Cerro Coso College

Course Outline of Record Report

12/06/2021

DRFTC108 : Reading Technical Drawings

General Information

Author:	• David Villicana • Lee, Travis • Dorrell, Mike
Course Code (CB01) :	DRFTC108
Course Title (CB02) :	Reading Technical Drawings
Department:	Industrial Arts
Proposal Start:	Spring 2022
TOP Code (CB03) :	(0953.00) Drafting Technology
SAM Code (CB09) :	Clearly Occupational
Distance Education Approved:	Yes
Course Control Number (CB00) :	CCC000507909
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 provides students with the opportunity to develop skills in reading and interpreting technical drawings used in an industrial environment. Principles of technical drawing are introduced along with standard symbols and abbreviations found in industrial drawings, schematics, and diagrams. Students produce technical sketches without the use of instruments.
Submission Type:	Mandatory Revision This course is being revised for cyclic renewal. This course was last assessed in Fall 2020. All assessments were successfully met.
Author:	No value

Faculty Minimum Qualifications

Master Discipline Preferred:	• Drafting CADD (Computer Aided (Computer Aided Design), CAD (Computer Aided Drafting)
Alternate Master Discipline Preferred:	• Industrial Technology (Foundry occupations) • Welding
Bachelors or Associates Discipline Preferred:	• Welding
Additional Bachelors or Associates Discipline Preferred:	• Welding

Course Development Options

Basic Skills Status (CB08)

Course is not a basic skills course.

Course Special Class Status (CB13)

Course is not a special class.

Grade Options

- 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)	3
Maximum Credit Units (CB06)	3
Total Course In-Class (Contact) Hours	54
Total Course Out-of-Class Hours	108
Total Student Learning Hours	162

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	3	6
Laboratory Hours	0	0
Activity Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	54
Course In-Class (Contact) Hours	
Lecture	54
Laboratory	0
Activity	0
Total	54
Course Out-of-Class Hours	
Lecture	108
Laboratory	0
Activity	0
Total	108

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	Discussion
Rationale	Students will be expected to participate in class discussions.
Methods of Instruction	Lecture
Rationale	Students will be required to listen to lectures on course topics.
Methods of Instruction	Outside reading
Rationale	Students will be expected to read and study text materials and hand-outs outside of class time.

Assignments

Practicing freehand sketching or the rendering of technical drawings without using technical drawing tools or programs. Studying blueprints and finding missing dimensions. Complete three-view orthographic drawings based on live parts. Complete assignments on the alphabet of lines. Converting degrees to minutes and seconds

Methods of Evaluation	Rationale
Final Exam	Students will be given a final exam on the materials taught during the course such as the alphabet of lines, bilateral and unilateral dimensioning, three-view drawings, and geometric dimension and

	tolerances.
Tests	Students will be given tests on chapter material such as object, hidden, center, extension, and dimension lines.
Homework	Students will be required to complete instructor assigned homework and readings such as finding missing dimensions from supplied orthographic drawings.

Equipment

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
	Olivo, T. P., & Olivo, T. C. . (2011) Basic Blueprint Reading and Sketching, 9th , Delmar Cengage		This is the most recent version of this text	

Other Instructional Materials

No Value

Materials Fee

No

Learning Outcomes and Objectives

Course Objectives

No value

CSLOs

Read and accurately interpret industrial drawings.	Expected SLO Performance: 70.0
Produce simple technical sketches.	Expected SLO Performance: 70.0
Recognize and understand symbology used on working drawings.	Expected SLO Performance: 70.0
Utilize size and location dimensions to accurately describe elements of objects and assemblies.	Expected SLO Performance: 70.0

Outline

Course Outline

A. Bases for blueprint reading
B. Lines
    1. The alphabet of lines and object lines
    2. Hidden lines and center lines
    3. Extension lines and dimension lines
C. Views
    1. Three-view drawings
    2. Arrangement of views
    3. Two-view drawings
    4. One-view drawings
    5. Auxiliary views
D. Dimensions and notes
    1. Size and location dimensions
    2. Dimensioning cylinders; circles; and arcs
    3. Size dimensions for holes and angles
    4. Location dimensions for points; centers; and holes
    5. Dimensioning large arcs and baseline dimensions
    6. Tolerances: fractional and angular dimensions
    7. Representing and dimensioning external screw threads
    8. Representing and specifying internal and left hand threads
    9. Dimensioning tapers and machined surfaces
    10. Dimensioning with shop notes
E. Section
    1. Cutting planes; full sections; and section lining
    2. Half sections; partial sections; and full section assembly drawings
F. Computer numerical control (CNC) fundamentals
    1. Datum: ordinate and tabular dimensioning
G. Geometric dimensioning and tolerance
    1. Geometric dimensioning; tolerance; and datum referencing
H. Computer graphics technology
    1. Computer aided drafting (CAD) and design (CADD) and robotics
I. Welding drawings
    1. Symbols; representation; and dimensioning
J. Working drawings
    1. Detail drawings and assembly drawings
K. Sketching lines and basic forms
    1. Sketching horizontal; vertical and slant lines
    2. Sketching curved lines and circles
    3. Sketching irregular shapes
    4. Sketching fillets; radii; and rounded corners and edges
L. Freehand lettering
    1. Freehand vertical lettering
    2. Freehand inclined lettering
M. Shop sketching: pictorial drawings
    1. Orthographic sketching
    2. Oblique sketching
    3. Isometric sketching
    4. Perspective sketching
    5. Pictorial drawings and dimensions

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