NEOSHO COUNTY COMMUNITY COLLEGE
MASTER COURSE SYLLABUS

COURSE IDENTIFICATION

Course Code/Number: ETEC 170

Course Title: Computer Applications in Manufacturing II

Division: ☐ Applied Science (AS)   ☐ Liberal Arts (LA)   ☒ Workforce Development (WD)

☐ Health Care (HC)   ☐ Lifetime Learning (LL)   ☐ Nursing   ☐ Developmental

Credit Hour(s):   Three (3)

Effective Date: Fall 2013

Assessment Goal Per Outcome: 70%

COURSE DESCRIPTION

This course deals with the study and application of computer aided design system. The course involves the use of Mastercam and related programs that can be used in manufacturing methods and processes. This course is a continuation of ETEC 125.

MINIMUM REQUIREMENTS/PREREQUISITES AND/OR COREQUISITES

ETEC 125 Computer Applications in Manufacturing

TEXTS

The official list of textbooks and materials for this course is found on *my*Neosho.

http://www.neosho.edu/ProspectiveStudents/Registration/CourseSyllabi.aspx

GENERAL EDUCATION OUTCOMES

1. Practice Responsible Citizenship through:
    * identifying rights and responsibilities of citizenship,

- identifying how human values and perceptions affect and are affected by social diversity,
- identifying and interpreting artistic expression.
2. Live a healthy lifestyle (physical, intellectual, social) through:
   - listing factors associated with a healthy lifestyle and lifetime fitness,
   - identifying the importance of lifetime learning,
   - demonstrating self-discipline, respect for others, and the ability to work collaboratively as a team.
3. Communicate effectively through:
   - developing effective written communication skills,
   - developing effective oral communication and listening skills.
4. Think analytically through:
   - utilizing quantitative information in problem solving,
   - utilizing the principles of systematic inquiry,
   - utilizing various information resources including technology for research and data collection.

COURSE OUTCOMES/COMPETENCIES (as Required)

Upon successful completion of this course, student will be able to:

1. Describe the machining process.
   a. Choose a machine type and machine definition that will be used to cut the part.
   b. Open or import a part file.
   c. Set the machine group properties, including file, tool, stock, and safety zone settings.
   d. Create toolpaths and apply them to geometry.
   e. Verify and edit the toolpaths using the Toolpath Manager, Backplot and Verify functions.
   f. Post process selected machine group operations.

2. Choose a machine and control definition.
   a. Select a machine definition.
   b. Edit machine definition.

3. Work with control files and control definitions.
   a. Create and edit control definitions that represent the machine's control properties.
   b. Define default data paths and file locations for operations based on the control.
   c. Define default post processing settings and communication settings.
   d. Write post text and miscellaneous values to the post processor.
   e. Create and modify toolpath defaults and save them.
   f. Store settings in a control file.

4. Set machine group properties.
   a. Use the toolpath manager.
   b. Use the insert arrow.
   c. Create machine groups and toolpath groups.
   d. Set machine group properties.

5. Create toolpaths.
   a. Select the machine definition.
   b. Choose a toolpath type.
   c. Use the dialog boxes and prompts that display to chain geometry or select points or other entities.
   d. Select the tool and refine the tool parameters
   e. Define and create the toolpath operation for the toolpath type.
   f. Describe different toolpath types.

6. Utilize editing functions.
   a. Use the Toolpath Manager.
   b. Use the Backplot functions.
   c. Use the Verify functions.

7. Demonstrate post processing actions.
   a. Produce the correct NC code for your machine and application.
   b. Use the NCI file to create the final NC program for a specific machine or control.

MINIMUM COURSE CONTENT
   I. The machining process
   II. Selecting machine and control definitions
   III. Working with control files and control definitions
   IV. Machine group properties
   V. Toolpaths
   VI. Editing
   VII. Post-processing
   VIII. Examples

STUDENT REQUIREMENTS AND METHOD OF EVALUATION

<u>INSTRUCTIONAL METHODS</u>

Lecture and discussion will be used in presentation of concepts, information, and assignment requirements.
2. Outside assignments will consist of reading and completion of worksheets.
3. Illustrations will be presented on the chalk board, overhead projector, audio-visuals and computer network. Handouts, mock-ups, models or charts will be used to clarify problems.

