

## Student Plan of Study – Ag Mechanics & Electrical Systems



Richard Woods, Georgia's School Superintendent  
"Educating Georgia's Future"

Name \_\_\_\_\_ Date \_\_\_\_\_ School \_\_\_\_\_

Parent/Guardian Signature \_\_\_\_\_ Date \_\_\_\_\_ Advisor/Counselor Signature \_\_\_\_\_ Date \_\_\_\_\_

**Current Area of Interest: Agriculture, Food & Natural Resources/Ag Mechanics & Electrical Systems - This PLAN OF STUDY should serve as a guide for the next four years. Courses listed in this plan are only recommended coursework and should be individualized to meet each student's educational and career goals. All plans will meet minimum high school graduation requirements. Applicants to the University System of Georgia and the Technical College System of Georgia institutions should be advised that meeting minimum requirements will not guarantee admission. Postsecondary institutions may set additional requirements.**

Grade Level	I. English/Language Arts Total 4 credits	II. Math Total 4 credits	III. Science Total 4 credits	IV. Social Studies Total 3 credits	V. Health/Personal Fitness Total 1 credit	VII. Possible electives in additional pathways (students should check the local course description catalog for these and other electives) Total 4 credits
9	9 <sup>th</sup> Literature & Composition or Approved Dual Enrollment Course  1 credit  Credit Earned <input type="checkbox"/>	1 CCGPS Cord Algebra 2 CCGPS Analytic Geometry 3 CCGPS Accel Cord Algebra/Analytic Geometry 4 CCGPS Accel Analytic Geometry B/Adv. Algebra 1 credit *  Credit Earned <input type="checkbox"/>	Biology or Approved Dual Enrollment Course  1 credit *  Credit Earned <input type="checkbox"/>	American Government/Civics or AP Government/ Politics US or Approved Dual Enrollment Course  ½ credit  Credit Earned <input type="checkbox"/>	Health ½ credit Credit Earned <input type="checkbox"/> Personal Fitness ½ credit Credit Earned <input type="checkbox"/> <b>VI. CTAE Pathway Total 3 credits</b>	<b>Advanced Academic Pathways</b> English/Language Arts, Math, Science, Social Studies  An advanced academic pathway may be followed in any one of the content subjects listed above. Upon graduation, students earn an advanced academic pathway when they complete the required coursework to include at least one AP or one IB or one <a href="#">Dual Enrollment</a> course. An advanced academic pathway should also include at least two credits in one world language. AP, Dual Enrollment and <a href="#">Georgia Virtual School</a> courses may be available.
10	10 <sup>th</sup> Literature & Composition or World Literature & Composition or Approved Dual Enrollment Course  1 credit Credit Earned <input type="checkbox"/>	1 CCGPS Analytic Geometry 2 CCGPS Advanced Algebra 3 CCGPS Accel Analytic Geometry/Adv. Algebra 4 CCGPS Pre-Calculus 1 credit * Credit Earned <input type="checkbox"/>	Physical Science or AP Physics or Approved Dual Enrollment Course  1 credit * Credit Earned <input type="checkbox"/>	World History or AP World History or Approved Dual Enrollment Course  1 credit Credit Earned <input type="checkbox"/>	02.47100 Basic Ag Science or Approved Dual Enrollment Course  1 credit Credit Earned <input type="checkbox"/>	<b>World Language Pathways</b>  **Two credits are required for admissions to University System Institutions. For a listing of world language courses offered at your high school, please check with your advisor, counselor, or local course description catalog. A world language pathway may be followed in any of the world language areas included in the state list of approved courses. Upon graduation, students earn a world language pathway when they complete three credits in one language. The third course may reflect an AP, IB or <a href="#">Dual Enrollment</a> designation. <a href="#">Georgia Virtual School</a> and ACCEL courses may be available.
