operation of Computer Numerical Controlled (CNC) machine shop equipment. The course involves machining theory, including a study of conventional machining (with hands-on training), and transitioning to CNC machining (with hands-on training).
Pre-Requisites	TSI requirements met.
Co-Requisites	None

Semester Credit Hours

Total Semester Credit Hours	4
Lecture Hours	3
Equated Pay Hours	4
Lab/Other Hours	2
Lab/Other Hours Breakdown: Lab Hours	2
Lab/Other Hours Breakdown: Clinical Hours	Enter Clinical Hours Here.
Lab/Other Hours Breakdown: Practicum Hours	Enter Practicum Hours Here.
Other Hours Breakdown	2

Approval Signatures

Title	Signature	Date
Prepared by:	Gerald Kinder Digitally signed by Gerald Kinder Date: 2020.08.13 11:58:00 -05'00'	
Department Head:	Gerald Kinder Digitally signed by Gerald Kinder Date: 2020.08.13 11:58:14 -05'00'	
Division Chair:	Timothy Guin Digitally signed by Timothy Guin DN: cn=Timothy Guin, o=Division Chair, ou=VOCS, email=guint@wcjc.edu, c=US Date: 2020.08.13 13:15:40 -05'00'	
Dean/VPI:	Paul J. Quinn Digitally signed by Paul J. Quinn Date: 2020.08.14 10:39:28 -05'00'	
Approved by CIR:	Paul J. Quinn Digitally signed by Paul J. Quinn Date: 2020.08.14 10:39:47 -05'00'	

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).

Topical Outline -> Dedicated Instructional Time
- IPRXX004-GCU -> Machining Theory -> 16 Hrs .
- IPRFI018-GCU -> Cut and hydraulic test fluids -> 4 Hrs .
- IENAC001-GCU -> CNC Fundamentals -> 40 Hrs .
- IENAC001-GWE -> CNC workbook file -> 4 Hrs.
- Computer Numerical Controlled (CNC) Machine Controls - Special topics /technical overview -> 16 Hrs.

Lab: This course will feature hands-on lab to enhance the lectures.

Course Learning Outcomes:

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

1. Compare and contrast the differences between conventional and CNC machines
2. Apply the concepts and procedures related to the following topics:
    A. Machining Theory
    B. Cutting and hydraulic test fluids
    C. CNC Fundamentals
3. Demonstrate operations of CNC machine controls.
4. Utilize CNC machine applications for machining operations.

Methods of Assessment:

Periodic written quizzes and exams.
Hands-on laboratory assessments.
Exam / hands-on performance analysis will be performed to identify weaknesses in the program.

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

Industry hand-outs and selected text.

Suggested Course Maximum:

20

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

Associated lab requirements.

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

1.Quizzes, homework, assignments, and class participation – 25%
2.Lab, and cross disciplinary skills (work ethic, safety, teamwork, housekeeping, attitude). – 25%
3.Mid-term exam – 25%
4.Final Exam – 25%

Grading
A – 100-90
B – 89-80
C – 79-70

Curriculum Checklist:

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

☐**Academic 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