

COURSE SYLLABUS

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| Course Title: | Manufacturing Machinery: CNC II | | Date submitted: | May 2019 (AAC: 19-25) |
| Department: | Advanced Manufacturing Technology | | | |
| Curriculum: | Technology Studies | | | |
| Course Descriptors: Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system. | Course Code: (eg. ACC 101) | MFG*256 | Prerequisites: | |
| | Course Type: | X | | |
| | A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: Internship M: Seminar P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/ Clinical/Lab Z: Combined Lecture/Studio | | | |
| | Elective Type: | G | | |
| | AH: Art History E: English FA: Fine Arts FL: Foreign Language G: General HI: History HU: Humanities LAS: Liberal Arts & Sciences M: Math S: Science SS: Social Science | | | |
| | Credit Hours: | 3 | Corequisites: | |
| | Developmental: (yes/no) | No | | |
| | Lecture: | 3 | | |
| | Clinical: | 0 | | |
| | Lab: | 3 | | |
| | Studio: | 0 | | |
| | Other: | 0 | | |
| TOTAL: | 6 | | | |
| Class Maximum: | 24 | | | |
| Semesters Offered: | Fall, Spring | | | |
| | | Other Requirements: | None | |
| Catalog Course Description: | Manufacturing Machinery: CNC II is the second course in CNC programming. A further study of CNC programming for the Lathe and Vertical Machining Center. Topics include setup and tooling, programming simple parts, canned drilling cycles, circular interpolation, special milling cycles, cutter compensation, looping and macros, and special features. | | | |
| Topical Outline: List course content in outline format. | INSTRUCTIONAL UNITS: 1. Trigonometry 2. Programming a CNC Lathe | | | |

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| | <ol style="list-style-type: none"> 3. Programming a CNC Vertical Machining Center 4. Circular Interpolation 5. Drilling canned cycles 6. Programming with a Fanuc Controlled VMC 7. Cutter diameter compensation 8. Looping 9. Macros <p>LABORATORIES:</p> <ol style="list-style-type: none"> 1. Programming a CNC Lathe 2. Programming a CNC Vertical Machining Center 3. Programming Circular Interpolation 4. Programming Drilling canned cycles 5. Programming Cutter diameter compensation 6. Programming Looping 7. Programming Macros 10. Programming (3) projects |
| <p>Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.</p> | <p>Upon successful completion of this course, the student will be able to do the following:</p> <ol style="list-style-type: none"> 1. Establish Points of Origin 2. Set Tool Length Offsets 3. Safely operate a CNC Lathe and a CNC Vertical Machining Center 4. Program simple parts for a “Conversational” lathe control 5. Program simple parts in “G-Code” for a CNC VMC 6. Program canned drilling cycles 7. Program circular interpolation 8. Program cutter compensation 9. Program looping and macros 10. Program a Fanuc Controlled VMC 11. Use Mastercam Mill 2D to program parts |
| | <p>PROGRAM: <i>Electronics Technology Certificate and A.S. Degree</i></p> <ol style="list-style-type: none"> 1. Demonstrate an understanding of Shop Safety. 2. Demonstrate an understanding the theory of electrical structure, voltage, current, resistance, and electrical circuit and their measurement. 3. Demonstrate an understanding of the basic laws of arithmetic. 4. Demonstrate an understanding of several number systems and codes that are the foundation of digital theory and digital applications. 5. Make comparisons with personal computers; as well as, develop an understanding of its origin and growth since conception. 6. Demonstrate an understanding of the fundamentals of Automated Manufacturing systems. |
| | <p>GENERAL EDUCATION: <i>(Numbering reflects General Education Outcomes as they appear in the college catalog)</i></p> <p>No General Education outcomes.</p> |

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| <p>Evaluation: List how the above outcomes will be assessed.</p> | <p>Assessment will be based on the following criteria:</p> <ol style="list-style-type: none"> 1. Quizzes 2. Lab Projects |
| <p>Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.</p> | <p>Required: Manufacturing lab with CNC machines and accessories.</p> <p>Desired: None</p> |
| <p>Textbook(s)</p> | <p>Programmers manual for CNC machine – determined by brand.</p> |