PIKES PEAK STATE COLLEGE
Machining Technology

Master Course Syllabus
MAC 2041: CAD CAM 2D Lab

Purpose of Document
This document contains important information about this course's objectives. It may be helpful for you to retain a copy for your records, along with the class specific syllabus. This document will be especially helpful if you decide to later change your course of study.

Pikes Peak State College and the Colorado Department of Higher Education have determined that graduates should have a broad range of learning skills as well as discipline related skills. Both types of skills are detailed below.

Course Description
Requires students to produce a variety of lab exercises on robotic machinery in conjunction with MAG 240. Aspects of toolpaths for contour, drill and pocket will be covered. Chaining geometry, setting parameters, and managing cutter compensations will be addressed in both multi-tool programs and remachining operations. Coursework will primarily focus on 2D geometry projects.
Credit Hours: 3
Contact Hours: 67.5 (Lecture/Lab Combination)

Required Course Learning Outcomes
I. Create 2D geometry
II. Produce 2D toolpaths suing all 2D toolpath options
III. Post process toolpaths to produce 2D G-code programs
IV. Edit 2D G-code programs
V. Perform set-ups on CNC milling machine
VI. Produce 2D parts using Mastercam generated programs

Required Topical Outline
I. File management
   A. Saving files
   B. Retrieving files
   C. Converters
   D. Hard copies
II. Toolpaths 2D
   A. Contour
   B. Drill
   C. Pocket
   D. Face

III. Job set-up
   A. Features and functions of the job set-up screen
IV. Toolpath Parameters
   A. Tool parameters
   B. Contouring Parameters
   C. Drilling parameters
   D. Pocketing parameters
   E. Facing parameters
V. Operations manager
   A. Function of the operations manager screen
   B. Backplotting
   C. Verifying
VI. Post Processing 2D Toolpaths
   A. Purpose of Post Processing
   B. Executing 2D Post Processing
   C. Editing 2D Programs
VII. CNC Milling Machine Set-Ups
   A. Loading a program
   B. Setting of offsets
   C. Locating program zero
   D. Work holding techniques
VIII. CNC milling machine operations
   A. Controller management
   B. Machine management