<u>STUDENT REQUIREMENTS</u>
1. Concepts will be evaluated through the use of workbook, periodic tests, and computer drawings.
2. Worksheets and drawings will be scored according to format requirements for style and accuracy.

3.	Points will be assigned and accumulated for each worksheet, test, and computer application.

GRADING SCALE
Grades will be determined according to the following scale:

90% to 100% = A; 80% to 89 = B; 70% to 79% = C; 60% to 69% = D; 0% to 59% = F

ASSESSMENT OF STUDENT GAIN

The purpose of assessing student learning at Neosho County Community College is to ensure the educational purposes of the institution are met and appropriate changes are made in program development and classroom instruction to allow for student success.

Pre-assessment ideally begins during the advisement and enrollment process prior to the beginning of the course where the advisor and student determine through the interview process the level of placement for the student. During the period of the first two weeks of a normal semester, each student will be observed and/or interviewed and initial papers produced will be examined to determine needed competency development throughout the course. Post-assessment to determine gain in competency will be measured at the end of each unit of study.

Attendance Policy

1.	NCCC values interactive learning which promotes student engagement in the learning process. To be actively engaged, the student must be present in the learning environment.

2.	Unless students are participating in a school activity or are excused by the instructor, they are expected to attend class. If a student's absences exceed one-eighth of the total course duration, (which equates to one hundred (100) minutes per credit hour in a face-to-face class) the instructor has the right, but is not required, to withdraw a student from the course. Once the student has been dropped for excessive absences, the registrar's office will send a letter to the student, stating that he or she has been dropped. A student may petition the chief academic officer for reinstatement by submitting a letter stating valid reasons for the absences within one week of the registrar's notification. If the student is reinstated into the class, the instructor and the registrar will be notified. Please refer to the Student Handbook/Academic Policies for more information

3.	Absences that occur due to students participating in official college activities are excused except in those cases where outside bodies, such as the State Board of Nursing, have requirements for minimum class minutes for each student. Students who are excused will be given reasonable opportunity to make up any missed work or receive substitute assignments from the instructor and should not be penalized for the absence. Proper procedure should be followed in notifying faculty in advance of the student's planned participation in the event. Ultimately it is the student's responsibility to notify the instructor in advance of the planned absence.

ACADEMIC INTEGRITY

NCCC expects every student to demonstrate ethical behavior with regard to academic pursuits. Academic integrity in coursework is a specific requirement. Definitions, examples, and possible consequences for violations of Academic Integrity, as well as the appeals process, can be found in the College Catalog, Student Handbook, and/or Code of Student Conduct and Discipline.

ELECTRONIC DEVICE POLICY

Student cell phones and other personal electronic devices not being used for class activities must not be accessed during class times unless the instructor chooses to waive this policy.

NOTE

Information and statements in this document are subject to change at the discretion of NCCC. Students will be notified of changes and where to find the most current approved documents.

ACCOMMODATIONS

If you are a student with a disability who may need accommodation(s), in compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990, please notify the Dean of Student Services in the Student Services Office, Sanders Hall, 620-432-0304, on the Chanute Campus, or the Dean for the Ottawa and Online Campuses, 785-248-2798, on the Ottawa Campus as soon as possible. You will need to bring your documentation for review in order to determine reasonable accommodations, and then we can assist you in arranging any necessary accommodations.

NON-DISCRIMINATION POLICY

The following link provides information related to the non-discrimination policy of NCCC, including persons with disabilities. Students are urged to review this policy.

http://www.neosho.edu/Departments/NonDiscrimination.aspx

SEXUAL MISCONDUCT POLICY (TITLE IX)

At NCCC, it is the responsibility of an instructor to help create a safe learning environment in the classroom, including both physical and virtual classrooms. All instructors are considered mandatory reporters at NCCC, therefore any information regarding sexual misconduct that is shared by a student in one-on-one meetings with the instructor must be reported to appropriate personnel at the College. Instructors will keep the information private to the greatest extent possible, but it is not confidential.

Generally, climate surveys, classroom writing assignments or discussions, human subjects research, or events such as Take Back the Night events do not provide notice that must be reported to the Coordinator by employees, unless the reporting party clearly indicates that they wish a report to be made.

The following link provides information related to the sexual misconduct policy of NCCC, including resources, reporting options, and student rights. Students are urged to review this policy.

http://www.neosho.edu/TitleIX.aspx

COURSE NOTES