

# PROGRAM OF STUDY: Engineering Drafting and Design



This Program of Study may serve as a graduation guide for the next four plus years, along with other career planning and educational materials. Courses listed in this model may include recommended coursework and should be individualized to students' educational and career goals. Each graduation plan needs to meet minimum high school graduation requirements. Dual Enrollment courses can be high school academic and/or career technical education courses.

SECONDARY:					POSTSECONDARY:		
COURSE/ GRADE	NINTH	TENTH	ELEVENTH	TWELFTH	TCC	DIPLOMA OR AAS	BACHELOR OF SCIENCE
ENGLISH	9 <sup>th</sup> grade Lit/ Composition	10 <sup>th</sup> grade Lit/ Composition	American Lit/ Composition	World Lit/ Composition / British Lit	<b>Entrance/Exit Point</b>  <b>DA31 Drafters Assistant Certificate</b>  <a href="#">Find the campus for the TCC options</a>	<b>Entrance/Exit Point</b>  If the student completes the DA31 TCC leads to DT12 Drafting Technology Diploma and DT13 Drafting Technology AAS.  <a href="#">Find the campus for the Diploma, Degree options</a>	<b>Entrance/Exit Point</b>  The University System of Georgia offers students' higher education options at 30 institutions throughout the state, providing a wide range of academic programming including certificates and associate, baccalaureate, masters, doctoral and professional degrees.  <a href="https://apps.ds.usg.edu/ords/?p=118:1:0">https://apps.ds.usg.edu/ords/?p=118:1:0</a>
MATHEMATICS	Coordinate Algebra / Algebra I	Analytic Geometry / Geometry	Advanced Algebra / Algebra II	Pre-calculus			
SCIENCE	Physical Science	Biology	Chemistry	AP Physics - Engineering			
SOCIAL STUDIES	World History	Psychology	US History	Government (½ unit) Economics (½ unit)			
PATHWAY COMPLETER	<b>Introduction to Drafting and Design</b>	<b>Survey Engineering Graphics</b>	<b>3-D Modeling and Analysis</b>	Another course in focus area, Work-Based Learning, or Youth Apprenticeship			
<b>Industry Recognized Credential (Pathway Completer)</b>		<a href="#">Visit the End of Pathway Assessment Page</a> (see note below)					
<b>Required/ Selective Electives</b>	Health & Personal Fitness (can be taken in grades 9-12)	Introduction to Digital Technology	Physics	Financial Literacy			
	<b>Modern Language/Latin</b> 2 units required for admissions to Georgia University System Colleges/Universities For a listing of Modern Language/Latin courses offered at your high school, please contact your advisor, counselor, or curriculum handbook.		<b>Other Electives</b> For a listing of other elective courses offered at your high school, please check with your advisor, counselor, or curriculum handbook.				

**NOTE:** Students have many options to **ENTER** and **EXIT** from their academic studies into the workforce. When a student graduates from high school, they are eligible to choose one of many **ENTRANCE POINT** options: **1.** Enroll in either a 2 or 4 year post-secondary program; **2.** Enroll in an apprenticeship program or the military; or **3.** Enter the workforce using technical skills learned in high school. When a student finishes a 2- or 4-year degree program, they may choose to **EXIT** and **1.** Enroll in an apprenticeship program or the military; **2.** Enroll in a professional university degree program; or **3.** Enter the workforce using technical skills learned.

**Engineering Drafting and Design Career Pathway Completers - Industry Credentialing for High School Students**

Upon completion of sequenced courses in the Engineering Drafting and Design Pathway, students are eligible to complete the Industry-Recognized student credential for fulfillment of the End of Pathway Assessment. Secondary students completing the Engineering Drafting and Design pathway will be able to sit for the National Industry Credentialed assessment offered on-line from ADDA, Autodesk, CSWA, NOCTI, and SkillsUSA. Once mastery is reached, students will receive recognition for completion and use this credential in conjunction with their job or continuing training. For specific assessment information, refer to: <http://bit.ly/STEMGA>.

## Sample In Demand Careers in Georgia

Occupation Specialties	Level of Education Needed	Georgia Average Salary	Annual Average Openings in Georgia	2014 – 2024 Employment Outlook
Mechanical Engineers	Bachelor's Degree	\$82,653	236	In Demand, High Skill
Architectural Drafters	Bachelor's Degree	\$51,854	34	In Demand, High Skill
Electronic Drafters	Associates Degree	\$68,115	11	In Demand, High Skill
Civil Engineering Technicians	Postsecondary Certificate	\$46,692	157	In Demand, High Skill

[Data link here.](#)

Go to [GAfutures at www.gafutures.org](http://www.gafutures.org) for more information about your education and career planning, including valuable financial information (grants and scholarships including HOPE Program, grants and loans, FAFSA, and CSS forms).

