



DIABLO VALLEY COLLEGE

DATE DRAFTED: Fall 2016

DVC COURSE: Intro to Technical Drawing - Engineering/Architecture 119 (CSU)

SECONDARY COURSE: Design Drafting and/or ROP CAD

SCHOOL: Heritage High School

ADDRESS: 101 American Avenue
Brentwood, CA 94513

A. COLLEGE COURSE DESCRIPTION: This course is an introduction to the use of technical drawing tools and computers to produce technical lettering and line work, geometric construction, sketching and other shape description, orthographic projection, dimensioning section views, auxiliary views and pictorials.

B. UNITS: 3.0

HOURS: 36 lecture/72 lab

C. PRE-REQUISITES: N/A

D. REQUIRED CONTENT FOR ARTICULATION:

(Please see "content" section of attached course outline).

E. REQUIRED COMPETENCIES (PERFORMANCE OBJECTIVES) FOR ARTICULATION

(Please see "objectives" section of attached course outline).

F. METHODS FOR END OF COURSE ASSESSMENT:

Credit by exam: Students must complete a written and online assessment with a grade of 80% or better.

G. PROCEDURES AND/OR CRITERIA FOR COURSE ARTICULATION:

1. Complete the Design Drafting and/or ROP CADD curriculum at Heritage High School with a grade of "C" or better.
2. Complete the DVC "Credit by Exam" procedure with a grade of 80% or better.
3. Apply for DVC admission through the CCCOpen, to obtain a CCCID#. Complete an application to Diablo Valley College and obtain a Contra Costa Community College Student ID#.
4. Create an account on our CATEMA Site using the student's CCCID and seven digit DVC Student ID#, enroll in the appropriate articulated class at the high school.
5. Create an account on CATEMA and enroll in the appropriate articulated class.
6. Upon completion of the above, the student will receive on his/her DVC college transcript the unit credit for DVC's ENGIN 119.

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H. TEXTBOOKS OR OTHER SUPPORTING MATERIALS:

Author: Graham, Bryan

Title: Engineering Graphics, Tool for the Mind

Year: 2014

Book Two

Author: Reyes, Alejandro

Title: Beginners's Guide to SolidWorks

Year: 2014

AGREEMENT WAS BASED ON STATEWIDE CAREER PATHWAYS PROJECT TEMPLATE:



YES



NO

NAME OF TEMPLATE USED:

Intro to Design Drafting using CAD

Articulation agreements shall remain in effect for three years after which they will be subject to review for renewal. Articulation agreement renewals will include a review of the most up-to-date postsecondary and secondary course outlines and a discussion of current teaching methodologies and stated competencies.

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HIGH SCHOOL/ROP/ DISTRICT SIGNATURE

COLLEGE SIGNATURES



High School Principal



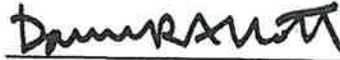
High School Instructor/ROP Instructor



ROP Principal/Director



District Representative



College Instructor



Articulation Officer



Division Dean



VP Instruction

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Course outlines -- detailed results

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Diablo Valley College Course

ENGTC-119: Introduction to Technical Drawing

Description

This course is an introduction to the use of technical drawing tools, technical lettering and line work, geometric construction, sketching and shape description, orthographic projection, dimensioning, section views, auxiliary views and pictorials. Introduction to the use of computers to produce technical drawings.

Notes

Same as ARCHI-119. For students with no previous drafting experience. Credit by Examination option available. Formerly ENGIN-119

General Information

Department: Architecture/Engineering
Division: Physical Science and Engineering
Units: 3.00
Grade Code: Student choice
Repeatability: 0
Max day class size: 30
Max night class size: 30

Number of Hours
Per Semester

Lecture: 36.00
Laboratory: 72.00
Activity: 0.00

By Arrangement

Lecture: 0.00
Laboratory: 0.00
Activity: 0.00

Objectives/Student Learning Outcomes

Students will be able to:

A. Lecture and Laboratory

1. Lines
 - a. Identify line types used in technical drawing.
 - b. Properly apply line types to a technical drawing.
2. Lettering and Sketching
 - a. Identify lettering and number styles.
 - b. Skillfully apply letters and numbers to a technical drawing.
3. Multi-line drawings
 - a. Identify the six main views of an object.
 - b. Properly position and label each of the six main views of an object.
4. Auxiliary views
 - a. Describe the purpose of using auxiliary views in a technical drawing.
 - b. Construct an auxiliary view of a simple object with an incline surface.
1. Computer Aided Design (CAD)

- a. Describe the uses of CAD in constructing a technical drawing.
- b. Use CAD software to develop the technical working drawing of an object.

