EICC COURSE DEVELOPMENT MODEL (CDM)

CATALOG COURSE NUMBER: MFG-201
COURSE TITLE: CNC Turning Operator
Originating College: ☐CCC   ☐MCC   ☑SCC   Effective Term/Year: Fall 2014
Initiating Faculty Member: Kenneth Darmody   Initiating Department Coordinator: Ben Kettering

Reason for submission: Check all that apply
☐New Course   If yes, type of course:
   ☐**A&S**
     To be considered for General Education? ☐ Yes ☐ No Category:
     To be part of an A & S Concentration? ☐ Yes ☐ No Concentration:
   ☐**CTE** Program Title: ☐Required ☑Elective
☐General Education or Program Review   ☐Reactivation of an inactive course   ☐Making course inactive
☑Changing course; please explain: Updating objectives to current standards; changing name of course from Turning Operator to Lathe Operator
☐Other; please explain:

Contact Hours/Distribution of Contact Hours

Lecture Hours	**Lab Hours**	**Clinical Hours**	**Coop Hours**
Hours per Week: 1.00	Hours per Week: 2.00	Hours per Week: 0	Hours per Week: 0
Number of Weeks: 16.50	Number of Weeks: 16.50	Number of Weeks: 16.50	Number of Weeks: 16.50

***Note: If offering a course for the full fall or spring semester, the number of weeks is 16.5*

Total Lecture Hrs: 19.80	Total Lab Hrs: 39.60	Total Clinical Hrs: 0	Total Coop Hrs: 0

Semester Hours Credit: 2.00   if variable credit, give range:
Allow repeat* for credit: ☐Yes ☑No
If yes, total course repeats allowed: If yes, total credits:
*Note that repeat for credit means a student can pass the course and then repeat it for additional credit. An internship course is an example of a course that could be set up as repeatable for additional credit

Course or courses this CDM replaces, if any:

CATALOG COURSE DESCRIPTION: This course will introduce students to Computer Numeric Control (CNC) turning centers in the manufacturing setting. Topics addressed include loading/storing/activating part programs, tool offsets/tool data entry, machine start up, program restarting process, planning for new jobs, work holding devices, installing new tools and entering tool life data, establishing program zero and entering tool offset data and establishing the safe index point. Various projects will strengthen the student's proper use and troubleshooting of this equipment in the manufacturing setting.

RECOMMENDED ENTRY LEVEL SKILLS/KNOWLEDGE:

PRE-REQUISITE COURSES

CCN#	COURSE TITLE
MFG 151	CNC Fundamentals

CO-REQUISITE COURSES

CCN#	COURSE TITLE

In general it is expected that source material will be dated within 5 years of this CDM date. If all materials/ textbooks cited above are older than this, please explain:

GENERAL COURSE GOALS
Upon successful completion of this course the student should be able to:

Maintain, set up and operate CNC lathes.

TOPICAL OUTLINE

1. Machine Introduction- Haas SL series lathe.
2. Machining Area
3. CNC Pendant Introduction
4. Chip Removal & Coolant Systems
5. Air & Lube Systems
6. Navigating the Display and Mode Screens
7. Machine Operations
8. Machine Matenance
9. Machine Introduction-Haas TL Series Machine
10. Machining Area
11. Coolant & Air Systems
12. Machine Operations

COURSE OBJECTIVES
Upon successful completion of the course, a student should be able to:
1. Machine Introduction-HAAS SL Series Lathe.
   a. Identify the major components of the SL series lathe.
   b. Describe the basic functions of the HAAS SL series major components.
2. Machining Area.
   a. Describe how the operator access door functions.
   b. Describe the function of the axis assembly.
   c. Describe the elements of the spindle assembly.
   d. Describe the elements of the chuck.
   e. Identify the purpose of the optional tool probe.
   f. Describe the elements of the tool turret.
   g. Describe the elements of the optional tailstock.
   h. Describe the elements of the hydraulic system.
3. CNC Pendant Introduction.
   a. Explain the purpose of the HAAS SL series machine CNC Pendant.
   b. Identify the major functions of the HAAS CNC Pendant.
   c. Describe the functions of all the keys and buttons on the HAAS SL Series CNC Pendant Panel.
4. Chip Removal and Coolant Systems.
   a. Identify the major components of the chip removal system.
   b. Describe the function of the chip removal system.
   c. Identify the major components of the coolant system.
   d. Describe the function of the coolant system.
5. Air and Lube systems.
   a. Identify the major components of the air system.
   b. Describe the function of the air system.
   c. Identify the major components of the lubrication system.
   d. Describe the function of the lubrication system.
6. Navigating the Display and Mode screens.
   a. Identify common information on the display screen.
   b. Navigate to the focus areas during machine operation.
   c. Identify the functional information graphics areas.

