

Course Outline of Record

1. Course Code: DRA-010
2.
  - a. Long Course Title: CAD Drafting/Design Project
  - b. Short Course Title: DRAFTING/DESIGN-CAD
3.
  - a. Catalog Course Description:
 

This course provides training in applying the principle techniques of computer-aided drafting and design to selected projects. Students with majors or interest in architecture, drafting, interior design, landscape design or engineering, with the approval of their professor, will select projects to be produced using AutoCAD software.
  - b. Class Schedule Course Description:
 

This course provides training in applying the principle techniques of computer-aided drafting and design to selected projects.
  - c. Semester Cycle (if applicable): Spring semester
  - d. Name of Approved Program(s):
    - GENERAL DRAFTING Certificate of Achievement
4. Total Units: 2.00      Total Semester Hrs: 72.00  
 Lecture Units: 1      Semester Lecture Hrs: 18.00  
 Lab Units: 1      Semester Lab Hrs: 54.00  
 Class Size Maximum: 29      Allow Audit: Yes  
 Repeatability No Repeats Allowed  
 Justification 0
5. Prerequisite or Corequisite Courses or Advisories:
 

*Course with requisite(s) and/or advisory is required to complete Content Review Matrix (CCForm1-A)*

 Prerequisite: DRA 002
6. Textbooks, Required Reading or Software: (List in APA or MLA format.)
  - a. Tickoo, S (2015). AutoCAD 2016: A Problem-Solving Approach Thomson Delmar Learning. ISBN: 9781942689003  
 College Level: Yes  
 Flesch-Kincaid reading level: N/A
7. Entrance Skills: *Before entering the course students must be able:*
  - a. Show advanced 2D and 3D skills and an ability to work on independent project of a type applicable to their major as approved by the instructor.
    - DRA 002 - Define the operation of the function keys
    - DRA 002 - Navigate through AutoCAD's screen and pull-down menus and dynamic dialog boxes
    - DRA 002 - Recognize the Cartesian Coordinate System and how it relates to Absolute, Relative and Polar Coordinates
    - DRA 002 - Identify drawing setup with the UNIT, LIMITS, SNAP and GRID.
    - DRA 002 - Identify the basic drawing tools such as Line, Arc, Rectangle, Donut point, Dline, Circle and Polylines.
    - DRA 002 - Create selection sets for editing.
    - DRA 002 - Demonstrate basic editing features, objects snap modes, inquiry commands, and display aids.
  - b. Identify the various components that make-up a CAD workstation.
    - DRA 002 - Identify the various components that make-up a CAD workstation
  - c. Create, save and properly exit a drawing session on the computer
    - DRA 002 - Create, save and properly exit a drawing session on the computer
  - d. Define the operation of the function keys
    - DRA 002 - Define the operation of the function keys
  - e. Navigate through AutoCAD's screen and pull-down menus and dynamic dialog boxes.

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- DRA 002 - Navigate through AutoCAD's screen and pull-down menus and dynamic dialog boxes
- f. Recognize the Cartesian Coordinates System and how it relates to Absolute, Relative and Polar coordinates
  - DRA 002 - Recognize the Cartesian Coordinate System and how it relates to Absolute, Relative and Polar Coordinates
- g. Identify drawing setup with the UNI, LIMITS, SNAP and GRID.
  - DRA 002 - Identify drawing setup with the UNIT, LIMITS, SNAP and GRID.
- h. Identify basic drawing tools such as Line, Arc, Rectangle, Donut Point, Dline, Circle and Polylines
  - DRA 002 - Identify the basic drawing tools such as Line, Arc, Rectangle, Donut point, Dline, Circle and Polylines.
- i. Create selection sets for editing.
  - DRA 002 - Create selection sets for editing.
- j. Demonstrate basic editing features, object snap modes, inquiry commands, and display aids.
  - DRA 002 - Demonstrate basic editing features, objects snap modes, inquiry commands, and display aids.

### 8. Course Content and Scope:

#### Lecture:

- |   |
|---|
| a. Project type and scope will be determined by the instructor and must be applicable to the student's major course of study. |
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#### Lab: *(if the "Lab Hours" is greater than zero this is required)*

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| <ol style="list-style-type: none"><li>1. Draw components of two or three dimensional project.</li><li>2. Plot work in progress for critique.</li><li>3. Edit changes from critique.</li></ol> |
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### 9. Course Student Learning Outcomes:

1.  
Analyze design problems and formulate strategies for development.
2.  
Exhibit development and productivity in completing design projects using the AutoCAD software.

