

Student Plan of Study – Programming

Name _____ Date _____ School _____

Parent/Guardian Signature _____ Date _____ Advisor/Counselor Signature _____ Date _____

*Current Area of Interest: **Information Technology/Programming** - 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 aware 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 th 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"/> *** 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 th Literature & Composition or World Literature & Composition or Approved Dual Enrollment Course 1 credit Credit Earned <input type="checkbox"/>	1 CCGPS Analytic Geometry 2 CCGPS Adv. Algebra 3 CCGPS Accel Analytic Geometry/Adv. Algebra 4 CCGPS Pre-Calculus 1 credit * Credit Earned <input type="checkbox"/>	Physical Science or Physics 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"/>	11.41500 Intro to Digital Technology or Approved Dual Enrollment Course 1 credit Credit Earned <input type="checkbox"/>	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.
	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 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"/>	11.47100 Computer Science Principles or Approved Dual Enrollment Course 1 credit Credit Earned <input type="checkbox"/>	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 11 th 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 9 th 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 may 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: Adv Math Decision Making Math of Ind. & Govern. Math of Finance	Other Science Elective Courses: Astronomy or AP/IB Science	Other Social Studies Elective Courses: Technology & Society Psychology or AP/IB Social Studies or Sociology	Other CTAE Elective Courses: Other CTAE courses are available to complete a related pathway	

Programming

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
Computer Programmers	Bachelor's Degree	\$75,400	230
*Computer System Analysts	Bachelor's Degree	\$73,800	810
Software Developers, Application	Bachelor's Degree	\$86,300	340

Source: Georgia Department of Labor/ONET

*Related Pathway Occupations:	Other Related Information Technology Occupations:
Software Engineers	Information Security Analysts
Computer Programmers	Network & Computer Systems Administrators
Computer & Information Systems Managers	Video Game Designers
Computer Hardware Engineers	Game Designers
Computer Network Architects	
Computer System Analysts	
Database Administrators	*ONET Online

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 ***World Languages, and or/Fine Arts	3
III. *Science	4	VII. Electives	4
IV. Social Studies	3	TOTAL	23
<p>*Selected 4th Science courses may be used to meet both the required science and required elective in a CTAE sequence of courses.</p> <p>**Students must complete three credits to complete a CTAE pathway and take the end of pathway assessment.</p> <p>***Students must complete two credits of the same world language for admission to Georgia Board of Regents colleges/universities.</p> <p>**** Current graduation requirements should be met in all content areas.</p> <p>NOTE: This plan represents minimum graduation requirements. Local systems may require additional coursework.</p>			

Postsecondary Transition:
<ul style="list-style-type: none"> 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 databases 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 .

Programming

A computer programmer creates the code for software applications and operating systems. After a software developer or computer software engineer designs a computer program, the programmer writes code that converts that design into a set of instructions a computer can follow. Programmers test the program to look for errors and then rewrite it until it is debugged, or error-free. A programmer continues to evaluate programs that are in use, making updates and adjustments as needed. The application of programming is applied through game design. A video game designer will come up with a concept that will eventually become a video game and see that idea through to fruition. They will work with other members of the development team, including artists, programmers and audio engineers. Video game design jobs are not entry-level positions — one will have to work up to this position by working in other jobs in the field. Video game design jobs include game designer, lead designer and level designer. A video game job is possible, but a job working as a video game designer is usually earned from years of experience doing other work in this field. Fortunately there are many types of jobs from which to choose, both on the technical side and on the business side of the industry.

The information technology industry, including programming, is a dynamic and entrepreneurial field that continues to have a revolutionary impact on the economy and on the world. Students in information technology learn and practice skills that prepare them for diverse post-high school education and training opportunities, from apprenticeships and two-year college programs to four-year college and graduate programs.