Gibbs High School

Architectural and Engineering 1

(Formerly CAD 1)

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COURSE OUTCOME

Course Description: CAD 1 is the entry level course of the CTE Career and Technical Education drafting cluster. This cluster includes CAD 2, Advanced CAD and Principals of Engineering. Students may also apply for a TVA CAD work-based learning position their senior year after completing 2 or 3 credits of CAD.

Tennessee State Standards: Please refer to the State of TN website for CAD competencies: <http://www.tn.gov/education/cte/standardscurr/ti_1011.shtml>

Choose *computer aided drafting 1.*

INSTRUCTION

Skills Covered: This beginning course is a class in which the students will learn the beginning concepts of scale drawing and orthographic projection by making simple and complex two-and three-dimensional drawings using manual drafting tools and computer-aided design (CAD). Course content will enable students to make the transition into the use of CAD software by having them make increasingly sophisticated drawings. Students working independently but at times utilizing the team approach will culminate in a class project to create a complete set of construction and assembly drawings for an architecture and mechanical product. *Note*: All students must review, discuss safety, and attain 100% on the written and performance Safety Examination. Safety Examination can be taken three (3) times in order to attain 100%. All students must pass with 100% accuracy in order to continue in class.

General Pacing Guide:

Week 1 Safety and Careers in CAD

Weeks 2-3 Manual drafting line development and simple projections

Week 4 Manual drafting geometric construction

Week 5 Manual drafting scaled dimensioned drawings. Introduction to CAD

Weeks 6-9 Manual drafting and CAD orthographic drawings

Weeks 10-11 CAD dimensioning and more complex orthographic drawings

Week 12 CAD isometric drawings

Weeks 13-14 CAD assembly drawings

Week 15 Architectural styles

Weeks 16-17 CAD architectural drawings

Week 18 Review and final exam

(Architecture and assembly drawings are sometimes switched in order.)

The First 4 weeks will include research and presentations on Careers, Industry and History of Architecture and Engineering.

Materials Needed:

Traditional pencil and eraser

1 mechanical pencil – prefer .7mm or .9mm

Graph paper – We will *not* typically use a full pack.

A flash drive is highly suggested for back up of CAD files. May also use for other classes.

Fees: $10.00

Required Texts:

Fundamentals of Drafting and Design

Architecture Residential Drawing

Resources: Occasionally students may view films, film-clips, documentaries, or educational programming directly related to their study if time permits. All audio-visuals will comply with Knox County guidelines. Possibilities include the following:

*Modern Marvels Engineering Disasters Series* (rated PG)

*Junk Yard Wars* (rated G)

*Architectural Marvels* (rated G)

[www.winchestermysteryhouse.com](http://www.winchestermysteryhouse.com)

[www.architecure.about.com](http://www.architecure.about.com)

[www.greatbuildings.com](http://www.greatbuildings.com)

[www.popsci.com](http://www.popsci.com)

[www.kgis.gov](http://www.kgis.gov)

[www.cubify.com](http://www.cubify.com)

Any video clips shown from the internet will be about engineering and/or architecture.

Alternative Assignments/Activities: If you do not approve of a specific resource listed in this syllabus, please make your request to me in writing and an alternate assignment and /or materials will be provided. The request should include your name the child’s name, the specific activity/materials in which you do not want your child to participate or to which you do not want them exposed, and the nature of your objection.

Safety Procedures: All CTE teachers are required to teach and test all safety issues involved in their course of study and lab. Students must pass the safety test to continue in the CTE course.

ASSESSMENT

Class Expectations: Be on time to class. This is an active, hands-on, interactive lab setting and most assignments are completed during class time.

Students are responsible for their work areas, including the computers and drafting equipment. Students are responsible for following all GHS and CAD classroom rules.

Skills Assessment: Due to the limitations of equipment, homework will only occasionally be given. The majority of the grade will be from demonstrating standards to assigned drawings. For most assignments, corrections or reworking of drawings will be allowed to bring up grade. Pre-assessments will occasionally be given for a completion grade only. This is to assist the teacher in assessment of the coverage of material. Quizzes will also be assigned for determining understanding of unit.

Grading:

Daily classroom assignments and quizzes 75%

End of course exam 25%

A 93-100 B 85-92 C 75-84 D 70-74 F 0-69

Makeup work: A student must check with me to discuss the work they miss after an absence. Knox County policy states that students have up to three days after an absence to inquire about makeup work. I do understand that assignments may take longer to make up due to not being able to work at home. Students still must inquire within 3 days to determine missing assignment.

Student Expectations

**Internet Usage: Students are not allowed on the internet. The internet is available but should not be used. Extreme point deductions will apply to assignments if using the internet. Even if assignment is finished early the student is not allowed to be on the internet. Point deductions will continue to be taken off of finished assignment.**

Late work: No late work will be accepted if student has been using time to play on internet. A deduction of points will be given each day after due date. Typically 10 points per day late. Consideration if time has been used wisely.

Be on time to class. Our class is far away from some other the other classes, but 10 minutes proves to be enough time if socializing is kept to a minimum.

Teacher Expectations

Communication: The best way to reach me is by email, [amy.mitchell@knoxschools.org](mailto:amy.mitchell@knoxschools.org). I check each day and should respond after 3:45. You may also call the school (689-9130) and leave a message for me.

Parent portal: I will be updating grades at least once a week on parent portal. Please understand that later in the semester grades are worth more points because they may take 3 – 5 days or longer to draw.

Tutoring/Extra help: I am available for extra help if notified in advance. Please see me personally or email me to set up a tutoring or extra help session.

**This is to confirm that I the parent/guardian, have reviewed CAD 1 Syllabus with my child.**

**I have also read and understand that internet usage is not allowed unless approved for class work and will result in a deduction of points. If assignment is late due to internet usage, the assignment may not be accepted.**

**Just because teacher is *not* telling student to “get off the internet” does not mean usage is not being noted and points deducted.**

Parent Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date**\_\_\_\_\_\_\_\_**

Student Signature **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Date \_\_\_\_\_\_\_\_\_\_