

Program of Study: Electronics



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: Electronics					Postsecondary			
Course/Grade	Ninth	Tenth	Eleventh	Twelfth	TCC	Diploma or AAS	Bachelor of Science	
English	9 th grade Lit/ Composition	10 th grade Lit/ Composition	American Lit/ Composition	World Lit/Composition / British Lit	Entrance or Exit Point	BE 41 Basic Electronics Assembler TCC - MATH 1111 - ELCR 1005 Soldering Technology - ELCR 1010 Direct Current Circuits - ELCR 1020 Alternating Current Circuits - ELCR 1040 Digital & Microprocessor Fundamentals	Entrance or Exit Point	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.usg.edu/ords/?p=118:1:0:::
Mathematics	Coordinate Algebra / Algebra I	Analytic Geometry / Geometry	Advanced Algebra / Algebra II	Pre-calculus				
Science	Physical Science	Biology	Chemistry	AP Physics - Engineering				
Social Studies	Psychology	World History	US History	Government (½ unit) Economics (½ unit)				
Pathway Completer	Foundations of Electronics	Advanced AC and DC Circuits	Digital Electronics	Work-Based Learning, Youth Apprenticeship, or Capstone Project				
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)	Spanish I	Physics	Introduction to Digital Technology				
	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.

Electronics Career Pathway Completers - Industry Credentialing for High School Students

Upon completion of sequenced courses in the Electronics Career Pathway, students are eligible to complete the Industry-Recognized student credential for fulfillment of the End of Pathway Assessment. Secondary students completing the Electronics 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 High Demand Careers in Georgia

Occupation Specialties	Level of Education Needed	Georgia Average Salary	Annual Average Openings in Georgia	2014 – 2024 Employment Outlook
Electronics Engineers	Bachelor's Degree	\$91,908	117	High Demand, High Skill
Photonics Engineers	Bachelor's Degree	\$91,841	53	High Demand, High Skill
Electrical Engineering Technicians	Postsecondary Credentials	\$60,030	124	High Demand, High Skill

GDOL Labor Market Explorer

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	<p>Career-Related Education Activities</p> <ul style="list-style-type: none"> <input type="checkbox"/> Career Awareness <input type="checkbox"/> Career Exploration <input type="checkbox"/> Instructional Related <input type="checkbox"/> Connecting <input type="checkbox"/> Work-Based Learning <ul style="list-style-type: none"> • Employability Skill Dev. • Cooperative Education • Internship • Youth Apprenticeship • Clinicals 	<p>Postsecondary Options:</p> <ul style="list-style-type: none"> • 4-Year Universities/Colleges • 2-Year Colleges • Technical Colleges • State Registered Apprenticeships • Special Purpose Schools • On-the-Job Training • Military 	<p>Earning Postsecondary Credits While in High School</p> <p>A vital way to get ahead and realize you can pass college courses is by earning postsecondary credits as a high school student. Georgia offers a dual credit program titled Dual Enrollment. You need to talk with your parents, school counselor, or advisor about the proper courses to take each year in high school and dual credit.</p> <p>Students completing the course work in this Plan, will have earned/completed an Industry Credential, Technical Certificate of Credit (TCC), Associates of Applied Science Degree, and/or Bachelor's Degree.</p>
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Postsecondary Transition

- Students who will continue their education in a Program of Study at one of the University System of Georgia institutions should prepare to take the ACT or SAT for admissions. Tests for admissions may vary from institution to institution. Contact the selected institution for specific testing information. Additional admissions information can be found at Staying On Course. (www.usg.edu/assets/student_affairs/documents/Staying_on_Course.pdf)
- Students who will continue their education in a Program of Study at one of the Technical College System of Georgia institutions should prepare to complete a placement exam.
- Students who will continue their education and training in the US Military should take the ASVAB assessment.
- Students should utilize electronic college and career databases to select the most appropriate postsecondary opportunities to match their selected career field, including registered apprenticeships.
- Georgia's dual-credit programs have been combined into one program entitled Dual Enrollment, in which high school students may earn their high school course credits while taking college courses.

Related Pathway Occupations	Other Related Occupations
<ul style="list-style-type: none"> • Electrical & Electronic Engineering Technicians • Electrical & Electronics Drafters • Electrical Drafters • Electrical Engineering Technicians • Electrical Drafters • Electrical Engineering Technologists • Electro-Mechanical Technicians 	<ul style="list-style-type: none"> • Aerospace Engineers • Mechanical Engineers • Mechanical Technicians • Industrial Engineering Technicians <p style="text-align: right;">*ONET Online</p>

Electrical Pathway Description

The electronics industry is a fast-growing industry with job opportunities in many fields, including biomedical engineering, informatics and engineering, software engineering, mechatronics and robotics, electronics and micro-engineering, computer systems engineering, electrical and electronic engineering and information technology, and telecommunications.

Job duties in the electronics industry are varied. A professional engineer may develop concepts and systems, implement and manage projects, or design and manage production. An electrical or electronic technician may create and test prototypes, manage and maintain systems, install, test, and maintain various types of electrical equipment.

Skills and knowledge required for those in the electronics field include science, technology, engineering and math, languages, speaking and presentation skills, imagination, creativity, problem solving and teamwork skills. The electronics industry offers challenging, interesting and lifelong careers in a growth industry. The industry also offers excellent salary and working conditions. Occupations will be generated mostly by replacement. Therefore, competition for employment will be keen. Projected growth is between 2% and 9% from 2010-2020. For example, employment of electrical and electronic engineering technicians is expected to grow 2% from 2010 to 2020, resulting in little or no change for this occupation. Projections for electrical and electronics engineers, with a 4-year degree, increase to 6% from 2010 to 2020, but is still slower than the average for all occupations (percentiles represent national growth). Those who are the most qualified will have the better chance of being hired. The amount of education and training will become a critical factor in the hiring process.