

# PROGRAM OF STUDY: Energy & Power: Gen., Trans. & Dist.



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>E111 TCC Energy Industry Fundamentals</b>  <a href="#">Find the campus for the TCC options</a>	If the student completes E111 – Energy Industry Fundamentals (Industrial Systems Track) TCC leads to IST4 – Industrial Systems Technology diploma or IS13 – Industrial Systems Technology degree.	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	Physics			
SOCIAL STUDIES	World History	Psychology	US History	Government (½ unit) Economics (½ unit)			
PATHWAY COMPLETER	<b>Foundations of Energy Technologies</b>	<b>Energy &amp; Power: Generation, Transmission, &amp; Distribution</b>	<b>Energy Systems Applications</b>	Another course in focus area, Work-Based Learning, or Youth Apprenticeship			
Industry Recognized Credential (Pathway Completer)		<a href="#">Visit the End of Pathway Assessment Page</a> (see note below)					
Required/ Selective Electives	Health & Personal Fitness (can be taken in grades 9-12)	Environmental Science	Computer Science Principles	Statistics			
	<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.

**Energy and Power: Generation, Transmission and Distribution Career Pathway Completers - Industry Credentialing for High School Students**

Upon completion of sequenced courses in the Energy and Power: Generation, Transmission and Distribution Pathway, students are eligible to complete the Industry-Recognized student credential for fulfillment of the End of Pathway Assessment. Secondary students completing the Energy and Power: Generation, Transmission and Distribution pathway will be able to sit for the National Industry Credentialed assessment offered on-line from NOCTI and Skills USA. 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/GAenergy>

## Sample In Demand Careers in Georgia

Occupation Specialties	Level of Education Needed	Georgia Average Salary	Annual Average Openings in Georgia	2014 – 2024 Employment Outlook
Electrical Engineers	Bachelor's Degree	\$90,445	120	In Demand, High Skill, High Wage
Industrial Production Managers	Bachelor's Degree	\$96,979	123	In Demand, High Skill, High Wage
Electrical Power-Line Installers and Repairers	Some postsecondary, no degree required	\$53,334	630	In Demand, High Skill
Geothermal Technicians	Some postsecondary, no degree required	\$36,821	60	High Skill, In Demand

[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                             <ul style="list-style-type: none"> <li>Earn postsecondary credit while in high school</li> </ul> </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>Engineering Technicians</li> <li>Petroleum Engineers</li> <li>Pipefitters/ Pipe Layers</li> <li>Meteorologists</li> <li>Mining Engineers</li> <li>Hazardous Waste Technicians</li> <li>Value/Regulator Repairers</li> <li>Geologists</li> </ul>		<ul style="list-style-type: none"> <li>Telecommunication Technicians</li> <li>Equipment, Cable, Line Repairers/Installers</li> <li>Power Plant Operators</li> <li>Electronics Technicians</li> <li>Engineering Technicians</li> </ul>	
*ONET Online			

## Energy & Power: Generation, Transmission and Distribution Pathway Description

The United States is a leader in the production and supply of energy and is one of the world's largest energy consumers. The energy industry is the third largest industry in the United States. U.S. energy companies produce oil, natural gas, coal, nuclear power, renewable energy, and electricity services, as well as supply energy and electricity technologies worldwide. Energy and electricity equipment made in the U.S. dominates the domestic market and commands a strong market share abroad. Growing consumer demand and world class innovation – combined with a competitive workforce and supply chain capable of building, installing, and servicing all energy technologies – makes the United States the world's most attractive market.

There are many people who help conserve, generate energy, transport it and connect it to the things we use every day. There are also those creating new methods of energy generation. Working in energy can mean working for utilities, for gas and oil companies, for government and research groups, for energy education or environmental regulation agencies, for nonprofit energy awareness and conservation organizations or for many other energy related agencies.

Most of the electricity produced in the United States comes from nonrenewable sources such as coal, petroleum, and natural gas. Renewable power generation, from sources such as wind, water, solar and biomass, are becoming more common. Research and development in this area is ongoing, therefore, the job opportunities in renewable energy will continue to increase. Overall employment of line installers and repairers is expected to grow 13 percent from 2014 to 2024, about as fast as the average for all occupations. Job opportunities should be best for those who have excellent technical and mechanical skills. Jobs in the energy field require varying levels of education, from work experience to college and advanced degrees.