

New York City College of Technology – City University of New York
300 Jay Street, Brooklyn, New York 11201

Department of Architectural Technology

ARCH 1290

ARCHITECTURAL CADD

(1 Class hr., 3 lab hrs, 2 cr.)

Course Description: Introduction to the use of the computer to assist in the production of construction and design drawings. This course will provide the student with the exposure necessary to use the computer as a drafting tool. The student will acquire skills through the use of the computer and equipment including AutoCAD.

Prerequisites: CUNY proficiency in reading and writing;
ARCH 1100 with a grade of C or higher or CMCE 1110 or ENT 2200

Required Materials: Flash Drive and 8-1/2" x 11" bound notebook

Assignments: Each student is responsible for turning in a project on the day the assignment is due even if absent. Projects should be submitted in the form specified for each submission by the professor. Students may be required to hand in drawing files and/or printed drawings. On the first day of class each student must exchange their email address and phone number with at least 2 other students. If absent, it is the student's responsibility to contact another member of the class or to see the instructor to find out what was assigned for the following class.

Projects are due on the date determined by the instructor and late work will be downgraded. A student will receive a penalty of 1/3 grade for each class the assignment is late. If the project deserves an A- but was delivered two classes late, the student will receive a B grade. (From A-, to B+, to B.) This penalty will be enforced even if the student is absent from class on the deadline day. Do not stay home from class if your project is not ready. Instead, present your questions and difficulties to the instructor so we can all learn.

Expect to spend 1 – 3 hours a week or more outside of class time to work on projects.
Check lab hours after the first week of classes.

In addition to in-class assignments, there will be three main projects completed during this course:

- Project 1 Apartment Floor plan
- Project 2 Basic Elevation of Doorway and Related Details
- Project 3 Complete Elevation of a Façade and Related Wall Sections

Evaluation, Grading and Attendance:

Copied, borrowed or 'shared' work will be considered cheating, and will result in a grade of F for the project and possibly a final grade of F. **Three absences will result in a complete final grade lower than earned.** Three times arriving to class late will equal one absence.

Final grades will be determined as follows:

- 20% Project 1
- 20% Project 2
- 40% Project 3
- 20% Quizzes

A grade of C or higher is required in this course to use it as a prerequisite for subsequent courses.

Academic Integrity

Students and all others who work with information, ideas, texts, images, music, inventions and other intellectual property owe their audience and sources accuracy and honesty in using, crediting and citation of sources. As a community of intellectual and professional workers, the college recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension and expulsion.

Learning Objectives:

Upon the successful completion of this course, the students shall be able to:

1. Demonstrate a basic proficiency in the use of a 2d computer drawing program.
2. Demonstrate a basic proficiency in the creation architectural drawings, plans, elevations, sections and details using a 2d computer drawing program.
3. Demonstrate an ability to compose a drawing sheet and scale a simple set of construction details in a professional manner.
4. Demonstrate the ability to understand the use of more advanced features of the software application including the use of blocks and external references.

Assessment:

Students will be given quizzes and will complete projects that test their ability to:

1. Draw using a 2d Computer Aided Design (CAD) drawing program.
2. Print and Plot 2d drawings demonstrating control of lineweights, use of text and dimension styles and hatching.
3. Develop simple details and produce drawings that show the construction of a building wall.
4. Complete a series of drawing projects that are organized well both as finished graphic plots and on a technical level within the drawing files.
5. Organize a set of interrelated drawing files, adhering to good file naming principles and using external references and blocks.

CAD Laboratory Rules:

All cellular phones, beepers, or other audio equipment must be turned off during class.

No eating, drinking or smoking in computer labs.

Monitors shall remain off for quizzes or as instructed by professor.

Only registered students may be in computer room during class.

Students must work on class assignments during class time. (Use open lab time for other work.)

Lab hours are posted on the door to the computer lab.

Course Outline & Schedule of Classes:

01. Overview and Introduction to CADD

(Object Manipulation Exercises Assigned)

Introduction to the computer hardware and software. Overview of CAD software. CAD Laboratory Rules and Housekeeping procedures. Introduction to basic geometry types and basic drawing commands.

