

CE 107: Introduction to Civil Engineering Graphics (3 Credits)

Overview:

Graphic communication and drawing; use of instruments, lettering, dimensioning, and detailing of engineering drawing; drafting, and computer modeling.

Textbook:

Engineering Drawing and Design by David A. Madsen

References:

AutoCad 2006 Manual

Mastering AutoCAD 2006 and AutoCAD LT 2006 by George Omura

Coordinators:

Instructor:

Jennifer Halstead

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Teaching Assistants:

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Class Time & Place:

Drafting Sessions: KAP164
Monday or Wednesday 6:00 pm – 8:50 pm (Weeks 1-5)

AutoCAD Sessions: SAL126
Monday 6:00 pm – 8:50 pm (Weeks 6-15)

Office Hours: KAP 230D
[TBA]
Phone: (213)740-0567

Objectives:

- To prepare and give a beginning Civil Engineering and Building Science student the skills, knowledge and basic ability to communicate ideas graphically. To enable better visualization, presentation and organization of ideas by means of pencil drawings. Concurrently, familiarize the student with the basic tools used for preparing presentation and construction drawings.
- To provide the students with an introduction of basic knowledge of civil drawing skills for graphic communication in the real world of engineering.
- Give the students an overall understanding of the engineering process and applications.
- To expose students to the current state of computer graphics technology and its applications in civil engineering drafting.

Prerequisites by topic:

1. Descriptive Geometry
2. Basic Geometry

Topics:

Week 1	Course Introduction, Objectives and applications
Week 2	Introduction to drawing materials and equipment* Fundamentals of Engineering Graphics
Week 3	Visualization of 3-D objects Basic orthographic projections Axonometric Drawing
Week 4	Conventions of Dimensioning Sections, Shades, and Shadows
Week 5	Topography and Surveying Computer Basics (Hardware, Software, File System, CAD files, etc.) Computer Aided Design Environment
Week 6	AutoCAD sessions #1 - #9
Week 15	Advancements in computerized engineering graphics Feature Project Presentation (real life 3-D AutoCAD project)

*See the attached supplies list.

CE 107 Supplies
Spring 2007
University of Southern California

The following supplies will be necessary for the hand-drafting portion of CE 107. Please purchase them before the next class. Bring this equipment with you to each class. It is recommended that you mark it with your name and purchase some sort of protective or carrying container. The equipment can be easily broken or lost, and we don't want you to have to purchase it again if it is lost or stolen.

1. Pad of 8 ½ " x 11" 1000H CLEARPRINT drafting paper
2. Roll of ½ " drafting tape or box of draft dots
3. T square (30" wood/plastic)
4. Three mechanical pencils – one with a .3mm lead and one with a .5mm lead and one with a .7mm lead
5. An assortment of leads: 4H, 2H, H, and F
6. 30/60 degree triangles (6" and 8")
7. 45 degree triangles (6" and 8")
8. 6" or 8" adjustable triangle
9. Small French curve
10. Circle template (No. 40 RapiDesign or equal)
11. Miscellaneous shapes template (No. 50 RapiDesign or equal) OPTIONAL
12. Soft Pink Pearl eraser (pencil or block type) - OPTIONAL
13. White vinyl eraser
14. Pentel Clic eraser
15. Eraser shield
16. Drafting brush to keep your drawing area swept clean - OPTIONAL
17. 6" compass
18. Scales: 12" Architectural scale (8 scales)
12" Engineering scale (6 scales)
6" Aluminum Architectural and Engineering scales OPTIONAL

Our intention is to give you a basic selection of drafting items which you can keep after this class and use in your professional lives. Many of these items are used daily in engineering careers, especially during your first few years. It is not necessary to purchase the most expensive version of these supplies.

You can purchase these supplies near campus at:

Roark Graphic Supplies
(213) 747-6100
549 West 23rd Street
Los Angeles, CA 90007

Staples may also have most of these supplies. There are other good drafting supply stores in Los Angeles, and you are welcome to purchase from any of them.