

# CALIFORNIA STATE UNIVERSITY, CHICO

Department of Mechanical and Mechatronic Engineering and Sustainable Manufacturing  
Course Syllabus – Fall 2019

## SMFG 360 – COMPUTER-AIDED MANUFACTURING [4 units]

**PREREQUISITES:** SMFG 260 and SMFG 201

### COURSE TIME SCHEDULE:

Lecture . . . . .	Tuesday	8:00am to 10:50am	OCNL 438
Lab . . . . .	Thursday	8:00am to 10:50am	PLMS 121

**INSTRUCTOR:** Scott Brogden sbrogden@csuchico.edu

**OFFICE:** Plumas 114B  
Office Phone: 530-898-5097  
Department Phone: 530-898-5346  
Cell Phone: 530-680-2521

**OFFICE HOURS:** M 1-2pm, T 11am-noon, W 1-2pm, Th 12-1pm and by appointment.

**TEXTBOOK:** Computer Numerical Control – Machining and Turning Centers, by Robert Quesada,  
ISBN 0-13-048867-4

**COURSE OBJECTIVES:** To become familiar with computer-based manufacturing systems for programming and operating CNC machine tools. Programming methods include manual G-Code, 2½ axis CAM software packages, 3D complex surface machining, and conversational (shopfloor) graphical programming methods.

**CATALOG DESCRIPTION:** A study of the concepts involved in programming computer numerically controlled (CNC) machine tools, with emphasis placed on power management to optimize tool path, material removal rate, chip load, and horse power. This course includes integration of computer-aided manufacturing (CAD/CAM). 3.0 hours discussion, 3.0 hours laboratory.

### COSTS DURING TERM OF COURSE:

Safety Glasses: *[required – MUST be worn at all times in the labs]*  
Digital Electronic or Dial Caliper: *[required]*

### EVALUATION PROCEDURE:

Laboratory exercises and homework	35%
Technical paper and/or presentation	10%
Midterm exam	25%
Final exam	25%
Quizzes	5%
	-----
	100%

**LATE ASSIGNMENTS:** Late assignments will not be accepted. If any quizzes are missed, they may not be taken later without a doctor's excuse.

**ATTENDANCE:** Because true learning occurs only when the learner is an active participant in the learning process, your active participation in this class is essential and expected. You will be required to stay for the entire duration of each lecture and lab session unless dismissed by the instructor. Missing any lecture or lab session will be detrimental to your success and ultimately your grade in this course. Every class meeting will provide opportunities for both lecture and demonstration material to be received. Do not expect the instructor to provide special make-up demonstrations of missed material.

**CLEANUP:** Laboratory cleanup is very important in this course. Consequently, failure to properly clean up will reduce your final grade by a third of a letter grade per occurrence (example B- to C+). Each student will have an assigned cleanup area for which he/she is responsible. Cleanup will take place during the last 15 minutes of each lab session, so in order to participate in cleanup, you must be present at the end of each lab session.

**SAFETY:** Everyone in Plumas 114, 116 and 121 must wear eye protection and closed-toed shoes at all times except in the areas of Plumas 114 between the entrance door and yellow/black limit lines on the floor. Anyone failing to comply with all lab safety rules will be told to leave the lab immediately and not be allowed to return to the lab that day. Repeated offenses will result in failing the course. No student may work in these labs without first passing the safety quiz and signing an Acknowledgement of Lab Safety Policies and Procedures for the current academic year. Use of cell phones will not be permitted during the lab sessions except in the PLMS 116 classroom.

**LAB MONITORS AND TEACHING ASSISTANTS:** There will be students in the labs at various times who are Lab Monitors and/or Teaching Assistants. Part of their duties are to make sure that all students are wearing safety glasses, closed-toed shoes and any other Personal Protective Equipment (PPE) that is required for specific lab activities. They have the authority to tell students who are not following safety procedures to leave the lab immediately. They also have the authority to enforce proper cleanup procedures by all students.

**COMMUNICATION:** Please see me if you feel you are falling behind, or want to discuss anything associated with this course. Good communication is essential to the success of this course and those associated with it! Please feel free to stop by during my office hours, call me on my office phone, call me on my cell phone, or email me with any issues. (If you prefer email, my CSUC email is the best way to contact me. If you use the Blackboard email, it may take little longer for me to respond.) The earlier I am aware of any problems you may be having, the earlier a solution can be developed and the more likely you are to succeed in this course.

#### **ACADEMIC INTEGRITY:**

Students are expected to be familiar with the University's Academic Integrity Policy. Your own commitment to learning, as evidenced by your enrollment at California State University, Chico, and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Student Judicial Affairs. The policy on academic integrity and other resources related to student conduct can be found at: <http://www.csuchico.edu/sjd/integrity.shtml>.

#### **CAMPUS POLICY IN COMPLIANCE WITH THE AMERICAN DISABILITIES ACT:**

If you need course adaptations or accommodations because of a disability or chronic illness, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Please also contact the Accessibility Resource Center (ARC) as they are the designated department responsible for approving and coordinating reasonable accommodations and services for students with disabilities. ARC will help you understand your rights and responsibilities under the Americans with Disabilities Act and provide you further assistance with requesting and arranging accommodations. The ARC website is <http://www.csuchico.edu/arc/>.

#### **STUDENT SERVICES:**

Student services are designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. Students can find support for services such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. Student services information can be found at: <http://www.csuchico.edu/current-students>.