# Student Plan of Study - Agriculture Energy Systems

**Name____________________________**

**School____________________________________**

**Parent/Guardian Signature_____________________________**

**Date_____________**

**Signature**

Current Area of Interest: **Agriculture, Food & Natural Resources/Agriculture Energy 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.

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>I. English/Language Arts Total 4 credits</th>
<th>II. Math Total 4 credits</th>
<th>III. Science Total 4 credits</th>
<th>IV. Social Studies Total 3 credits</th>
<th>V. Health/Personal Fitness Total 1 credit</th>
<th>VI. Possible electives in additional pathways (students should check the local course description catalog for these and other electives)</th>
</tr>
</thead>
</table>
| 9th         | 1 CCGPS Cord Algebra                     | 1 CCGPS Core Algebra    | Biology or Approved Dual Enrollment Course | American government/Civics or AP Government/Politics US or Approved Dual Enrollment Course | Health ½ credit | Advanced Academic Pathways 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 must complete an advanced academic pathway when they complete the required coursework to include at least one AP or one IB or one Dual Enrollment course. An advanced academic pathway must also include at least two credits in one world language. AP, Dual Enrollment and Georgia Virtual School courses may be available.

| 10th        | 1 CCGPS Analytic Geometry                | 1 CCGPS Advanced Algebra | Physical Science or Physics or AP Physics or Approved Dual Enrollment Course | World History or AP World History or Approved Dual Enrollment | 02.47100 Basic Ag Science or Approved Dual Enrollment Course | World Language Pathways

**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 must complete three credits in one language. The third course may reflect an AP, IB or Dual Enrollment designation. Georgia Virtual School and ACCEL courses may be available.

| 11th        | 1 CCGPS Adv. Algebra                     | 1 CCGPS Pre-Calculus    | Chemistry or Environmental Science or Earth Systems or AP Chemistry or Approved Dual Enrollment Course | United States History or AP US History or IB History of the Americas or Approved Dual Enrollment Course | 03.47100 Introduction to Renewable Energies or Approved Dual Enrollment Course | Fine Arts/Performing Arts Pathways 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 may 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, Dual Enrollment and Georgia Virtual School courses may be available.

| 12th        | 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 CCGPS Pre-Cal or Adv Math Decision Making or Math of Ind & Govern or AP Statistics or IB Math or Approved Dual Enrollment Course | Any other of the previous courses or Zoology or Ecology or Agriculture or Approved Dual Enrollment Course | Ecowon Business/Free Enterprise or AP Macro Econ or AP Micro Econ or IB Econ or Approved Dual Enrollment Course | 03.46200 Renewable Fuel Production & Research or Approved Dual Enrollment Course | Legend:

**Science: Approved 4th Sciences 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.** Students may take science courses in any sequence. **Math: Select Math sequence 1, 2, 3, 4, based on 9th 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.**

Other CTAE Electives: Courses

Other CTE courses are available to complete a related pathway.

NOTE: Local systems may offer core courses in a different sequence, not all every systems offer every pathway. Students should explore all credit possibilities including Georgia’s Virtual School Program, Dual Enrollment, Advanced Placement (AP), International Baccalaureate (IB) and Work-Based Learning (WBL) to reach their educational and career goals.

Richard Woods, Georgia’s School Superintendent
"Educating Georgia’s Future"
### SAMPLE Pathway OCCUPATIONS
See *Georgia’s HOT Careers to 2030* for more information on high-skilled, high-wage and high-demand occupations.

<table>
<thead>
<tr>
<th>Occupation Specialties</th>
<th>Entry Level of Education Needed</th>
<th>2012 Annual Wage</th>
<th>Annual Openings 2012-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Engineers</td>
<td>Bachelor’s Degree</td>
<td>$86,480</td>
<td>41</td>
</tr>
<tr>
<td>Energy Auditors</td>
<td>Associate’s Degree</td>
<td>$65,100</td>
<td>480</td>
</tr>
<tr>
<td>Environmental Engineer Technicians</td>
<td>Associate’s Degree</td>
<td>$45,350</td>
<td>22</td>
</tr>
</tbody>
</table>

Source: Georgia Department of Labor/ONET

### For more information about your education and career planning, including valuable financial aid information that includes grants and scholarships, see your school counselor.

#### ****Current Georgia Graduation Rule

<table>
<thead>
<tr>
<th>Coursework</th>
<th>Credits</th>
<th>Coursework</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. English/Language Arts</td>
<td>4</td>
<td>V. Health &amp; Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>II. Math</td>
<td>4</td>
<td>VI. **Career, Technical &amp; Agricultural Education and/or Engineering</td>
<td>3</td>
</tr>
<tr>
<td>III. *Science</td>
<td>4</td>
<td>III. **World Languages, and/or Fine Arts</td>
<td>3</td>
</tr>
<tr>
<td>IV. Social Studies</td>
<td>3</td>
<td>VII. Electives</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>23</td>
<td><strong>TOTAL</strong></td>
<td></td>
</tr>
</tbody>
</table>

*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).

- 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](http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/CTAE-Georgia-Assessments.aspx)

### Agriculture Energy Systems

The Agriculture Energy Systems pathway offers students the opportunity to study and explore alternative fuel & alternative energy. Students in this pathway will research, design, and construct processors capable of producing biofuels that can be used on the farm or ranch. Students will also explore possible alternatives to meeting the country’s and the world’s energy needs of the future. The role of agriculture in the production of renewable energy is a primary component of this pathway. Students will identify energy savings opportunities and make recommendations to achieve more energy efficient operation.

The top three careers listed for this pathway may overlap in some daily tasks or responsibilities. Energy engineers may include managing the development, design, or construction of energy conservation projects to ensure acceptability of budgets and time lines, conformance to federal and state laws, or adherence to approved specifications. Engineers will also oversee design or construction aspects related to energy such as energy engineering, energy management, and sustainable design. Engineers evaluate construction design information such as detail and assembly drawings, design calculations, system layouts and sketches, or specifications.

Energy auditors conduct energy audits to evaluate energy use, costs, or conservation measures. Energy auditors may also monitor and analyze energy consumption. Auditors perform energy modeling, measurement, verification, commissioning, or retro-commissioning.

Energy Engineer Technicians conduct jobsite observations, field inspections, or sub-metering to collect data for energy conservation analyses. Technicians review architectural, mechanical, or electrical plans and specifications to evaluate energy efficiency or determine economic, service, or engineering feasibility. Technicians may also inspect or monitor energy systems including heating, ventilation and air conditioning (HVAC), or daylighting systems to determine energy use or potential energy savings.