d. Navigate to the screens for each CNC mode.
e. Identify the information presented on the mode screens.
7. Machine operations.
   a. Power up the machine.
   b. Select tools and load them into the machine.
   c. Load a program into memory.
   d. View and select programs in memory to run.
   e. Run a program in graphics mode.
   f. Run a program with single block.
   g. Run the machine automatically.
   h. Stop automatic operations.
   i. Recover from a fault condition.
   j. Operate the jog handle.
   k. Operate in handle control overrides.
8. Machine Maintenance.
   a. Identify daily, weekly and monthly maintenance requirements.
   b. Identify semi-annual and annual maintenance requirements.
9. Machine Introduction HAAS TL series lathe.
   a. Identify the major components of the TL series lathe.
   b. Describe the basic functions of the HAAS TL series major components.
10. Machining Area.
   a. Identify the major components of a TL series lathe.
   b. Describe the basic functions of the major components.
11. Coolant and Air systems.
   a. Identify the major components of the optional coolant system.
   b. Describe the function of the coolant system.
   c. Identify the major components of the optional air system.
   d. Describe the function of the air system.
12. Machine Operations.
   a. Power up the machine.
   b. Select tools and load them into the machine.
   c. Load a program into memory.
   d. View and select programs in memory to run.
   e. Run a program in graphics mode.
   f. Run a program with single block.
   g. Run the machine automatically.

RECOMMENDED METHODS OF INSTRUCTION: *Check all appropriate methods of instruction to facilitate student learning of course objectives.*

☐ Case Studies	☐ Class Discussions
☑ Computer lab work	☐ Computer-assisted tools
☐ Computer-assisted writing	☐ Conducting experiments
☑ Demonstration or modeling	☐ Electronic interaction
☐ Field observation	☐ Field trips
☐ Guest speaker	☑ Guided practice
☐ In-class writing or editing workshops	☐ Journals
☑ Lecture	☐ Library instruction and resources
☑ Model building	☐ Peer review
☐ Readings	☐ Role play
☐ Service learning	☐ Simulation
☑ Student and instructor conferences	☐ Student collaborative learning
☐ Student presentation	☑ Student projects
☐ Tests or quizzes	☐ Worksheets/surveys
☐ Writing assignments/exercises (graded or not)	

❏Other (please list specifics):

RECOMMENDED EVALUATION METHODS: *Check all appropriate methods of evaluation to assess student achievement of course objectives.*

❏Class workshops | ❏Classroom discussions/participation
❏Collaborative work | ☑Demonstration of skill(s)
☑Individual conferences | ❏Journals
☑Laboratory reports | ❏Oral presentations
❏Portfolios | ❏Pretest/Posttest
❏Quizzes | ❏Reading responses
☑Student presentations | ☑Student projects
❏Tests | ❏Writing Assignments
❏Other (please list specifics):

ATTENDANCE: Policies on attendance will be formulated by the instructor and communicated to the students on the course syllabus.

ACADEMIC DISHONESTY: Policies on academic dishonesty can be found in the EICC student code of conduct published in the student handbook.

CDM CREATION/REVIEW/REVISION INFORMATION	
Originally Written by:	Date:
Department Chair, Comments, & Date:	
Does similar curriculum exist at other EICC Colleges? ❏CCC ❏MCC ❏SCC ❏No	
If yes, Counterparts Consulted, College, Comments & Date:	

CDM Review or Revision Date:	
Faculty member(s) & College:	
Does similar curriculum exist at other EICC Colleges? ❏CCC ❏MCC ❏SCC ❏No	
Changes made to course which will require further review steps:	
❏ Making course inactive ❏ Credit hours ❏ Contact hours ❏ Course Description	
❏ 25% or more of course objectives ❏ Other minor revisions or no revisions	
Dean Review, Comments & Date:	

If changes made require further review and approval:	
College Curriculum Committee Sign-off & Date:	
IC Review Subcommittee Sign-off & Date:	
Instructional Council Approval:	