Print Date: 3/19/18

Course Objectives/Course Outline
Spokane Community College

Course Title: **CNC Programming Lathe**
Prefix and Course Number: **APM 203**

Course Learning Outcomes:
By the end of this course, a student should:

- Program G & M code for the mill and lathe
- Edit Program elements
- Edit entire Lathe Programs
- Utilize Safety Startup lines and Command lines
- Write simple commands
- Recognize and manage line codes
- Reading code while the lathe is running

Course Outline:

Week 1: Intro to CNC and Safety Introduction to CNC Lathe Programming Coordinates and Reference Points Overview of Program Fundamentals Part Program Structure Contour Point Calculations	**Week 7: Lathe Cycles – Part I** Cornering Breaks Using G01 Boring - G85, G86 O.D/I.D. Turning Cycle - G90 End Face Turning Cycle - G94
Week 2: The Four Basic G-Codes Speeds and Feeds Rapid Positioning – G00 Linear Interpolation – G01 Circular Interpolation – G02/G03	**Week 8: Lathe Cycles – Part II** Finish Cycle - G70 Roughing Cycle - G71 End Facing - G72 Irregular Path Stock Removal - G73
Week 3: Parts of the CNC Program Simulator Introduction Programming the Start, Safety Line, and End Tooling and Tool Offsets Programming the Spindle	**Week 9: Grooving and Threading** Grooving – G74, G75 Threading – G76, G92
Week 4: General Canned Cycles Canned Cycle Fundamentals Canned Cycle Codes Drilling Holes	**Week 10: Part-Off and Program Documentation** Part-Off Program Documentation
Week 5: Cutter Compensation Tool Radius Fundamentals Cutter Compensation Commands Midterm Exam Review	**Week 11: Programming, Programming, Programming** More Programming Review for Final Exam
Week 6: Midterm Exam Midterm Exam	**Week 12: Final Exam** Final Exam