PROGRAM OF STUDY: Engineering and Technology

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**	**Entrance/Exit Point**	**TCC**	**Entrance/Exit Point**	**DIPLOMA OR AAS**	**Entrance/Exit Point**	**BACHELOR OF SCIENCE**
ENGLISH	9th grade Lit/ Composition	10th grade Lit/ Composition	American Lit/ Composition	World Lit/ Composition / British Lit						
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	**Foundations of Engineering and Technology**	**Engineering Concepts**	**Engineering Applications**	Another course in focus area, Work-Based Learning, or Youth Apprenticeship		**EBT1 Engineering Technology Basics Certificate** Find the campus for the TCC options		The EF11 TCC leads to CEE3 Civil Engineering Technology AAS as well as other engineering-related diplomas and degrees. Find the campus for the Diploma, Degree options		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/ords/f?p=118:1:0:
Industry Recognized Credential (Pathway Completer)	Visit the End of Pathway Assessment Page (see note below)									
Required/ Selective Electives	Health & Personal Fitness (can be taken in grades 9-12)	Introduction to Digital Technology	Physics	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.							

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 and Technology Career Pathway Completers - Industry Credentialing for High School Students

Upon completion of sequenced courses in the Engineering and Technology Pathway, students are eligible to complete the Industry-Recognized student credential for fulfillment of the End of Pathway Assessment. Secondary students completing the Engineering and Technology pathway will be able to sit for the National Industry Credentialed assessment offered on-line from 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
Aerospace Engineers	Bachelor's Degree	$108,892	210	In Demand, High Skill, High Wage
Electrical Engineers	Bachelor's Degree	$88,000	345	In Demand, High Skill
Avionics Technicians	Associates Degree	$63,088	146	In Demand, High Skill
Electro-Mechanical Technicians	Associates Degree	$65,516	38	High Skill, High Wage

Data link here.

Go to GAfutures at 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).

Career Enhancement Opportunities

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

Earning 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

Postsecondary Transition

- University System of Georgia Institutions: Admissions Testing
  - ACT or SAT
  - For More Information:
    - Contact the institution of your choice OR
- 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

Related Pathway Occupations	Other Related Occupations
• All Engineers and Engineering Technologists	• Civil Drafters • Cost Estimators • Electrical & Electronics Drafters • Mapping Technicians • Quality Control Systems Managers • Anthropologists • Archeologists

*ONET Online

Engineering and Technology Pathway Description

Today's professionals in the engineering and technology field continue to revolutionize the way we live. They design, produce, operate, and maintain a variety of equipment and services we use in our everyday lives. The rapidly changing engineering and technology field requires a broad educational background and a lifelong commitment to learning new and specialized information.

Overall job opportunities in engineering and technology are expected to be good but will vary by specialty. Technology and technology related employment will continue to increase as technology changes and new technology is invented.

Engineers may work in design and development, testing, production, or maintenance. Almost all entry-level engineering jobs require at least a bachelor's degree, and most engineers specialize in a certain field. Those interested in an occupation in the engineering field should be creative, inquisitive, analytical and detail oriented. They should also have excellent communication skills because working as part of a team and working with others outside the engineering field is often required.

Engineering is considered a nontraditional field for women; therefore, it is important that female students investigate different engineering opportunities where salaries are higher than in many traditional occupations for females. Most science, technology, engineering, and math related occupations are nontraditional occupations for young women. Both young men and women should explore all their options for future employment.

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