Revision # 4 June, 2015

Student Plan of Study – Plant Mechanical Systems

Name_____ Date_____ School_____

Parent/Guardian Signature_____ Date_____ Advisor/Counselor Signature _____ Date_____

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

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 the Technical College System of Georgia institutions should be advised that meeting minimum requirements will not guarantee admission. Postsecondary institutions may set additional requirements.*

Agriculture, Food & Natural Resources

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	9th Literature & Composition or Approved Dual Enrollment Course 1 credit Credit Earned ☐	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 ☐	Biology or Approved Dual Enrollment Course 1 credit * Credit Earned ☐	American Government/Civics or AP Government/ Politics US or Approved Dual Enrollment Course ½ credit Credit Earned ☐	Health ½ credit Credit Earned ☐ Personal Fitness ½ credit Credit Earned ☐ **VI. CTAE Pathway Total 3 credits**	**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 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.
10	10th Literature & Composition or World Literature & Composition or Approved Dual Enrollment Course 1 credit Credit Earned ☐	1 CCGPS Analytic Geometry 2 CCGPS Advanced Algebra 3 CCGPS Accel Analytic Geometry/Adv. Algebra 4 CCGPS Pre-Calculus 1 credit * Credit Earned ☐	Physical Science or Physics or AP Physics or Approved Dual Enrollment Course 1 credit * Credit Earned ☐	World History or AP World History or Approved Dual Enrollment Course 1 credit Credit Earned ☐	02.47100 Basic Agriculture Science or Approved Dual Enrollment Course 1 credit Credit Earned ☐	**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 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.
11	American Literature/ Composition or AP English Language & Composition/American Lit or Approved Dual Enrollment Course 1 credit Credit Earned ☐	1 CCGPS Adv. Algebra 2 CCGPS Pre-Calculus 3 CCGPS Accel Pre-Cal 4 CCGPS Cal or AP Cal 1 credit * Credit Earned ☐	Chemistry or Environmental Science or Earth Systems or AP/IB or Approved Dual Enrollment Course 1 credit * Credit Earned ☐	United States History or AP US History or IB History of the Americas or Approved Dual Enrollment Course 1 credit Credit Earned ☐	01.42100 Agriculture Mechanics I or Approved Dual Enrollment Course 1 credit Credit Earned ☐	**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 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.
	At the end of the 11th 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).					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. 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.
12	Advanced Composition or British Literature or AP/IB English Literature & Composition or Approved Dual Enrollment 1 credit Credit Earned ☐	CCGPS Pre-Cal or Adv Math Decision Making or Math of Ind & Govern or AP Statistics or IB Math or Approved Dual Enrollment 1 credit * Credit Earned ☐	Any other of the previous courses or Zoology or Ecology or Approved Dual Enrollment 1 credit * Credit Earned ☐	Econ/Business/Free Enterprise or AP Macro Econ or AP Micro Econ or IB Econ or Approved Dual Enrollment ½ credit Credit Earned ☐	02.44100 Plant Science and Biotechnology or Approved Dual Enrollment 1 credit Credit Earned ☐	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 Program, Dual Enrollment, Advanced Placement (AP), International Baccalaureate (IB) and Work-Based Learning (WBL) to reach their educational and career goals.
Sample Elective Courses	Other English Elective Courses: Literary Types/Composition Journalism Oral/Written Communication Speech	Other Math Elective Courses: Calculus AP Calculus Math of Finance	Other Science Elective Courses: Genetics or AP/IB Science or Microbiology Entomology	Other Social Studies Elective Courses: Current Issues or AP/IB Soc Studies or Sociology or World Geography	Other CTAE Elective Courses: Other CTAE electives are available to complete a related pathway	

SAMPLE Pathway OCCUPATIONS
See *Georgia's HOT Careers to 2020 for more information on high-skilled, high-wage and high-demand occupations.

Occupation Specialties	Entry Level of Education Needed	2012 Annual Wage	Annual Openings 2012-2020
Mechanical Engineers	Bachelor's Degree	$74,800	110
Nursery and Greenhouse Managers	Bachelor's Degree	$69,300	450
Nursery Workers	High School Diploma	$18,200	490

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**

Coursework	Credits	Coursework	Credits
I. English/Language Arts	**4**	**V. Health & Physical Education**	**1**
II. Math	**4**	**VI. **Career, Technical & Agricultural Education and/or**	
III. *Science	**4**	***World Languages, and/or Fine Arts**	**3**
IV. Social Studies	**3**	**VII. Electives**	**4**
		TOTAL	**23**

*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. (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

*Related Pathway Occupations:	Other Related Agriculture, Food, & Natural Resources Occupations:
Mechanical Engineers Nursery and Greenhouse Managers Nursery Workers Control and Valve Installers and Repairers Mechanical Engineers Technologists Landscaping and Groundskeepers	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.