Student Plan of Study – Plant Mechanical Systems

Name____________________________

Parent/Guardian Signature_____________________________

Signature____________________________

Revision # 4 June, 2015

Current Area of Interest: Agriculture, Food & Natural Resources/Plant Mechanical 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 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</th>
<th>II. Math</th>
<th>III. Science</th>
<th>IV. Social Studies</th>
<th>V. Health/Personal Fitness</th>
<th>VII. Possible electives in additional pathways (students should check the local course description catalog for these and other electives)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th Grade</td>
<td>1 CCGPS Cord Algebra</td>
<td>2 CCGPS Analytic Geometry</td>
<td>Biology or Approved Dual Enrollment Course</td>
<td>American/ Government/ Civics or AP</td>
<td>Health</td>
<td>Advanced Academic Pathways: English/Language Arts, Math, Science, Social Studies</td>
</tr>
<tr>
<td></td>
<td>2 CCGPS Accel Algebra</td>
<td>3 CCGPS Accel Analytic Geometry</td>
<td>1 credit</td>
<td>½ credit</td>
<td>½ credit</td>
<td>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 Dual Enrollment course. An advanced academic pathway should also include at least two credits in one world language. AP, Dual Enrollment and Georgia Virtual School courses may be available.</td>
</tr>
<tr>
<td>10th Grade</td>
<td>1 CCGPS Analytic Geometry</td>
<td>1 CCGPS Pre-Calculus</td>
<td>1 credit</td>
<td>1 credit</td>
<td>1 credit</td>
<td>World Language Pathways: **Two credits are required for admissions to University System Institutions. For a listing of world language courses offered in 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 Dual Enrollment designation. Georgia Virtual School and ACCEL courses may be available.</td>
</tr>
<tr>
<td>11th Grade</td>
<td>1 CCGPS Adv. Algebra</td>
<td>1 CCGPS Pre-Calculus</td>
<td>Chemistry or Environmental Science or Earth Systems or AP/IB or Approved Dual Enrollment Course</td>
<td>United States History or AP US History or IB History of the Americas or Approved Dual Enrollment Course</td>
<td>01.42100 Agriculture Mechanics I or Approved Dual Enrollment Course</td>
<td>Fine Arts/Performing Arts Pathways: Visual Arts, Dance, Music, Journalism, Theatre</td>
</tr>
<tr>
<td>12th Grade</td>
<td>1 CCGPS Pre-Cal or Adv Math Decision Making or AP Statistics or IB Math or Approved Dual Enrollment</td>
<td>Any other of the previous courses or 2 credit</td>
<td>Econ/Business/Free Enterprise or AP Micro Econ or IB Econ or Approved Dual Enrollment</td>
<td>02.44100 Plant Science and Biotechnology or Approved Dual Enrollment</td>
<td>1 credit</td>
<td>Other CTEA Elective Courses: Other CTEA electives are available to complete a related pathway</td>
</tr>
</tbody>
</table>

Legend:
- Science: Approved 4th Science 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 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.

NOTE: Local systems offer core courses in a different sequence; not all local systems offer every pathway. Students should explore all credit possibilities including Georgia’s Virtual School Programs, 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 2020* 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>Mechanical Engineers</td>
<td>Bachelor’s Degree</td>
<td>$74,800</td>
<td>110</td>
</tr>
<tr>
<td>Nursery and Greenhouse Managers</td>
<td>Bachelor’s Degree</td>
<td>$69,300</td>
<td>450</td>
</tr>
<tr>
<td>Nursery Workers</td>
<td>High School Diploma</td>
<td>$18,200</td>
<td>490</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.**

<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. <strong>Career, Technical &amp; Agricultural Education and/or Science</strong></td>
<td>3</td>
</tr>
<tr>
<td>III. *Science</td>
<td>4</td>
<td>VII. <em>World Languages, and/or Fine Arts</em></td>
<td>4</td>
</tr>
<tr>
<td>IV. Social Studies</td>
<td>3</td>
<td>TOTAL</td>
<td>23</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 Credential/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)

**Related Pathway Occupations:**
- Mechanical Engineers
- Nursery and Greenhouse Managers
- Nursery Workers
- Control and Valve Installers and Repairers
- Mechanical Engineers Technologists
- Landscaping and Groundskeepers

**Other Related Agriculture, Food, & Natural Resources Occupations:**
- Agricultural Sciences Teachers
- Soil and Plant Scientists
- Crop Farmworkers and Laborers
- Farm and Ranch Managers

*ONET Online

**Plant Mechanical Systems**

A career in plant science and horticulture offers a variety of job opportunities in the fields of education, research, golf and sports turf, landscape design, parks and gardens, public service, production management, and sales and marketing. Some jobs available include landscape designer, greenhouse manager, golf course superintendent, plant breeder, florist, agricultural chemical researcher and garden center owner. Educational requirements in this field vary by job. Two- and four-year programs are available in this area. Advanced degrees may be necessary for some research-related jobs.

Employment opportunities in horticulture should be good, with more job openings than job seekers. Employment is expected to increase in response to the increasing demand for both products and services by commercial producers, landscape contractors, turf managers and the general public. New avenues of research in biotechnology to develop plant and food crops that require less fertilizer, fewer pesticides and herbicides, and less water will also increase the demand for careers in plant science and horticulture.

Workers in Agricultural Mechanics are responsible for the efficient operation of farm machinery, opportunities in the farm equipment industry will grow as farms merge and grow larger. Agricultural and farm equipment mechanics are responsible for the maintenance, repair, and installation of machines that increase the efficiency of farming activities, such as planting, harvesting, and irrigating crops. Agricultural mechanics also service and repair smaller lawn and garden equipment operated by suburban homeowners.