PIKES PEAK STATE COLLEGE
Machining Technology

Master Course Syllabus
MAC 1010: Introduction to Engine Lathe

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
Introduces basic lathe applications which will consist of identifying lathe components and controls, understanding turning safety, calculating speeds and feeds, using various tools and tool holders, identifying basic tool geometry, and the use of common lathe spindle tooling. Students will perform basic lathe operations, which will consist of facing, center-drilling, chuck turning, turning between centers, boring, grooving, tapers, knurling, and single point threading. Students will be required to produce specified parts to a tolerance of +/- .004 in. and perform competencies set by manufacturing standards.
Credit Hours: 3
Contact Hours: 67.5 (Lecture/Lab Combination)

Required Course Learning Outcomes
I. Demonstrate engine lathe safety
II. Identify tool holders and tool holding for turning applications
III. Identify all cutting tools for the lathe
IV. Use various types of lathe spindle tooling
V. Perform facing and center drilling operations
VI. Perform turning between centers operations
VII. Perform special lathe operations, which will consist of: drilling, boring, reaming, knurling, recessing, parting, and tapping
VIII. Calculate and machine 60-degree thread forms and various other threading operations
IX. Calculate and cut various types of tapers

Required Topical Outline
I. The Engine Lathe
II. Tool-holders and Tool-holding for the Lathe
III. Cutting Tools for the Lathe

IV. Lathe Spindle Tooling
V. Operating the Machine Controls
VI. Facing and Center Drilling
VII. Turning Between Centers
VIII. Special Lathe Operations
IX. Calculating and Cutting Unified Threads
X. Types of Tapers
XI. Advanced Lathe Operations with OD and ID Turning