Computer-Aided Drafting and Design (CADD) for Civil Engineering, Surveying, & Land Development Technicians using AutoCAD Civil 3D 2018

CEST 85, Section 5664 – Spring 2020 Course Syllabus

Instructor: Jennifer Looper, LSIT, ACP   email: jlooper@santarosa.edu   Cell: (707) 509-9292

Course Goal
The primary goal of this class is for students to acquire a fundamental knowledge of the software used by Civil Engineering and Land Surveying Technicians to map terrain and prepare construction drawings. This class will provide a general understanding of the more common elements used in the Civil 3D software.

As a class, students will be exposed to the concepts identified in the "course outcome" area below. Upon completion of the course, students are not expected to be Civil 3D experts, but they will have acquired a fundamental knowledge of the software. This course is intended to establish a foundation which students can use to broaden their knowledge of AutoCAD Civil 3D.

Course Outcome
- Understand the AutoCAD Civil 3D interface
- Start and setup a new drawing, or open an existing drawing utilizing Civil 3D
- Create, edit, and manage COGO points
- Import and export COGO point data from field surveys and external files
- Create and properly label lines and curves for civil engineering and land surveying projects
- Perform subdivision computations for area and boundary information
- Create a digital terrain model (DTM) surface of the existing ground from point, contour, and breakline data
- Create a finished grade or design surface
- Create, label, and edit contours from DTM surface data
- Create horizontal and vertical alignments for roadways
- Create profiles and cross sections of roadways from alignments or survey data
- Create and define roadway assemblies
- Compute earthwork volumes using alignments, profiles, cross sections and corridors
- Create a gravity pipe network
- Create a set of improvement plans, including plan, profile, cross sections, and details using Civil 3D

Student Learning Outcomes
Upon completion of this course, students will be able to:
- Use Civil 3D software to generate technical drawings and design documentation
- Input survey data, such as COGO points, for boundary and topographical mapping
- Generate digital terrain model (DTM) surfaces
- Create parcel boundaries and data for subdivisions
- Create horizontal and vertical alignments for roadways

Course Prerequisites
CEST 51 (Civil Drafting Technology) with a grade of "C" or better, or equivalent

Other Recommended Prerequisites
Students are required to be relatively proficient with the following AutoCAD topics before taking this class:
- Opening and Saving Files
- Creating and manipulating Layers
- Drawing Lines, Arcs, and Polylines
- Erasing, Trimming, and Extending Lines and Objects
- Creating and using Text Styles
- Creating and using Blocks

Required Reading Materials
- Required reading material will be provided by the instructor through the student portal and/or during class.

Additional Outside Reading Materials (Recommended but not required)
- [AutoCAD Civil 3D 2018 Fundamentals, SDC Publications](), by Ascent

Other Materials
Laptop computers and similar devices are not allowed to be connected to the network.

Course Schedule
- Fridays from 5:00PM to 9:50PM
- Classes will be held in Kunde Hall, RM 111 on the Santa Rosa Campus
- Dates: 1/17/20-5/22/20
- Final Exam Date: 5/22/2020. _Tentative_ time of exam: 5:30PM to 8:15PM. The final exam is mandatory.

Attendance
- Students are expected to attend all sessions of the course which they are enrolled. A student may be dropped if they miss more than 10% of the total class time (including lab), as this constitutes excessive absence for the course.

Tentative Course Schedule
- The objective of the course schedule is to assist you in planning your schedule. Every effort will be made to stay on schedule. However, the instructor may find it necessary to make appropriate adjustments to meet the learning objectives for the entire class.

Student Evaluations
- Graded Assignment files and Computer Examinations will be evaluated on the computer unless instructed otherwise. Assignments need to be completed and saved to your network drive by no later than 10 minutes after the initial hour of the class following their assigned date, unless otherwise instructed. **_Please do not modify your original files after the due date_**. The date stamp on the ".dwg" file is used to determine if your assignment was completed on time. Late assignments will be docked 20% for each late class and will not be accepted after the 2nd late class.
- Exams and quizzes will be administered in either computer and/or written hard copy format at the instructor's discretion. Makeup exams and makeup quizzes are generally not given but may be considered under specific circumstances.
- Students are required to plot their class project and submit a final product to the instructor in accordance with the Tentative Course Schedule, unless otherwise instructed.
- Course grading distribution:

	Points Each	Percentage of Grade	Anticipated Quantity
Graded Assignments:	10	35%	5 (min)
Announced Written Quizzes:	10-20 (varies)	20%	9
Project:	100	20%	1
Final Examination:	100	25%	1
Course Total:	**340 points (min)**	**100%**	

Note: Approximately 20 assignments (2 per week) are required to be completed by the students. After all 20 assignments are completed, a minimum of 5 assignments will be randomly selected by the instructor and graded.

