CAM 1109: Fundamentals of Tooling & Machining
Credit Type – **Proficiency**

Course Description and Learning Outcomes:

https://www.sinclair.edu/course/params/subject/CAM/courseNo/1109/

Faculty Pathway Specialist(s) (Please include name, email and office hours**):**

Keith Bernheisel, keith.bernheisel@sinclair.edu 9am – 3pm M-Th or by appointment.
David Griffith, david.griffith6042@sinclair.edu

Resources Needed to Offer Course (software, equipment, books [include ISBN and edition], etc. – please include any associated costs)**:**

Required Textbook: Precision Machining Technology by Hoffman, Peter J.; Hopewell, Eric S. Edition: 3rd ISBN: 9781337795302 Format: Hardcover Publisher: Cengage Learning Pub. Date: 1/4/2019.
NOTE: An instructor may ask to have other projects, textbooks, or even tests approved by the Faculty Pathway Specialist that would meet the Sinclair CAM department requirements. This approval would need to be in place before ever attempting to offer this course for credit. Failure to get prior approval will result in no course credit being earned."

The machine lab must consist of manual vertical mills, manual lathes, drill presses, pedestal or bench grinders, precision surface grinders, along with all other peripheral tooling and hand tools needed to complete all the required projects and operations.
Note: If you have never offered this course before, contact your Pathway Manager to arrange a visit to the Sinclair machine lab.

What is the ideal format for course delivery – in person, online or blended? To what extent could this course be offered online if necessary?

This course is designed to be taught in a face-to-face format. Labs are required to do the 3 or 4 lab projects required for this class. The lab projects are simple and can be completed in around 30 hours depending on the # of students and your lab. There is normally a short lab that includes reading micrometers and /or dial calipers prior to starting work on the lathe and mill, and they are usually asked to measure gage pin diameters. We have videos of each project we use. Actual surface grinding MUST be covered is a necessary part of the last project. This course only requires a plus or minus .005" tolerance for the grinding portion and is easily achievable by entry level students.

How is the final grade for the course determined? (Please list all required assignments, assessments, etc.)

2 exams, a series of topic quizzes, and successful completion of layout and producing parts on the drill press, lathe, and mill are required.

Who is responsible for grading the required assignments and/or assessments? (faculty or instructor?)

The high school instructor is responsible for scoring/grading all assessments and entering or submitting the grades as required by the Tech Prep office. All tests should be kept to prove that the student has completed the coursework.

What is the grading scale for the course?

Standard Sinclair grading scale used for course.

90-100 = A
89 – 80 = B
79 – 70 = C
69 – 60 = D
59 – 0 = F

Must students access the eLearn shell regularly to complete requirements?
No
Does the course require access to YouTube, GoogleDrive, etc.?
No – The instructor may use the shell and videos to present to the entire class
Additional course details or requirements important for instructors not covered above:
This course, in order to receive proficiency credit, must meet certain requirements for machining and each student must complete all of those machining requirements in order to receive that grade. We use blue prints for the projects we use in our course and while we prefer that those projects be followed. Inspection sheets used for grading our projects can be supplied to the instructor. NOTE: An instructor may ask to have other projects, textbooks, or even tests approved by the Faculty Pathway Specialist that would meet the Sinclair CAM department requirements. This approval would need to be in place before ever attempting to offer this course for credit. Failure to get prior approval will result in no course credit being earned. Please contact us before starting this course.
Most common (or popular) degrees this course is in?
Computer Aided Manufacturing Precision Machining AAS Computer Aided Manufacturing CNC Technology AAS This course is used in a majority of the short and one-year certificates offered by the CAM department.