SINCLAIR COMMUNITY COLLEGE

Syllabus for course in

CAM 1109 - Fundamentals of Tooling & Machining

COURSE# CAM 1109 3 semester hours

DAY/TIME: _____

ROOM: _____

INSTRUCTOR: Kevin McNeeley Email: kevin.mcneeley@sinclair.edu

PHONE: (937) 512-2957

COURSE DESCRIPTION:

An introduction to the manufacturing processes used in the tooling and machining industry. Safety, mechanical hardware, handtools, metrology, engine lathe, milling, and grinding will be the major focus of this course.

OBJECTIVES OF THE COURSE

1. The students will apply safety procedures used in the machine shop.

2. The students will be able to recognize mechanical hardware used in the machine shop.

3. The students will be able to identify and demonstrate hand tools used in the machine shop.

4. The students will use and apply measuring instruments used in the machine shop.

5. The students will demonstrate the use of the engine lathe by producing a product on the lathe.

6. The students will demonstrate the use of the milling machine by producing a product on the mill

7. The students will demonstrate and use a surface grinder.

TEXT: Precision Machining Technology
Hoffman, Delmar, Cengage Learning 2012
ISBN-10: 1-4354-4767-0
ISBN-13: 978-1-4354-4767-7

SUGGESTED EQUIPMENT:

Safety Glasses
6” steel rule (English)

STUDENT EVALUATION:

Attendance and class participation (see policy #4)	
Lab Projects	40%
Homework/Quizzes	20%
Midterm	20%
Final	20%

GRADING:

90% - 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
59% and below	F

POLICIES:

1. The instructor reserves the right to make changes in the schedule and assignments as necessary.

2. Students are expected to attend each and every class. Attendance will be taken at the beginning of each class period. **Two unexcused absences may result in automatic failure in the course.**

3. Quizzes may be given at the beginning of each class period every week. **No make-up quizzes will be allowed**.

4. I reserve the right to raise or lower your final numerical average by up to three points (3) based on my evaluation of your performance including but not limited to: lateness, attendance, answers to questions, classroom conduct, shop conduct, clean up procedures and general class participation.

5. Plagiarism and cheating are not acceptable. This behavior may fail you from the course (see student handbook).

6. Turn all cellular phones off. Phones are not permitted in the class or laboratory.

Course Outline Draft Copy

WEEK 1	Shop Safety Systems of Measurement Steel Rules Dial Calipers Shop Tour
WEEK 2	Introduction to Milling Machines Vertical Milling Machine Cutting Tools Decimal Equivalent Chart
WEEK 3	Vertical Milling Machine Cutting Tools
WEEK 4	Introduction to Drill Press Tap and Drill Chart Semi-precision and Precision Layout
WEEK 5	The Drill Press Drilling Tools C'sink and C'bore Reaming
WEEK 6	Using Cutoff Machines Vertical Band Saw Using Micrometers
WEEK 7	Mechanical Hardware Work on Lab Project
WEEK 8	Turning Machines Tool Holders Cutting Tools Midterm Review
WEEK 9	Midterm Exam Work in Lab
WEEK 10	Lathe Spindle Tooling Machine Controls Facing and Center Drilling Turning Between Centers

WEEK 11	Lathe Centers Other Lathe Operations 60 Deg. Thread Information External Threads Internal Threads Cutting Tapers
WEEK 12	Machinability and Chip Formation Speeds and Feeds for Machine Tools Cutting Fluids Using Carbides
WEEK 13	Grinding Wheels Truing and Dressing the Wheel Grinding Fluids Horizontal Surface Grinders Work Holding Using the Surface Grinder
WEEK 14	Grinding Machine Review Work in Lab
WEEK 15	Review for Final Exam Finish Lab Project
WEEK 16	Final Exam