



North Central State College

**MASTER SYLLABUS**

**2025-2026**

- A. Academic Division: Engineering Technology, Business & Criminal Justice Division
- B. Discipline: Manufacturing
- C. Course Number and Title: MFGT2640 Computer Aided Manufacturing II
- D. Assistant Dean: Brooke Miller, M.B.A.
- E. Credit Hours: 2
  - Lecture: 1 hour
  - Laboratory: 2 hours
- F. Prerequisites: None
- G. Last Course/Curriculum Revision Date: Fall 2025   Origin date: 07/28/2011
- H. Textbook(s) Title:  
Mastercam 2024 - Mill 2D & 3D & Lathe Training Guide Combo
  - 2024
  - CAM INSTRUCTOR
  - ISBN #:978-1-77851-023-6
- I. Workbook(s) and/or Lab Manual:  
*Materials Provided by Instructor*
- J. Course Description: Students will build on fundamental programming skills and knowledge of machine tools to write programs using MASTERCAM X5 for milling and turning machines. CAD/CAM/CNC combines CAD skills to create geometry with CAM software to generate G and M codes for fabrication of parts on CNC machine tools. Students will have the option to test for NIMS certifications in CNC disciplines.
- K. College-Wide Learning Outcomes:

<b>College-Wide Learning Outcome</b>	<b>Assessments -- How it is met &amp; When it is met</b>
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Create/Edit/Import/Export files	Biweekly, entire semester, Projects tailored to competencies presented.
2. Create, Design, Analyze, Edit and manipulate geometry used in programming applications	Biweekly, entire semester, Projects tailored to competencies presented.
3. Create, Design, Analyze, Edit tooling to perform programming operations	Biweekly, entire semester, Projects tailored to competencies presented.
4. Create, Design, Analyze, Edit tooling for various types of stock	Biweekly, entire semester, Projects tailored to competencies presented.
5. Select and chain geometry for toolpath generation	Biweekly, entire semester, Projects tailored to competencies presented.
6. Use CAD/CAM software to generate programs to produce pockets, holes, countours, backplots, and faces.	Biweekly, entire semester, Projects tailored to competencies presented.
7. Create effective programs in CAM for lathe and mill applications.	Biweekly, entire semester, Projects tailored to competencies presented.
8. Post Process CAM generated programs for selected CNC equipment.	Biweekly, entire semester, Projects tailored to competencies presented.
9. Complete NIMS testing for National certification.	Week ten of semester to week sixteen, NIMS evaluation by Advisory Committee

M. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70–72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63–66	D	1.00	Below Average
60–62	D-	0.67	Poor
00–59	F	0.00	Failure

N. College Procedures/Policies:

North Central State College believes that every student is a valued and equal member of the community.\* Every student brings different experiences to the College, and all are important in enriching academic life and developing greater understanding and appreciation of one another. Therefore, NC State College creates an inclusive culture in which students feel comfortable sharing their experiences.

Discrimination and prejudice have no place on the campus, and the College takes any complaint in this regard seriously. Students encountering aspects of the instruction that result in barriers to their sense of being included and respected should contact the instructor, assistant dean, or dean without fear of reprisal.

\* *Inclusive of race, color, religion, gender, gender identity or expression, national origin (ancestry), military status (past, present or future), disability, age (40 years or older), status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, genetic information, or sexual orientation*

**Important information regarding College Procedures and Policies can be found on the syllabus supplement located at**

**<https://ncstatecollege.edu/documents/President/PoliciesProcedures/PolicyManual/Final%20PDFs/14-081b.pdf>**



North Central State College  
SYLLABUS ADDENDUM

Academic Division: Engineering Technology, Business & Criminal Justice Discipline: Manufacturing  
Course Coordinator: Brooke Miller  
Course Number: MFGT2640 Course Title: CAM II (MasterCam)  
Semester / Session: SP 2026 / Session Start / End Date: 01/12/2026 thru 05/08/2026

**Instructor Information**

Name: Chris Harriman Credentials: State Cert and 30+ years in the field  
Phone Number: 419-560-8931 E-Mail Address: charriman@ncstatecollege.edu  
Office Location: 023 Office Hours: Varies

**I. Topical Timeline / Course Calendar (Subject to Change):**

Weeks	Topics	Assignment	Due Date
	<b><i>PREREQUISITES: CAD(Inventor), Print Reading, MFGT1120 Advanced Machining and MFGT1550 CNC Setup and Operations</i></b>		
1	<i>CAM Instructor On-line</i>		
2	<i>CAM Instructor On-line</i>		
3	<i>CAM Instructor On-line</i>		
4	<i>CAM Instructor On-line</i>		
5	<i>CAM Instructor On-line</i>		
6	<i>CAM Instructor On-line</i>		
7	<i>CAM Instructor On-line</i>		
8	<i>CAM Instructor On-line</i>		
9	<i>CAM Instructor On-line</i>		
10	<i>CAM Instructor On-line</i>		
11	<i>CAM Instructor On-line</i>		
12	<i>CAM Instructor On-line</i>		
13	<i>CAM Instructor On-line</i>		
14	<i>CAM Instructor On-line</i>		
15	<i>CAM Instructor On-line</i>		
16	<i>CAM Instructor On-line</i>		

**II. Grading and Testing Guidelines:**

Final Grade Calculation

Activity	Qty	Points	Percentage
Homework			50
Midterm			25
Final Exam			25

**1. Topic description #1**

Course Number: \_\_\_\_\_  
Semester / Session: \_\_\_\_\_

Course Title: \_\_\_\_\_  
Start / End Date: \_\_\_\_\_

The application and design of Jigs and Fixtures

**III. Examination Policy:**

1. The reasons for which a student will be excused from taking an examination \_\_\_\_\_
  - a. Hospitalization (with documented verification)
  - b. Death in the immediate family (with documented verification)
  - c. Personal illness or illness in immediate family - (doctor's excuse required).
2. A student who misses an examination for any reason is responsible for \_\_\_\_\_
  - a. Making up their work within 2 weeks of returning to class

**IV. Class Attendance and Homework Make-Up Policy:**

1. Class attendance is necessary to acquire the knowledge required to \_\_\_\_\_
2. Students are responsible for SAFETY.

**V. Classroom Expectations:**