11	American Literature/Composition or AP English Language & Composition/American Lit or Approved Dual Enrollment Course 1 credit Credit Earned <input type="checkbox"/>	1 CCGPS Adv. Algebra 2 CCGPS Pre-Calculus 3 CCGPS Accel Pre-Cal 4 CCGPS Cal or AP Cal  1 credit * Credit Earned <input type="checkbox"/>	Chemistry or Environmental Science or Earth Systems or AP/IB or Approved Dual Enrollment Course 1 credit * Credit Earned <input type="checkbox"/>	United States History or AP US History or IB History of the Americas or Approved Dual Enrollment Course  1 credit Credit Earned <input type="checkbox"/>	01.42100 Ag Mechanics 1 or Approved Dual Enrollment Course  1 credit Credit Earned <input type="checkbox"/>	<b>Fine Arts/Performing Arts Pathways</b> Visual Arts, Dance, Music, Journalism, Theatre  A fine arts pathway may be followed in any one of the five areas listed above. Upon graduation, students complete a fine arts/performing arts pathway when three courses have been successfully completed in any one of the five areas. A student should consult a counselor or advisor for related coursework. AP, <a href="#">Dual Enrollment</a> and <a href="#">Georgia Virtual School</a> courses may be available.
<b>At the end of the 11<sup>th</sup> grade, students planning to enter a University System of Georgia Institution or Technical College System of Georgia Institution should take the appropriate admissions test (SAT, ACT, Compass).</b>						
12	Advanced Composition or British Literature or AP/IB English Literature & Composition or Approved Dual Enrollment Course  1 credit Credit Earned <input type="checkbox"/>	CCGPS Pre-Cal or Adv Math Decision Making or Math of Ind & Govern or AP Statistics or IB Math or Approved Dual Enrollment Course 1 credit * Credit Earned <input type="checkbox"/>	Any other of the previous courses or Zoology or Ecology or Approved Dual Enrollment Course  1 credit * Credit Earned <input type="checkbox"/>	Econ/Business/Free Enterprise or AP Macro Econ or AP Micro Econ or IB Econ or Approved Dual Enrollment Course  ½ credit Credit Earned <input type="checkbox"/>	01.42600 Ag Electricity and Electric Controls or Approved Dual Enrollment Course  1 credit Credit Earned <input type="checkbox"/>	<b>Legend:</b> *Science: Approved <a href="#">4th Sciences</a> may be used to meet both the required science and required elective in a Career, Technical, and Agricultural Education (CTAE) sequence of courses; see Fourth Science Requirements for more information. Student may take science courses in any sequence. *Math: Select Math sequence 1, 2, 3, 4, based on 9 <sup>th</sup> grade entry course. **Students must complete two credits of the same world language for admission to University System of Georgia institutions. *** Students should complete a CTAE pathway and take the related end of pathway assessment.
Sample Elective Courses	<b>Other English Elective Courses:</b> Literary Types/Composition Journalism Oral/Written Communication Speech	<b>Other Math Elective Courses:</b> Calculus AP Calculus Math of Finance	<b>Other Science Elective Courses:</b> Genetics or AP/IB Science or Microbiology or Entomology	<b>Other Social Studies Elective Courses:</b> Current Issues or AP/IB Soc Studies or Sociology or World Geography	<b>Other CTAE Elective Courses:</b> Other CTAE electives are available to complete a related pathway	NOTE: Local systems may offer core courses in a different sequence; not all local systems offer every pathway. Students should explore all credit possibilities including <a href="#">Georgia's Virtual School Program</a> , <a href="#">Dual Enrollment</a> , <a href="#">Advanced Placement (AP)</a> , <a href="#">International Baccalaureate (IB)</a> and <a href="#">Work-Based Learning (WBL)</a> to reach their educational and career goals.

