

Technical Design 231 Syllabus - Introduction to Civil Drafting

Instructor: Ron Raty

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Office hours:

Monday and Wednesday 3:00 pm to 5:00

Course Description:

Civil Engineering is a professional engineering discipline that deals with the design, construction, and maintenance of the physical and naturally built environment, including works like roads, bridges, canals, dams, and buildings. The **Engineering Technician** supports the engineer in their endeavor by providing drafting, modeling, design, and technical support. This course is an introduction to the specialized drafting techniques used in the civil industry. In a nutshell, you can imagine the civil discipline as including any construction that occurs outside an occupied building.

Course Outcomes:

Upon successful completion of this course, the student will be able to:

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- Understand and use an engineer's scale, and be able to perform scale conversions.
- Understand surveying fundamentals, and be able to create a drawing from survey data.
- Understand fundamental legal descriptions and plot plans.
- Understand contour lines.
- Understand horizontal alignment, and fundamental cut and fills.
- Understand and able to create common civil construction details.
- Continue to develop and exercise the ability to be critical of your own work.
- Continue to develop and exercise the ability to make value judgments.

Prerequisite:

Technical Design 200, or by permission of the instructor based on experience using Autocad.

Recommended Text:

This course is based on the text: *Civil Drafting Technology by David Madsen, Shumaker, Madsen, 7th addition.* http://wps.prenhall.com/chet_madsen_civildrafting_7/ The text is not required; the information is generally available on line if you are willing to do the research. If you are on a waiting list for this class, you may have to supply your own computer and software because there are limited computers available in the computer lab. Student versions of the Autocad software are available for free from Autodesk.

Course Requirements:

Assignments

Some small exercises will be assigned. These are generally not too involved, and are used to re-inforce processes or procedures described in the class.

Projects

During this course, you will develop two projects, on a fictitious site called the Montana Development. The first project will involve the subdivision and infrastructure for a large tract of land to be developed into a residential subdivision. The second project will include a building pad, access road, and utilities for one of the those building lots.

Your work (assignments and project submittals) will be assessed and graded employing the following criteria. Not all criteria will apply to every assignment:

- Assignment accuracy – does your drawing convey the proper information clearly. Is the object being represented correct and complete, and dimensionally accurate.
- Technical Accuracy – does your drawing follow the proper graphic standards: line weights and types, dimensions, labels, and technically correct.
- Drawing Layout – Is the drawing composed properly and neatly on the sheet, scaled correctly, and the title information complete.
- Critical Review – Take a close look at your final drawing before submitting it. If you see things that could be done better, but you don't have time or otherwise feel incapable of fixing them, make a note of the deficiency on the drawing. Seeing a problem is half of fixing it. You will get a better grade if you can point out where you need to improve.

Quizzes

There will be several quizzes that will be conducted on-line using the Angel website.

Attendance

Much of the value of this class is by observing how other students are dealing with some of the typical problems encountered by civil draftsman. There is usually more than one correct response, and by observing how others are solving their problems, the student gets a much broader exposure to the possibilities. Your attendance will be noted on a class by class basis and this record counts for a portion of your final grade. *Students arriving after attendance has been taken may not get credit for attendance.*

Final Grade

Your final course grade will be based on a point system:

Assignments:	30%
Quizzes	0%
Projects	50%
Portfolio	10%
Attendance and Participation	<u>10%</u>
Total	100% pts

The final grade recorded with the registrar is based on the weighted average of the score received for each category. The breakdown of the grades are as follows

93-100%	4.0
83-91%	3.0+
73-81%	2.0+
63-71%	1.0+
57-61%	0.7+

Any percentage less than 57% is inadequate to receive class credit, and a grade of 0.0 will be recorded.

Revising or correcting drawings:

Drawing assignments may be revised or corrected per the instructor comments (“red lines”) for an improved grade up to 90% of the total points possible. You only get one chance to revise a drawing, so be sure to make all the corrections the first time. In an office, not making all the revisions when resubmitting a drawing will upset the boss. It is common in an office, when “picking up red lines”, to mark each red comment with a yellow or blue highlighter to indicate that correction has been made. You should do this when correcting drawings. Staple your corrected drawing to the “red lined” drawing (be sure to mark out all the red lines) and turn the two in together. Make sure you respond to all comments when resubmitting, or you won’t get many additional points.

Drawing Storage Recommendations

Electronic drawing files (or copies) shall be stored on the network drive during the quarter. Only you have access to your folder.

Withdrawal:

If you decide that you must withdraw from this class, you must do in conformance with Olympic College policy. A discontinuance of attendance without an Official Withdrawal Form is an automatic 0.0 (F) for the class. This is school policy and governs all classes conducted at Olympic College.

Cheating

All assignments are to be the original work performed by the student. Sharing of computer files, or cutting and pasting drawings, is strictly forbidden. Consulting with each other for ideas is encouraged, but make sure you are the one creating your own drawing. Do not share labor by helping each other complete a single drawing. ALL work you turn in must be created by your own hand without the aid of others.

About the Instructor

Ron Raty is a licensed architect with over 30 years of experience in architectural design and project management. He holds a professional Masters of Architecture degree from Montana State University. He started his career hand drafting in architectural and engineering offices, eventually moving on to CAD drafting as that

technology became popular. The skills and standards he learned hand drafting were later essential when operating a CAD machine. Ron was raised in Montana, and has since lived and worked in Alaska, Washington, California, Fiji, and Singapore. He has specialized in the design of office buildings, schools, and health care facilities, and is licensed to practice architecture in Alaska and Washington.

American Disabilities Act Statement

Any student who feels he/she may need an accommodation based on the impact of a disability should contact the office of Access Services. Access Services will inform the instructor of any special accommodations required. This has to be done every quarter, because resources get re-allocated.

Humanities and Student Services Building, Room 204

Phone: 360-475-7540 or 1-800-259-6718 ext. 7540

Fax: 360-475-7436

E-mail: AccessServices@olympic.edu

Computer equipment:

Do not modify classroom computers. Downloading data from the internet is prohibited without instructor permission. If repairs are needed to your computer, please notify the instructor. Do not attempt to repair the computer yourself.

Cell Phones:

Cell phone use during lectures and presentations is prohibited. During lab times, please set your phone to vibrate or turn it off as a courtesy to others. If you have to take or make a call during lab times, please step out of the classroom so as a courtesy to others.

Additional lab hours:

Completion of lab assignments may require an investment of additional student time. The room is available during designated hours or otherwise when a teacher or teaching assistant is available for lab supervision. We will work out the exact hours in class to accommodate as many students as possible.

Food and Drink:

In accordance with school policy, food and drinks are not allowed in the CAD room. During lab time, students may come and go as necessary to refresh themselves.