Cerro Coso College

Course Outline of Record Report

12/06/2021

MCTLC107 : Tool and Equipment Operation

General Information

Author:	• David Villicana • Lee, Travis • Dorrell, Mike
Course Code (CB01) :	MCTLC107
Course Title (CB02) :	Tool and Equipment Operation
Department:	Industrial Arts
Proposal Start:	Spring 2022
TOP Code (CB03) :	(0956.30) Machining and Machine Tools
SAM Code (CB09) :	Clearly Occupational
Distance Education Approved:	Yes
Course Control Number (CB00) :	CCC000504280
Curriculum Committee Approval Date:	04/09/2021
Board of Trustees Approval Date:	06/10/2021
External Review Approval Date:	06/10/2021
Course Description:	This course prepares students to identify and properly use a variety of tools and equipment in an industrial environment. Emphasis is placed on safety and the use of the correct tool for a specific task. Students are given hands-on experience with many of the tools and equipment during practical lab exercises and demonstrations.
Submission Type:	Mandatory Revision This course is being revised for cyclic review. This course was last assessed in Fall 2020. All outcomes were successfully met.
Author:	No value

Faculty Minimum Qualifications

Master Discipline Preferred:	No value
Alternate Master Discipline Preferred:	No value
Bachelors or Associates Discipline Preferred:	• Industrial Technology (Foundry occupations) • Machine Tool Technology (Tool and die making) • Welding
Additional Bachelors or Associates Discipline Preferred:	• Welding

Course Development Options

Basic Skills Status (CB08)	Course Special Class Status (CB13)	Grade Options

Course is not a basic skills course.

Course is not a special class.

- Letter Grade Methods
- Pass/No Pass

☐ Allow Students to Gain Credit by Exam/Challenge

Allowed Number of Retakes

0

Course Prior To College Level (CB21)

Not applicable.

Rationale For Credit By Exam/Challenge

No value

Retake Policy Description

Type:|Non-Repeatable Credit

☑ Allow Students To Audit Course

Course Support Course Status (CB26)

Course is not a support course

Associated Programs

☑ Course is part of a program (CB24)

Associated Program	Award Type	Active
CC Welding Technology	A.S. Degree Major	Summer 2018
Industrial Process Technician	Certificate of Completion	Fall 2021

Transferability & Gen. Ed. Options

Course General Education Status (CB25)

Y

Transferability

Transferable to CSU only

Transferability Status

Approved

Units and Hours

Summary

Minimum Credit Units (CB07)	2
Maximum Credit Units (CB06)	2
Total Course In-Class (Contact) Hours	72
Total Course Out-of-Class Hours	36
Total Student Learning Hours	108

Faculty Load 0

Credit / Non-Credit Options

Course Credit Status (CB04)

Credit - Degree Applicable

Course Non Credit Category (CB22)

Credit Course.

Non-Credit Characteristic

No Value

Course Classification Status (CB11)

Credit Course.

Funding Agency Category (CB23)

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

☐ Variable Credit Course

Weekly Student Hours

	In Class	Out of Classs
Lecture Hours	1	2
Laboratory Hours	3	0
Activity Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	54
Course In-Class (Contact) Hours	
Lecture	18
Laboratory	54
Activity	0
Total	72
Course Out-of-Class Hours	
Lecture	36
Laboratory	0
Activity	0
Total	36

Time Commitment Notes for Students

No value

Faculty Load

Extra Duties: 0

Faculty Load: 0

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

No Value

Entrance Skills

Entrance Skills	Description
No value	No value

Limitations on Enrollment

Limitations on Enrollment	Description
No value	No value

Specifications

Methods of Instruction

Methods of Instruction	Audiovisual
Rationale	Videos of certain tools and industrial equipment are shown in this course.
Methods of Instruction	Laboratory
Rationale	Students will be given lab exercises to complete in this course such as identifying tools and their proper use, laying out and drilling holes, using table saws, etc.
Methods of Instruction	Lecture
Rationale	Students will be required to listen to lectures on course materials.

Assignments

Lab exercise example: Students will be required to demonstrate the proper use of a combination square. Research paper example: Topic may cover origins or specialized uses of specific tools or tool sets.

Methods of Evaluation	Rationale
Homework	Instructor assigned homework and readings to supplement and augment class lectures and demonstrations. Example: How to read a standard tape measure graduated in feet, inches, and

	fractions of an inch.
Participation	Practical assignments. Example: Use a miter saw to cut a board on a 45-degree angle
Tests	Exams on readings and handouts. Example: True or False: A vernier caliper can be used to take inside, outside, and depth measurements.
Final Exam	Students will be given a final exam on the materials they have been taught throughout the semester.
Research Paper	Students will be expected to write a research paper on a particular tool of their choice.

