



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 – Fundamentals of Computer Numerical Controlled (CNC) Machine Controls

Course Prefix and Number – MCHN 2403

Department – Manufacturing Technology

Division – Vocational Science

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 # 4:3:2

Equated Pay hours for course - 4

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).

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

Prerequisites/Co-requisites - TSI requirements met.

Prepared by Rudolph Henry

Date 10/31/2014

Reviewed by Department Head Rudolph Henry

Date 10/31/2014

Accuracy Verified by Division Chair Tim Guin

Date 10/31/2014

Approved by Dean or Vice President of Instruction

Date 12/03/2014

L.A. Collins, VPI



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):

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.

II. Course Learning Outcomes

Learning Outcomes	Methods of Assessment
<p>Upon successful completion of this course, students will be able to:</p> <ol style="list-style-type: none"> 1. Compare and contrast the differences between conventional and CNC machines 2. Apply the concepts and procedures related to the following topics: <ol style="list-style-type: none"> 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. 	<p>Periodic written quizzes and exams.</p> <p>Hands-on laboratory assessments.</p> <p>Exam / hands-on performance analysis will be performed to identify weaknesses in the program.</p>

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

Industry hand-outs and selected text.

IV. Suggested Course Maximum - 20

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

Associated lab requirements.

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

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

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 Review Forms

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

- **WECM Courses**
If needed, revise the Program SCANS Matrix & Competencies Checklist.