<b>Career Enhancement Opportunities</b>	<b>Career-Related Education Activities</b> <ul style="list-style-type: none"> <li>Career Awareness</li> <li>Career Exploration</li> <li>Instructional Related</li> <li>Connecting                             <ul style="list-style-type: none"> <li>Work-Based Learning</li> <li>Employability Skill Dev.</li> <li>Cooperative Education</li> <li>Internship</li> <li>Youth Apprenticeship</li> <li>Clinicals</li> </ul> </li> </ul>	<b>Postsecondary Options:</b> <ul style="list-style-type: none"> <li>4-Year Universities/Colleges</li> <li>2-Year Colleges</li> <li>Technical Colleges</li> <li>State Registered Apprenticeships</li> <li>Special Purpose Schools</li> <li>On-the-Job Training</li> <li>Military</li> </ul>	<b>Earning Postsecondary Credits While in High School</b> <ul style="list-style-type: none"> <li>Dual Enrollment Program</li> <li>Earn postsecondary credit while in high school</li> <li>You can complete                             <ul style="list-style-type: none"> <li>Industry Credential</li> <li>Technical Certificate of Credit (TCC)</li> <li>Associates of Applied Science Degree</li> <li>Bachelor's Degree</li> </ul> </li> <li>Who can help?                             <ul style="list-style-type: none"> <li>Parents</li> <li>School Counselor</li> <li>Advisor</li> </ul> </li> </ul>
	<b>Postsecondary Transition</b> <ul style="list-style-type: none"> <li>University System of Georgia Institutions: Admissions Testing                             <ul style="list-style-type: none"> <li>ACT or SAT</li> <li>For More Information:                                     <ul style="list-style-type: none"> <li>Contact the institution of your choice OR</li> </ul> </li> </ul> </li> <li>Technical College System of Georgia                             <ul style="list-style-type: none"> <li>Placement Exam</li> </ul> </li> <li>United States Military                             <ul style="list-style-type: none"> <li>ASVAB Assessment</li> </ul> </li> <li>Use BRIDGE Law platform to inform decisions on postsecondary opportunities</li> <li>Dual Enrollment                             <ul style="list-style-type: none"> <li>Earning high school course credits while taking college courses</li> </ul> </li> </ul>		
<b>Related Pathway Occupations</b>		<b>Other Related Occupations</b>	
<ul style="list-style-type: none"> <li>Electronic Drafters</li> <li>Architectural Drafters</li> <li>Mechanical Drafters</li> <li>Civil Drafters</li> <li>Electrical Drafters</li> <li>Cartographers</li> <li>Civil Engineering Technicians</li> </ul>		<ul style="list-style-type: none"> <li>Aerospace Engineers</li> <li>Agricultural Engineers</li> <li>Architectural Drafters</li> <li>Biochemical Engineers</li> <li>Cost Estimators</li> <li>Fuel Cell Engineers</li> <li>Materials Engineers</li> </ul>	
*ONET Online			

## Engineering Drafting and Design Pathway Description

Engineering Drafting & Design occupations translate ideas from design layouts, specifications, rough sketches, and calculations of engineers and architects into working drawings, maps, plans, and illustrations that are used in making products. They prepare 3D computer models and 2D drawings using computer-aided design and drafting (CADD) and 3D modeling systems. Workers may enjoy new systems such as building information modeling (BIM) and product data management (PDM).

They perform design and drafting work in mechanical, electrical/electronic, structural, architectural, civil, piping, and technical illustration fields. They make mathematical calculations related to the above fields using algebra, trigonometry, plane, and solid geometry, applied mechanics, strength of materials and basic physics. These occupations usually require working closely with both professional and nonprofessional people. It is essential they have good communication skills.

Degrees are not specifically in the Engineering Drafting and Design area. They are in manufacturing, mechanical, industrial, electrical, engineering, engineering technology, or engineering technician programs.

Employers prefer applicants who have completed postsecondary education in drafting, typically an associate degree from a technical institute or community college. Drafters who specialize in architecture and engineering may need a higher degree, such as a bachelor's degree. Developments in new technology are causing entry-level requirements to rise. An associate degree is the typical level of education needed to enter the occupation. In addition, drafters need skills from academic programs so that they may move into the work of designing directly for professionals such as engineers or architects.