- A course grade based on the preceding will be given on the following scale:

    A = 90% - 100%
    B = 80% - 89%
    C = 70% - 79%
    D = 60% - 69%
    F = Below 60%

Communications
- If you need to get in touch with me, I can be reached at the email address jlooper@santarosa.edu. I check my email multiple times a day. Please include "CEST 85" in the subject line of the email.

Office Hours
- Office hours are from 4:30PM to 4:55PM on Fridays in Kunde Hall, RM 151. Office hours are also available from 9:50PM to 10:15PM on Fridays if arrangements are made *in advance*. Please visit my website for more information.

Class Preparation
Access to a computer with Civil 3D 2018 installed is key to passing this course. If students require additional time beyond the allocated lab time to complete their assignments, there will be scheduled open lab hours posted outside Kunde Hall RM 111 after the first week of classes. Autodesk provides a free student download of the Educational version of Civil 3D 2018 so that students with home computers or laptops will be able to work at home, outside of class. The software is available here: http://www.autodesk.com/education/free-software/autocad-civil-3d. Be certain to select the *2018 version only*. Newer versions will not be backwards compatible with the 2018 software installed in the labs. All students should be proficient in software installations, file management, and correctly transferring class data to and from their own USB drives. Your instructor is not your personal IT consultant.

Please note that downloading the software onto your own PC is not a substitute for attending the lab portion of the class. The SRJC attendance policy will be strictly enforced.

It is the student's responsibility to consult the SRJC web-based information listed below -- please do so, they are considered parts of this syllabus:

- SRJC Schedule of Classes: https://classes.santarosa.edu/
- SRJC Academic Calendar: http://admissions.santarosa.edu/academic-calendar/
- SRJC Rights & Responsibilities: https://studentlife.santarosa.edu/rights-and-responsibilities
- SRJC Disability Resources: http://drd.santarosa.edu/
- SRJC Student Services: https://student-services.santarosa.edu/
- SRJC Academic Program Information: https://www.santarosa.edu/academics/

Academic dishonesty of any kind will not be tolerated.
Per SRJC Policy 3.11: Academic dishonesty is regarded as any act of deception, benign or malicious in nature, in the completion of any academic exercise. Examples of academic dishonesty include cheating, plagiarism, impersonation, misrepresentation of idea or fact for the purpose of defrauding, use of unauthorized aids or devices, falsifying attendance records, violation of testing protocol, or inappropriate course assignment collaboration.

Class Conduct and Courtesy
During lectures, students should be listening to the instructor's presentation. *Working on assignments during the lecture is not allowed*. The lesson files required to complete each lab assignment will not be made available until the lecture and/or presentation is over. Students shall refrain from having conversations, checking email or web browsing. These behaviors are distracting to others and to the instructor. **No student is allowed to print or plot during any lecture under any circumstances.** This includes visiting students working on course work during other class periods when an instructor may be lecturing. **The above distractions or any disruptive behavior during class is grounds for being excused from class with a loss of that day's work.**

Open Lab
There will be open lab time in Kunde Hall (room #'s & times TBD). A schedule will be posted on the doors to the labs. There may be lab seats available during other courses in progress. When desiring to occupy an empty station during a lecture, students should politely inquire with the instructor prior to just taking a seat. If a student shows up late and you are occupying their seat, you must vacate IMMEDIATELY.

Cell Phones
Please turn cell phone ringtones off and if you must receive a call please go outside during your phone conversation.

Syllabus Purpose and Disclaimers
This syllabus is an agreement. Continued registration in CEST 85 means that you, the student, agree to the policies and procedures outlined in this document. If some aspects of this syllabus are unclear to a student, it is their responsibility to inquire regarding that matter at the beginning of the course.