1. **COURSE ID:** DRAF 121   **TITLE:** Computer-Aided Drafting I
   Units: 3.0 units **Hours/Semester:** 32.0-36.0 Lecture hours; 48.0-54.0 Lab hours; and 64.0-72.0 Homework hours
   Method of Grading: Grade Option (Letter Grade or Pass/No Pass)

2. **COURSE DESIGNATION:**
   Degree Credit
   Transfer credit: CSU; UC

3. **COURSE DESCRIPTIONS:**
   Catalog Description:
   > A beginning AutoCAD course. Covers basic entities, edit commands, display controls, layering, text, dimensioning and isometric drawing. A materials fee as shown in the Schedule of Classes is payable upon registration.

4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**
   Upon successful completion of this course, a student will meet the following outcomes:
   1. Apply appropriate software file management procedures.
   2. Create drawings using the drawing and edit commands of the AutoCAD drafting software.
   3. Apply ASME Y14 Standards in dimensioning and tolerancing of drawings.
   4. Create and use symbol libraries in drawings.
   5. Create architectural drawings for a residential structure.
   6. Develop mechanical drawings.
   7. Archive (electronic files) and output drawings with printers and plotters.
   8. Cultivate and assess an active commitment to finding creative and inventive solutions and integrate their technical computer graphics knowledge to achieve viable solutions in producing CAD drawings.

5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**
   Upon successful completion of this course, a student will be able to:
   1. Apply the software to create parts, floor plans and drawing for the engineering, architecture, interior design and industrial design industries.
   2. Be aware of and use ASME Y14 Standards when presenting drawing plans.
   3. Create and use available online downloadable symbol libraries in drawings.
   4. Archive (electronic files) and output drawings with printers and plotters.
   5. Cultivate and assess an active commitment to finding creative and inventive solutions and integrate their technical computer graphics knowledge to achieve viable solutions in producing CAD drawings.

6. **COURSE CONTENT:**
   Lecture Content:
   1. COMPUTER ORIENTATION
       A. MOUSE
       B. TABLET
       C. MENUS
       D. BASIC ENTITIES
       E. BASIC EDIT
   2. BASIC ENTITIES
       A. LINE
       B. PLINE
       C. CIRCLE
       D. ARC
       E. ELLIPSE
   3. BASIC EDIT
       A. ERASE
       B. REDRAW
       C. OOPS
       D. UNDO

        C. FILL
        D. BLOCK
        E. INSERT
        F. MINSERT
        G. RENAME
        H. PURGE
        I. SYMBOL LIBRARY
18. BASIC ISOMETRICS
        A. ISO PLANES
        B. ISO CIRCLES
        C. ISO TEXT

Lab Content:
LAB portion of each class session supports each lecture through design problems that support the given lecture theme.

7. **REPRESENTATIVE METHODS OF INSTRUCTION:**
Typical methods of instruction may include:
    A. Lecture
    B. Lab
    C. Discussion
    D. Field Trips
    E. Other (Specify): a. Communication: Students will read and translate data relative to geometry, fabrication and assembly/installation requirements into a graphical form easily understood by others with similar technical understanding. b. Reading assignments: Instructor will assign reading from course syllabus each week c. Computation: Students will use basic mathematical operations as required to define graphic geometry parameters. d. Writing/drawing assignment: i) Student will be required to submit one research paper on a CADD drafting topic. The paper will include a clear general and specific purpose, introduction, body, and conclusion, use of effective organizational format, and smooth transitional devices ii) Students will keep a portfolio of drawings that reflect their progress throughout the semester. e. Skill building: i) Instructor will demonstrate various CADD drawing processes. ii) Students will be asked to perform specific drawing exercises at increasingly challenging levels. f. Multimedia: i) Students will watch PowerPoint presentations of drawing constructions and techniques and analyze them according to theory and concepts taught in class. g. Critical thinking and problem solving: i) Lecture/discussion to understand use of specific drawing techniques. ii) Students will select and apply appropriate spatial relationship principles to determine problem solutions.

8. **REPRESENTATIVE ASSIGNMENTS**
Representative assignments in this course may include, but are not limited to the following:
Writing Assignments:
Assignments are problem solving part creation and drawings reading assignments.
Reading Assignments:
Reading assignments are from the extensive syllabus, online tutorials and available texts in the lab.

9. **REPRESENTATIVE METHODS OF EVALUATION**
Representative methods of evaluation may include:
    A. Class Participation
    B. Class Performance
    C. Class Work
    D. Exams/Tests
    E. Field Trips
    F. Final Class Performance
    G. Final Performance
    H. Homework
    I. Lab Activities
    J. Portfolios
    K. Quizzes
    L. Written examination
    M. a. Written homework - to reflect students' ability to write procedures that meet evidence and reasoning skills objectives b. Presentations - to demonstrate students' ability to inform and use evidence and reasoning skills when appropriate c. Written exams/timed drawing exams - to reflect students' knowledge

of theories, concepts, recognize and use evidence and skills presented in class demonstrations, lectures, text and discussions d. Participation - to reflect students' involvement in class discussions, giving feedback on projects to fellow classmates, doing lab projects and homework assignments e. Final Project - to reflect students' knowledge of theories, concepts, skill level, ability to organize information, and apply reasoning skills presented in demonstrations, class discussions, lectures and text.

10. **REPRESENTATIVE TEXT(S):**
    Possible textbooks include:
    A. Tickoo. *AutoCAD 2020: A Problem Solving Approach.*, 26th ed. CADCIM Technologies, USA, 2019

Origination Date: September 2020
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Course Originator: Rosemary Nurre