

AUTOCAD / DRAFTING **COURSE SYLLABUS**

Course Description

The AutoCAD/Drafting program at the TCTC is a two-year class designed to allow the student access to the basic principles of computer-aided design and drafting. The course is heavily geared towards the use of the latest computer hardware and software including AutoCAD, Architectural Desktop, and Inventor. A range alternative software packages will also be introduced to the student, so as not to “limit” him or her to the possibilities of design.

Instructional Philosophy

High standards will be met within the AutoCAD program. The daily class routine will be modeled much like a professional Design/Drafting office. A positive work ethic will be maintained, with each student working to his/her highest potential. As the program progresses through the Junior year, teamwork and joint projects will be stressed within the class. The facts are that technology is changing rapidly, and the student will be required to perform in various levels of the Design process, which will mean students, at times, will be assigned processes that will be completed within class and out of class. Also included within the two years will be oral and written projects presented to the class as a whole.

Course Goals

Students will...

- Demonstrate proper computer usage and lab/office safety and procedure standards set forth by the instructor and the TCTC.
- Students will demonstrate basic sketching and shape description techniques, on paper and on computer monitors.
- All students will be able to access the AutoCAD design software and the other software packages as they are introduced.
- File management techniques will be learned and demonstrated.
- Learn time management skills with long-term projects.
- Understand pre-engineering concepts and terms
- Using learned analytical problem solving skills, students will envision and conceive one major Architectural design.

Major Course Assignments and Projects

1. Because the lab is computer based, students will spend time on the machines daily working with both short and long term assignments.
 - Observe and demonstrate lab entrance and exit procedures.
 - Observe and demonstrate safety precautions and equipment care.
 - Start up/shut down computers and CAD systems.
 - Proper usage of floppy disks, CD disks, and hard drives.
 - File management skills.
 - Set drawing parameters.
 - Create and edit computer aided drawing utilities.
 - Demonstrate use of drawing aids, and output devices.
 - Use of symbols and importation of same within existing files.
 - Manage layers, line types, and plotting of completed projects.

Advanced Computer Aided Drafting Skills

- Create three-dimensional displays and shapes.
- Create wire frame and solid model shapes.
- Create 2-D geometry from 3-D models.
- Create 3-D wire frame models from 2-D geometry.
- Demonstrate use of display commands (e.g. hidden line, shading, removal)

Architectural Drawings

2. A major component of the Program is to learn the Basics of Architectural Design.
 - Students will draw residential floor plans from preliminary sketches.
 - Draw associated foundation and floor framing plans.
 - Complete associated elevations.
 - Draw sections and details, with schedules.
 - Complete electrical, plumbing, and HVAC plans.
 - Design a residential structure, including cost estimates.
 - Design, draw, and detail commercial structural shapes.
 - Introduction to Civil and Survey Drawing.
 - One self directed 9 weeks project

Related Academic and Problem Solving Skills

3. Teamwork, and interpersonal skills with others are essential.
 - Team design projects using computers
 - Hands on bridge building design
 - Written and oral projects, (individual and group)
 - Architectural mathematics and language skills

- Learn basic building code requirements
- Understand technical concepts and principles
- Learn to apply academic knowledge and skills to the field of study
- Read, understand and communicate in the language of the field

Evaluation Criteria

- Attendance (daily points)
- Performance in the lab, time management skills
- Practical lab exams
- Related and written assignments and exams
- Unit assignments
- Tests, quizzes
- Job shadowing project and follow-up *

Grading Scales

Grading in the AutoCAD program will follow the accepted system adopted by the TCTC Board of education, which is described in the student handbook.

92% to 100% = A

85% to 91% = B

73% to 84% = C

66% to 72% = D

65% & below = F

* Job shadowing project will constitute a major part of the total grading structure.

The instructor reserves the right to evaluate and adjust any and all point and grading systems set forth within the AutoCAD program based on each student's individual need and situation. Also, the instructor will not imply, promise, or guarantee that he will reach and/or attain his goals for the class as set forth within this and any other document.