Content

- A. In Lecture and Laboratory
1. Guidelines for lettering
 2. Linetypes and their application
 3. Sketching methods
 4. Orthographic projection
 - a. Planes and surfaces
 - b. Curved surfaces
 5. Isomeric development
 - a. Inclined surfaces
 - b. Oblique surfaces
 - c. Curved surfaces
 6. Oblique drawings
 - a. Cavalier
 - b. Cabinet
 - c. Curved surfaces
 7. Auxiliary views
 8. Sections
 - a. Full section
 - b. Half section
 - c. Offset section
 - d. Revolved/removed sections
 - e. Broken-out section
 - f. Aligned section
 9. Geometric construction
 - a. Bisectors
 - b. Tangencies
 - c. Curves
 10. Dimensions and measuring
 - a. Dimensioning rules
 - b. Dimension placement
 - c. Holes and cylindrical features
 - d. Machined holes
 - e. Finished surfaces
 11. Scales
 - a. Architectural scale b Engineering scale
 - b. Metric scale
 12. Working drawings
 1. Computer assisted drafting and design
 - a. Drawing entities
 - b. Modifying entities
 - c. Dimensions and annotations
 - d. Details
 - e. Printing

Methods

Lecture, Laboratory, Demonstration, Students will have access to software to complete 18 hours of homework assignments during laboratory hours.

Assignments

- Reading 1:** Read the chapter about freehand sketching. Write a summary on how to develop good proportion when enlarging or reducing a drawing.
- Reading 2:** Read the chapter about design processes. List the components of a good design and explain the interaction of the components to the main design solution.
Complete the missing and/or incomplete elements for the given multiview drawing.

| | | |
|---|---|--|
| <p>Writing, problem solving, performance 1: Writing, problem solving, performance 2: Lab, field activity, product or report:</p> | | <p>Construct an isometric pictorial from the given multi-view drawing.</p> <p>Develop the right and left views from given front and top views using Orthographic Projection methods.</p> |
| <p>Evaluation</p> | | |
| <p>Sample One:</p> | <p>Construct an isometric drawing from the given multiview drawing and label each plane of projection.</p> <p>Copy the given page of text in your best printing using italic style lettering.</p> | |
| <p>Sample Two:</p> | | |
| <p>Frequency of Evaluation:</p> | <p>Evaluations will adhere to the DVC "Fairness in Grading" guidelines and will include as a minimum:</p> <ul style="list-style-type: none"> • Evaluation of students within the first quarter of the course and notifying student of the results • Counting a final examination for no more than one-half the course grade • Basing final grades on at least three students' tests and/or reports | |
| <p>Sample Textbook. See the current course syllabus or bookcenter.dvc.edu for the actual course textbook.</p> | | |
| <p>Book One</p> | | |
| <p>Author:</p> | <p>Graham, Bryan</p> | |
| <p>Title:</p> | <p>Engineering Graphics: Tools for the MInd</p> | |
| <p>Publisher:</p> | <p>Prentice Hall</p> | |
| <p>City:</p> | <p>New Jersey, NJ.</p> | |
| <p>Year:</p> | <p>2014</p> | |
| <p>Book Two</p> | | |
| <p>Author:</p> | <p>Reyes, Alejandro</p> | |
| <p>Title:</p> | <p>Beginner's Guide to SolidWorks</p> | |
| <p>Publisher:</p> | <p>SDC Publications</p> | |
| <p>City:</p> | <p>Schroff, Europe</p> | |
| <p>Year:</p> | <p>2014</p> | |
| <p>Other</p> | | |
| <p>Approval Date Feb 2 2016</p> | | |