

Computer Aided Design Engineering Graphics



at the Frederick County Career & Technology Center

Career Options:

With a 4-year college degree: Civil Engineer, Mechanical Engineer, Structural Engineer, Computer Graphics Designer.

With a 2-year college: CAD Operator, CAD Designer, Engineering Assistant, Software Designer, Software Technician.

Direct entry into the workforce: CAD Operator

Overview: This program is for juniors and seniors who want to get a head start on an engineering degree. Student use a sophisticated Computer-aided Design (CAD) system, and AutoCAD software to develop skills in the production and organization of engineering drawings and plans. Competency is developed in sketching, design, layout, production and assembly drawings, linear and geometric tolerance and 3-D solid modeling. Students will also learn to install and configure computer hardware and software. All training in this program adheres to current industry guidelines and standards. Approximately 90% of class time is spent working on the computer.

This program is designed for the student who plans to enter college, a technical institution or industry in the engineering/computer design technology field.

Value Added:

- ❖ Students have tested for and received credits for CAD at several four-year Engineering colleges.
- ❖ Students may earn 12 articulated college credits in Frederick Community College's (FCC) CAD Program.
- ❖ Students may earn 6 articulated college credits in FCC's Construction Management Program. Concurrent enrollment in the FCPS/FCC Introduction to Construction Management class can provide an additional 3 credits at FCC.
- ❖ Students who are successful in this program can also receive college credits at Hagerstown Community College, Catonsville Community College and the Thompson Institute of Technology.
- ❖ Students are highly qualified for entrance into the ACE Mentoring program at Bechtel Corp.

Application Process: Current 10TH grade students should schedule a shadow visit through their home school counselor. Shadowing allows students to determine if the CAD program is appropriate for their career goals and allows the CAD instructor to evaluate the student's interest and aptitude. Students will receive an application to complete, which must also be signed by their guidance counselor and a parent/guardian. In addition to interest and aptitude, applicant's attendance and GPA are considered in the acceptance process.

For additional Information:

Log on to http://careertech.net/cad_engineering.htm

Contact the instructor at 240-236-8536

Program: **CAD/Engineering Graphics**

Post-Secondary Education: 4 year college degree

Careers: Civil Engineer, Mechanical Engineer, Structural Engineer, Computer Graphics Designer

This sample high school schedule prepares students to pursue a four year college degree in the computer aided design industry

Grade 9	Grade 10	Grade 11	Grade 12
English 9 Honors or Merit	English 10 Honors or Merit	English 11 Honors or Merit	AP English or English 12 Merit
Geometry	Algebra 2	Pre Calculus -or- Advanced Algebra w/Trig	AP Calculus I
Intro Chem/Physics Honors –or- Algebra Based Physics	Biology Honors	Physics	AP Physics
Government	Modern World History	American Studies 2	Workstudy or Elective
Physical Education/Health	Fine Art elective	CAD/Engineering Graphics IA 533072	CAD/Engineering Graphics 2A 534261
Technology Education Credit	Elective		
Foreign Language	Foreign Language	CAD/Engineering Graphics IB 533073	CAD/Engineering Graphics 2B 534271
Elective	Elective		

Color Key

	Elective Courses
	Required Courses for Graduation
	CTE Completer Courses



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What are You Doing?



Program: **CAD/Engineering Graphics**

Post-Secondary Education: 2 year technical school/AA degree, apprenticeship program or military training

Careers: CAD Operator, CAD Designer, Engineering Assistant, Software Designer

This sample high school schedule prepares students to continue their training at a community college, technical school, or in the military.

Grade 9	Grade 10	Grade 11	Grade 12
English 9 Honors or Merit	English 10 Honors or Merit	English 11 Honors or Merit	AP English or English 12 Merit
Algebra 2	Geometry	Intro to Calculus	Calculus 1
Intro Chem/Physics Honors or Merit	Biology Honors or Merit	Physics elective	Work study or Elective
Government	Modern World History	American Studies 2	Work study or Elective
Physical Education/Health	Fine Art elective	CAD/Engineering Graphics IA 533072	CAD/Engineering Graphics 2A 534261
Technology Education Credit	Elective		
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What are You Doing?



Program: **CAD/Engineering Graphics**

Post-Secondary Education: none required

Careers: CAD Operator

This sample high school schedule prepares students to enter directly into the workforce in the Computer Aided Design industry

Grade 9	Grade 10	Grade 11	Grade 12
English 9 Honors or Merit	English 10 Honors or Merit	English 11 Honors or Merit	AP English or English 12 Merit
Algebra IA	Geometry	Applied Algebra/Geometry	Contemporary Math
Intro Chem/Physics	Biology	Environmental Science	Work study or Elective
Government	Modern World History	American Studies 2	Work study or Elective
Physical Education/Health	Fine Art elective	CAD/Engineering Graphics IA 533072	CAD/Engineering Graphics 2A 534261
Algebra IB	Technology Education Credit		
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