Equipment

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
No Value	No Value	No Value	No Value	No Value

Other Instructional Materials

Description	Other: Instructor prepared handouts.
Author	
Citation	Tool and Equipment Operation

Materials Fee

No

Learning Outcomes and Objectives

Course Objectives

No value

CSLOs

Practice clean and safe working habits that are consistent with trade practices to Occupational Safety and Health Administration (OSHA) standards. Expected SLO Performance: 70.0

Identify tools and their appropriate use. Expected SLO Performance: 70.0

Demonstrate proper handling and care of tools and instruments. Expected SLO Performance: 70.0

Perform a variety of tasks using tools found in an industrial setting. Expected SLO Performance: 70.0

Outline

Course Outline

A. Safety
1. Identifying workplace hazards
2. Electrical safety
3. Mechanical safety
4. Face; Eye; and Ear Protection
5. Respiratory Protection
6. Ventilation
7. Special Protective Clothing

B. Types of Tools
1. Non-powered hand tools
2. Power tools
    a. Electrically powered tools AC and DC
    b. Gas powered tools
    c. Pneumatic tools
    d. Powder actuated tools

C. General Purpose/Mechanical Tools
1. Screwdrivers
    a. Straight
    b. Phillips
    c. Robertson
    d. Torx
    e. Special
3. Hammers
    a. Claw
    b. Ball peen
    c. Sledge
    d. Slide
    e. Impact driver
4. Holding and clamping tools
    a. Pliers
    b. Clamps
    c. Vises
5. Wrenches
    a. Open end; box; and combination
    b. Adjustable
    c. Socket
    d. Pipe
    e. Special
6. Drills and drill presses
    a. Types
    b. Setup
    c. Choice of drills/accessories
7. Files; rasps; chisels; and punches
    a. Types

D. Woodworking Tools
1. Saws
    a. Hand
    b. Circular
    c. Miter
    d. Reciprocating
    e. Chain
2. Boring and drilling
    a. Hand held electric drills
    b. Drill presses

c. Bits - spiral; spade; Forstner; mandrel
3. Sanders
a. Vibration
b. Circular
c. Random orbit
d. Belt
4. Nail guns
a. Framing/roofing
b. Finish
5. Drill/drivers
a. Corded; cordless
b. Type
6. Routers
a. Straight
b. Plunge
7. Planes and planers

E. Metalworking Tools
1. Saws
a. Hack saws
b. Cut-off saws
2. Drilling
a. Electric hand drills
b. Drill presses
3. Holding; clamping; bending
4. Grinders
a. Angle grinders
b. Bench grinders

F. Measuring and Leveling Tools
1. Tape measures and rules
2. Squares
3. Spirit levels
4. Calipers
a. Vernier
b. Dial
c. Digital
8. Micrometers
a. Standard
b. Digital
9. Electronic instruments
a. Laser leveling and distance tools
b. Stud finders and detection tools

Lab Outline

Students will perform exercises and complete practical assignments using the following tools and equipment
A. General Purpose/Mechanical Tools
1. Screwdrivers
a. Straight
b. Phillips
c. Robertson
d. Torx
e. Special
3. Hammers
a. Claw
b. Ball peen
c. Sledge
d. Slide
e. Impact driver
4. Holding and clamping tools
a. Pliers
b. Clamps

c. Vises
5. Wrenches
a. Open end; box; and combination
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B. Woodworking Tools
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C. Metalworking Tools
1. Saws
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D. Measuring and Leveling Tools
1. Tape measures and rules
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4. Calipers
a. Vernier
b. Dial
c. Digital
8. Micrometers
a. Standard
b. Digital

Delivery Methods

Delivery Method: Please list all that apply -Face to face -Online (purely online no face-to-face contact) -Online with some required face-to-face meetings (“Hybrid”) -Online course with on ground testing -iTV – Interactive video = Face to face course with significant required activities in a distance modality -Other

- Face to face

Rigor Statement: Assignments and evaluations should be of the same rigor as those used in the on-ground course. If they are not the same as those noted in the COR on the Methods of Evaluation and out-of-class assignments pages, indicate what the differences are and why they are being used. For instance, if labs, field trips, or site visits are required in the face to face section of this course, how will these requirements be met with the same rigor in the Distance Education section? Describe the ways in which instructor-student contact and student-student contact will be facilitated in the distance ed environments.

No Value

Good practice requires both asynchronous and synchronous contact for effective contact. List the methods expected of all instructors teaching the course. -Learning Management System -Discussion Forums -Message -Other Contact -Chat/Instant Messaging -E-mail -Face-to-face meeting(s) -Newsgroup/Discussion Board -Proctored Exam -Telephone -iTV - Interactive Video -Other

No Value

Software and Equipment: What additional software or hardware, if any, is required for this course purely because of its delivery mode? How is technical support to be provided?

No Value

Accessibility: Section 508 of the Rehabilitation Act requires access to the Federal government's electronic and information technology. The law covers all types of electronic and information technology in the Federal sector and is not limited to assistive technologies used by people with disabilities. It applies to all Federal agencies when they develop, procure, maintain, or use such technology. Federal agencies must ensure that this technology is accessible to employees and the public to the extent it does not pose an "undue burden". I am using -iTV—Interactive Video only -Learning management system -Publisher course with learning management system interface.

No Value

Class Size: Good practice is that section size should be no greater in distance ed modes than in regular face-to-face versions of the course. Will the recommended section size be lower than in on-ground sections? If so, explain why.

No Value

Emergency Distance Education Options The course will operate in remote delivery mode when all or part of the college service area is under an officially declared city, county, state, or federal state of emergency, including (check all that apply) - Online including all labs/activity hours - Hybrid with online lecture and onsite lab/activity hours - Correspondence education in high school and prison facilities - None. This course will be cancelled or paused if it cannot be held fully onsite.

- Hybrid with online lecture and onsite lab/activity hours