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:**

<table>
<thead>
<tr>
<th>COURSE/GRADE</th>
<th>NINTH</th>
<th>TENTH</th>
<th>ELEVENTH</th>
<th>TWELFTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGLISH</td>
<td>9th grade Lit/ Composition</td>
<td>10th grade Lit/ Composition</td>
<td>American Lit/ Composition</td>
<td>World Lit/ Composition / British Lit</td>
</tr>
<tr>
<td>MATHEMATICS</td>
<td>Coordinate Algebra / Algebra I</td>
<td>Analytic Geometry / Geometry</td>
<td>Advanced Algebra / Algebra II</td>
<td>Pre-calculus</td>
</tr>
<tr>
<td>SCIENCE</td>
<td>Physical Science</td>
<td>Biology</td>
<td>Chemistry</td>
<td>Physics</td>
</tr>
<tr>
<td>SOCIAL STUDIES</td>
<td>World History</td>
<td>Psychology</td>
<td>US History</td>
<td>Government (½ unit) Economics (½ unit)</td>
</tr>
<tr>
<td>PATHWAY COMPLETER</td>
<td>Introduction to Drafting and Design</td>
<td>Survey of Engineering Graphics</td>
<td>3-D Modeling and Analysis</td>
<td>Another course in focus area, Work-Based Learning, or Youth Apprenticeship</td>
</tr>
</tbody>
</table>

**Industry Recognized Credential (Pathway Completer)**

- Health & Personal Fitness (can be taken in grades 9-12)
- Financial Literacy
- Modern Language/Latin
  - 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.
- Other Electives
  - For a listing of other elective courses offered at your high school, please check with your advisor, counselor, or curriculum handbook.

**Postsecondary Transition**
- University System of Georgia Institutions: Admissions Testing
  - ACT or SAT
  - For More Information:
  - Contact the institution of your choice
- Technical College System of Georgia
  - Placement Exam
  - United States Military
  - ASVAB Assessment
  - Use BRIDGE Law platform to inform decisions on postsecondary opportunities
  - Dual Enrollment
  - Earning high school course credits while taking college courses

**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](http://bit.ly/STEMGA).

**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. 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.

Employers prefer applicants who have completed postsecondary education in drafting, typically an associate degree from a technical institute or community college.

**Sample In Demand Careers in Georgia**

<table>
<thead>
<tr>
<th>Occupation Specialties</th>
<th>Level of Education Needed</th>
<th>Georgia Average Salary</th>
<th>Annual Average Openings in Georgia</th>
<th>2018 – 2028 Employment Outlook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering Technicians</td>
<td>Postsecondary Certificate</td>
<td>$44,290</td>
<td>160</td>
<td>In Demand, High Skill</td>
</tr>
<tr>
<td>Mechanical Drafter</td>
<td>Associate Degree</td>
<td>$50,560</td>
<td>80</td>
<td>In Demand, High Skill</td>
</tr>
<tr>
<td>Architectural Drafters</td>
<td>Bachelor’s Degree</td>
<td>$52,590</td>
<td>320</td>
<td>In Demand, High Skill</td>
</tr>
<tr>
<td>Mechanical Engineers</td>
<td>Bachelor’s Degree</td>
<td>$86,560</td>
<td>400</td>
<td>In Demand, High Skill</td>
</tr>
</tbody>
</table>

**Related Pathway Occupations**

- All Drafting Occupations
- Aerospace Engineers
- Agricultural Engineers
- Electrical & Electronics Drafters
- Civil Engineering Technicians
- Cartographers

**Other Related Occupations**

- Aerospace Engineers
- Agricultural Engineers
- Electrical & Electronics Drafters
- Civil Engineering Technicians
- Cartographers

O*NET Online
# PROGRAM OF STUDY:

**Engineering Drafting and Design**

## PROGRAM OF STUDY:


### ENTRANCE POINT

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.

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### POSTSECONDARY:

#### TCC

- **DA31 Drafters Assistant Certificate**
- **DFTG 1101 CAD Fundamentals**
- **DFTG 1103 Multiview/BASIC**
- **Dimensioning**
- **Occupational Elective**

#### DIPLOMA OR AAS

Completion of DA31 Drafters Assistant Certificate plus the following courses will earn the DT12 Drafting Technology Diploma:

- **ENGL1010 Fundamentals of English**
- **ENGL1005 Applied Technical Communication**
- **EMPL1000 Interpersonal Relations & Professional Development**

One of the Following:

- **MATH1012 Foundations of Mathematics**
- **MATH1013 Algebraic Concepts**
- **MATH 1005 Applied Technical Mathematics**

Occupational Courses:

- One Math Course from the Following:
  - **DFTG1015 Practical Mathematics for Drafting or MATH 1015 Geometry & Trigonometry or MCHT 1013 Machine Tool Math**
- Choose One of the Following Specializations:
  - **Mechanical Drafting:**
    - **DFTG 1105 3D Mechanical Modeling**
    - **DFTG 1109 Auxiliary Views/Surface Development**
    - **DFTG 1107 Advanced Dimensioning/Sectional Views**
    - **DFTG 1111 Fasteners**
    - **DFTG 1113 Assembly Drawings**
  - **Guided Elective - Choose any Trade and Tech., BUSN, CIST, COMP, IDSY, MATH or MGMT Course Or**

  - **Architectural Drafting Specialization:**
    - **DFTG 1125 Architectural Fundamentals**
    - **DFTG 1127 Architectural 3D Modeling**
    - **DFTG 1123 Residential Drawing I**
    - **DFTG 1131 Residential Drawing II**
    - **DFTG 1133 Commercial Drawing I**
    - **Guided Elective - Choose any Trade and Tech., BUSN, CIST, COMP, IDSY, MATH or MGMT Course or**

  - **Civil Technology Specialization:**
    - **IDSY, MATH or MGMT Course or**

#### BACHELOR OF SCIENCE

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. [https://apps.ds.usg.edu/or ds/?p=118:1:0](https://apps.ds.usg.edu/or ds/?p=118:1:0)

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### Career-Related Education Activities

- Career Awareness
- Career Exploration
- Instructional Related
- Connecting
- Work-Based Learning
- Employability Skill Dev.
- Cooperative Education
- Internship
- Youth Apprenticeship
- Clinicals

### Postsecondary Options:

- 4-Year Universities/Colleges
- 2-Year Colleges
- Technical Colleges
- State Registered Apprenticeships
- Special Purpose Schools
- On-the-Job Training
- Military

### Postsecondary Credits While in High School

- Dual Enrollment Program
- Earn postsecondary credit while in high school
- You can complete
  - Industry Credential
  - Technical Certificate of Credit (TCC)
  - Associates of Applied Science Degree
  - Bachelor’s Degree
  - Who can help?
  - Parents
  - School Counselor
  - Advisor

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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).

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