The Henrico County Advanced Career Education (ACE) Centers offer training opportunities in the following areas for the 2016-2017 school year:

ADVANCED CAREER EDUCATION (ACE) CENTER at HERMITAGE
804-756-3020

Air Cond., Refrigeration & Plumbing	Graphic Communications
Automotive Technology	Greenhouse Management
Barbering	Landscaping
CAD - Computer-Aided Drafting	Legal Systems Administration
& 3D Animation	Medical Systems Administration
Cosmetology	Nurse Aide
Criminal Justice	Practical Nursing I
Culinary Arts	Precision Machining Technology
Diesel Technologies	Sports Medicine
Electricity & Cabling	Veterinary Assistant
Emergency Medical Technician	Web Development/Programming

ADVANCED CAREER EDUCATION (ACE) CENTER AT HIGHLAND SPRINGS
804- 328-4075

Auto Body Repair	Electricity & Cabling
Automotive Technology	High Tech Academy
Carpentry	Tourism Marketing and Sales
Computer Systems Technology	Masonry
Cosmetology	Nurse Aide
Criminal Justice	Pharmacy Technician
Early Childhood Education	Practical Nursing I
& Services	Radio Broadcasting & Journalism

Henrico County Public Schools does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in employment or provision of programs, services, or activities. Reasonable accommodation will be provided upon request for individuals with disabilities.

For additional information, please contact a counselor in your school or write or call:

Career and Technical Education Department
Henrico County Public Schools
3751-C Nine Mile Road, Henrico, VA 23223-0420
(804) 781-1810
HENRICOCTE.COM

HCPS The right to achieve. The support to succeed.

ACE ADVANCED CAREER EDUCATION CENTER at HERMITAGE & at HIGHLAND SPRINGS

CTE CAREER & TECHNICAL EDUCATION "OPTIONS THAT WORK FOR HENRICO"

7/16

Computer Aided Drafting

3D
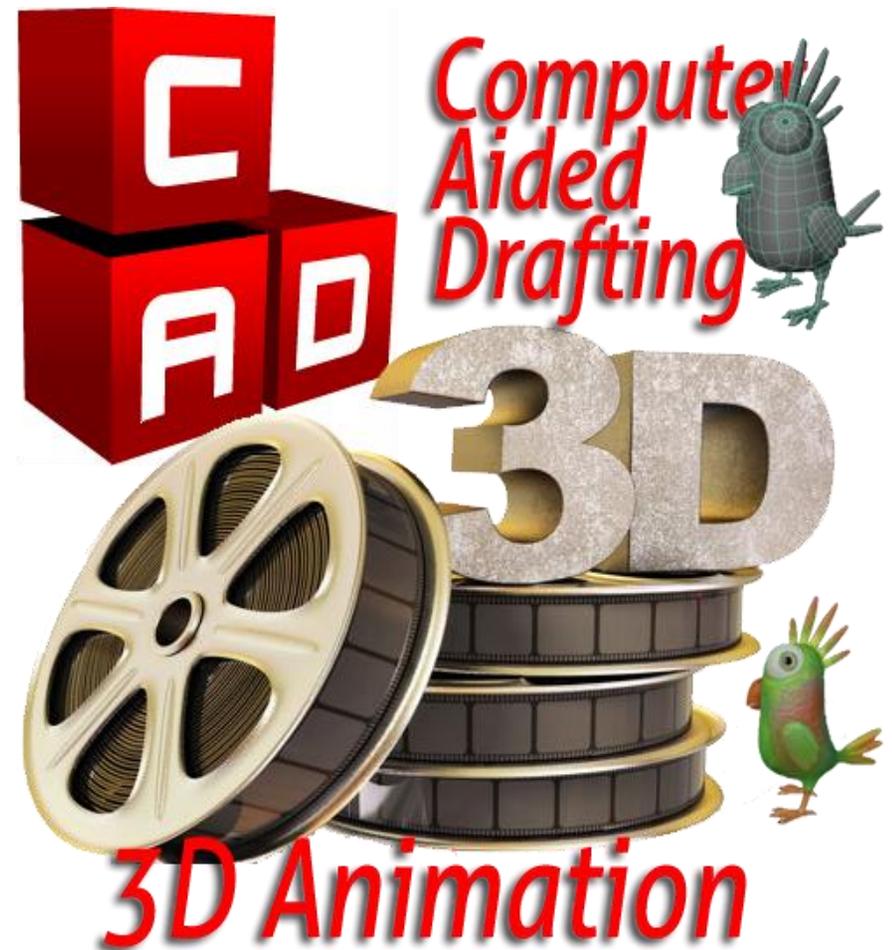
3D Animation

COMPUTER-AIDED DRAFTING
& 3D ANIMATION I   Elective
Course No. 8530
36 weeks - 3 credits

Prerequisite: Recommendation of Counselor

Animation and Gaming Design

In this new and exciting course, students will get a good understanding on how to create 3D models and animation. The 3D Studio Max will be the primary software used in this course. This exciting program will allow students to create animated designs and learn about 3D game development. This program is designed for aspiring game animators who have a passion for creating complex virtual 3D landscapes, creating models and arranging lighting textures, realistic environments and shadow effects. Students will be able to create photorealistic images and renders.

Course Outline

1. Construction of 3D mesh
2. Concept of vertices, edges, and faces
3. Mesh simplification and compression
4. 3D transformations
5. Modeling with polygons and point clouds
6. Understanding of 3D mesh file format
7. Materials
8. Photorealistic texture mapping
9. Color per vertex
10. Texture synthesis
11. Assessment of perceptual quality
12. Generation of 3D skeletons

COMPUTER-AIDED DRAFTING
& 3D ANIMATION II   Elective
Course No. 8531
36 weeks - 3 credits

Prerequisite: Computer-Aided Drafting & 3D Animation I
               or Approval of Counselor

Computer-Aided Drafting & 3D Animation II is a continuation of Computer-Aided Drafting & 3D Animation I. During the second year, students learn to solve more complex problems including design and problem-solving projects. Students often are assigned to design teams to learn to work together in a group to solve "real-world" problems. The students may be required to produce models of their projects and/or give written and oral reports. The CAD II students will spend most of their time working at CAD workstations, with only ten to fifteen percent on other duties such as board drafting, research, and model building. With teacher approval, second-year students may leave school during their second semester CAD class to work in a drafting-related industry. This practical work experience provides the students with "real-world" experience and may help them make important career decisions.

Major Units of Study

Computer-Aided Drafting is an integral part of each unit.

1) Special effects
2) Layers
3) Particles systems
4) Projects
5) Group projects
6) Game design
7) Project presentation

Creativity and imagination are aptitudes one should possess to take this course. Keen eyesight, steady hands, a high degree of dexterity and muscular coordination are helpful for success in this field. Neat working habits and a desire for accuracy are helpful traits.

Skill Connect Assessment:
     3D Visualization and Animation

It is to a student's advantage that he/she have a good knowledge of mathematics and art. Prior classes in drawing would be very helpful.

Employment Opportunities and Salaries

There are numerous industries in the area that employ drafters. Students completing the Computer-Aided Drafting course may qualify for many entry-level positions. Opportunities for advancement depend on the desire, ability, and ambition of the individual. Continuing education is recommended to increase career potential.

Wages in the field of drafting vary depending upon the position, company, industry, and locality. However, drafters receive better than average pay for their services. Drafting-related jobs in engineering, architecture, land surveying and building construction pay well.

This class is offered only at the ACE Center at Hermitage.