02. Coordinate Types & Drawing Objects

(Object manipulation exercise due/Project 1 Assigned)

Review lecture 1 and introduce additional commands. Object selection choices and menu. Issue Project 1, a simple plan exercise for creation and manipulation. The file command for saving and recovery a drawing. . Data entry with scale accuracy.

03. Layers and Object Selection

(Quiz #1: Hardware/Software Abs/Rel Coordinates)

Advanced Object Selection and snap techniques and DRAWING AIDS menu. Basic use of layers for drawing.

04. Layers and the Modify Commands

(Quiz #2 Object Snaps & object types / Project #1 Due at end of Class / Project #2 Assigned)

Detailed review and use of the layer command. Review of AutoCAD Modify commands.

05. More on the Modify Commands and Adding Text

Continue review of the modify commands. Creation of Text and Text Styles.

06. Creating Text & Dimensions

(Quiz #3 Layer commands, text and dimensions)

Review of Text and Creating a Text Style for Dimensions. Introduction to Dimensioning.

07. Paperspace & Page Setup

Introduction to the concepts of Paperspace and Page Setup. Setting drawing scale.

08. Plotting

(Quiz #4 Paperspace and Modelspace / Project #2 due at end of Class / Final Project #3 Assigned)

Printing and plotting drawings. Controlling layers within viewports. Mvsetup Align commands

09. Hatch Patterns

Using the hatch command for delineation and rendering.

10. Blocks

(Quiz #5 Plotting a drawing)

Introduction into the use of blocks.

11. External References

Introduction to the concept and use of external references.

12. Attribute Blocks

Creation and use of attribute blocks.

13. Overview of the Final Project

(Quiz #6 Blocks, External References and Attributes)

The anatomy of a set of drawings. Assembling the final project as a set of drawings using several files. Review of ModelSpace/PaperSpace, Viewport Layout, Notes, Dimensions, Blocks and Attribute Blocks and external references.

14. Working with User Coordinate Systems

Creating and using a "User Coordinate System".

15. Using CADD in the Architectural Office (Final Project due at the beginning of class)

Review of the semesters work and how it fits in Architectural Practice. The Next step.

Housekeeping Procedures:

Always arrive to class on time each day. Lecture topics and quizzes begin immediately after attendance is taken and it is difficult to catch up on missed materials. Quiz time will not be extended due to lateness.

When arriving in class, immediately turn on your workstation and login. Use the username and password "student". Copy any files you will need for class from your flash drive to your folder on the desktop. If you arrive early you may open your files and begin to work.

If this is your first day using a particular workstation, create a folder on the desktop using Windows Explorer

Folder name should include Course Number, Section and Professors Last Name followed by Student Last Name and then First Name.

Example: ARCH1290_0000_ProfessorsName_StudentLastName_StudentFirstName

Work on drawings during class lab time. Remember to save (qsave) often. When done for the day, save and close your file, then exit AutoCAD. Then copy your file to either your floppy drive or flash drive using **Windows Explorer**. If you are the last class of the day, shutdown windows and then turn off your computer.

NEVER USE SAVE AS FROM WITHIN A PROGRAM TO COPY A FILE TO YOUR FLOPPY OR YOUR FLASH DRIVE. NEVER WORK DIRECTLY FROM YOUR FLOPPY OR FLASH DRIVE. NEVER!

All file names should include Course Number, Section and Professors Last Name followed by the Project Number and Title and finally the Student Last and then First Name. All work must be submitted using the same version of AutoCAD that is installed in the lab.

Example: ARCH1290_0000_ProfessorsName Project_xx Title Last_First.dwg

File names for course projects are as follows:

Example: ARCH1290_0000_ProfessorsName Project_01 ApartmentPlan Last_First.dwg

Example: ARCH1290_0000_ProfessorsName e Project_02 EntryElevationAndDetails Last_First.dwg

Example: ARCH1290_0000_ProfessorsName Project_03 ElevationAndWallSections Last_First.dwg

Be certain that you never leave the lab without a copy of your work on your flash drive. Remember to clean up after yourself and take your floppy or flash drive with you.

Due to computer maintenance that occurs throughout the term, there is no guarantee that your files will be on the same workstation when you return to the lab. Workstations are often reformatted and completely reinstalled erasing any student data stored there.