Agriculture, Food & Natural Resources

SAMPLE Pathway OCCUPATIONS			
See * <a href="#">Georgia's HOT Careers to 2020</a> for more information on high-skilled, high-wage and high-demand occupations.			
Occupation Specialties	Entry Level of Education Needed	2012 Annual Wage	Annual Openings 2012-2022
Electrical Engineering Technicians	Associate's Degree	\$56,800	70
Electrical Engineers	Bachelor's Degree	\$83,300	70
Electricians	Associate's Degree	\$41,900	380

Source: Georgia Department of Labor/ONET

<p><b>*Related Pathway Occupations:</b>                  Electrical Engineering Technicians                  Electrical Engineers                  Electricians                  Electrical Power-Line Installers and Repairers                  Electrical Engineering Technologists                  Electrical Drafters                  Power Plant Operators</p>	<p><b>Other Related Agriculture, Food, &amp; Natural Resources Occupations:</b>                  Electric Motor, Power Tool, and Related Repairers                  Construction and Building Inspectors                  Home Appliance Repairers</p> <p style="text-align: right;">*ONET Online</p>
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**For more information about your education and career planning, including valuable financial aid information that includes grants and scholarships, see your school counselor.**

*** <a href="#">Current Georgia Graduation Rule</a>			
Coursework	Credits	Coursework	Credits
I. English/Language Arts	4	V. Health & Physical Education	1
II. Math	4	VI. **Career, Technical & Agricultural Education and/or	3
III. *Science	4	***World Languages, and/or Fine Arts	4
IV. Social Studies	3	VII. Electives	23
		<b>TOTAL</b>	<b>23</b>

\*Selected [4th Science](#) courses may be used to meet both the required science and required elective in a CTAE sequence of courses.  
 \*\*Students must complete three credits to complete a CTAE pathway and take the end of pathway assessment.  
 \*\*\*Students must complete two credits of the same world languages for admission to Georgia Board of Regents colleges/universities.  
 \*\*\*\* Current graduation requirements should be met in all content areas.  
 NOTE: This plan represents minimum graduation requirements. Local systems may require additional coursework.

**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](http://www.usg.edu/student_affairs/documents/Staying_on_Course.pdf). ([www.usg.edu/student\\_affairs/documents/Staying\\_on\\_Course.pdf](http://www.usg.edu/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 take the COMPASS test for admissions.
- Students who will continue their education and training in the US Military should take the ASVAB assessment.
- Students should utilize electronic college and career data bases 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 Move on When Ready, in which high school students may earn their high school course credits while taking college courses.

**Possible Student Pathway Credentialing Opportunities:**

Students completing a pathway are eligible to take a Credentialing/End of Pathway Assessment (EOPA) upon successful completion of the three required courses in the pathway. For specific assessment information, refer to <http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/CTAE-Georgia-Assessments.aspx>

**Ag Mechanics & Electrical Systems**

Workers in the Agricultural Mechanics and Electrical Systems pathway install, connect, test, and maintain electrical systems for a variety of purposes including climate control, security, and communications. They also install and maintain the electronic controls for machines in business and industry. Although most electricians specialize in construction or maintenance, a growing number do both.

Electricians work with blueprints when they install electrical systems in factories, office buildings, homes, and other structures. Blueprints indicate the locations of circuits, outlets, load centers, panel boards, and other equipment. Electricians must follow the National Electric Code and comply with state and local building codes when they install these systems.

Maintenance work varies greatly, depending on where the electrician is employed. Electricians who specialize in residential work may rewire a home and replace an old fuse box with a new circuit breaker box to accommodate additional appliances. Those who work in large factories may repair motors, transformers, generators, and electronic controllers on machine tools and industrial robots. Those in office buildings and small plants may repair all types of electrical equipment.

Some electricians receive formal training in professional/ technical schools and two-year colleges, where they learn the basics of electrical wiring. Electricians also learn and develop their skills on the job, receiving training from more experienced electricians. Licensing examinations are required in most states. Competition for workers is keen because of the scarcity of qualified people to fill electrician positions.