### 10. Course Objectives: *Upon completion of this course, students will be able to:*

- a. Develop problem-solving techniques related to CAD independent project as per student agreement with the instructor
- b. Communicate more effectively in a technological society through the use of CAD.
- c. Identify advanced components of the AutoCAD software in order to independently analyze a design project and formulate solutions.
- d. Compare traditional methods of presentations with the presentation capabilities of AutoCAD
- e. Show confidence in development, production and completion of complex project independently using CAD.

### 11. Methods of Instruction: *(Integration: Elements should validate parallel course outline elements)*

- a. Collaborative/Team
- b. Demonstration, Repetition/Practice
- c. Discussion
- d. Individualized Study
- e. Laboratory
- f. Lecture
- g. Observation
- h. Participation
- i. Self-exploration

### 12. Assignments: *(List samples of specific activities/assignments students are expected to complete both in and outside of class.)*

In Class Hours: 72.00  
Outside Class Hours: 36.00

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## a. In-class Assignments

1. Draw components of two or three dimensional project.
2. Plot work in progress for critique.
3. Edit changes from critique.

## b. Out-of-class Assignments

1. Demonstrate new skills learned through progress review by instructor.
2. Develop final project using comprehensive & accurate CAD

### 13. Methods of Evaluating Student Progress: *The student will demonstrate proficiency by:*

- Critiques
- Presentations/student demonstration observations
  1. Skill demonstration
  2. Presentation of Projects
- Product/project development evaluation
  - Successful completion of project as agreed upon at the beginning of semester.
- Student participation/contribution
- Student preparation

### 14. Methods of Evaluating: Additional Assessment Information:

### 15. Need/Purpose/Rationale -- *All courses must meet one or more CCC missions.*

#### PO - Career and Technical Education

Fulfill the requirements for an entry- level position in their field.

Apply critical thinking skills to research, evaluate, analyze, and synthesize information.

#### PO-BS Critical Thinking

Assess relevant information and come to thought-out conclusions and solutions.

#### PO-BS Independent Study Skills

Show purposeful and self-directed learning.

Create goals and take an active role in defining these goals.

#### IO - Critical Thinking and Communication

Apply principles of logic to problem solve and reason with a fair and open mind.

Apply standard conventions in grammar, mechanics, usage and punctuation.

Utilizing various communication modalities, display creative expression, original thinking, and symbolic discourse.

### 16. Comparable Transfer Course

University System	Campus	Course Number	Course Title	Catalog Year
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### 17. Special Materials and/or Equipment Required of Students:

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18. Materials Fees:  Required Material?

**Material or Item**

**Cost Per Unit**

**Total Cost**

### 19. Provide Reasons for the Substantial Modifications or New Course:

#### Periodic Course Review

20. a. Cross-Listed Course (*Enter Course Code*): *N/A*  
b. Replacement Course (*Enter original Course Code*): *N/A*

21. Grading Method (*choose one*): Letter Grade Only

22. MIS Course Data Elements

- a. Course Control Number [CB00]: CCC000240533
- b. T.O.P. Code [CB03]: 95300.00 - Drafting Technology
- c. Credit Status [CB04]: D - Credit - Degree Applicable
- d. Course Transfer Status [CB05]: D = \*Transfer to CSU, limited to UC/see counselor
- e. Basic Skills Status [CB08]: 2N = Not basic skills course
- f. Vocational Status [CB09]: Clearly Occupational
- g. Course Classification [CB11]: Y - Credit Course
- h. Special Class Status [CB13]: N - Not Special
- i. Course CAN Code [CB14]: N/A
- j. Course Prior to College Level [CB21]: Y = Not Applicable
- k. Course Noncredit Category [CB22]: Y - Not Applicable
- l. Funding Agency Category [CB23]: Y = Not Applicable
- m. Program Status [CB24]: 1 = Program Applicable

Name of Approved Program (if program-applicable): GENERAL DRAFTING

*Attach listings of Degree and/or Certificate Programs showing this course as a required or a restricted elective.)*

23. Enrollment - Estimate Enrollment

First Year: 17  
Third Year: 29

24. Resources - Faculty - Discipline and Other Qualifications:

- a. Sufficient Faculty Resources: Yes
- b. If No, list number of FTE needed to offer this course: N/A

25. Additional Equipment and/or Supplies Needed and Source of Funding.

N/A

26. Additional Construction or Modification of Existing Classroom Space Needed. (Explain:)

N/A

27. FOR NEW OR SUBSTANTIALLY MODIFIED COURSES

Library and/or Learning Resources Present in the Collection are Sufficient to Meet the Need of the Students Enrolled in the Course: Yes

28. Originator Donbert M. Bitanga Origination Date 03/04/17