



Dr. John D. Barge, State School Superintendent
"Making Education Work for All Georgians"

Student Plan of Study – Machining

Name _____ Date _____ School _____

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

Current Area of Interest: **Architecture & Construction/Machining**- 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 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
Architecture & Construction	9 9 th Literature & Composition or Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	*1 CCGPS Cord Alg 2 CCGPS Analytic Geom 3 CCGPS Accel Cord Alg/Analytic Geom 4 CCGPS Accel Analytic Geom B/Adv Alg 1 credit Credit Earned <input type="checkbox"/>	*Biology or Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	American Government/Civics or AP Government/ Politics US or Dual Enrollment 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 10 th Literature & Composition or World Literature & Composition or Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	*1 CCGPS Analytic Geom 2 CCGPS Adv Algebra 3 Accel Analytic Geom/Adv Alg 4 CCGPS Pre-Calculus 1 credit Credit Earned <input type="checkbox"/>	*Physical Science or Physics or Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	World History or AP World History or Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	46.54500 Industry Fundamentals & Occupational Safety or Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	World Language Pathways **2 credits 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 3 units 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 Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	*1 CCGPS Adv Alg 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 Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	United States History or AP US History or IB History of the Americas or Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	****Proposed course Intro to Metals or Dual Enrollment 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).					
12 Advanced Composition or British Literature or AP English Literature & Composition or Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	CCGPS Pre-Cal or Adv Math Decision Making or Math of Ind & Govern or AP Stats or IB Math or Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	Any other of the previous courses or Ecology or Geology or Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	Econ/Business/Free Enterprise or AP Macro Econ or AP Micro Econ or IB Econ or Dual Enrollment ½ credit Credit Earned <input type="checkbox"/>	****Proposed course Machining Operations or Dual Enrollment 1 credit Credit Earned <input type="checkbox"/>	Other CTAE Elective Courses: AP and Georgia Virtual School may be available for CTAE courses	
Sample Electives	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:	Other Social Studies Elective Courses: Current Issues Psychology Sociology		

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
Machinist	High School	\$35,900	170
Welding, Soldering & Brazing Machine Setter, Operators & Tenders	High School	\$33,600	60
Tool & Die Makers	High School	\$44,700	30

Source: Georgia Department of Labor/ONET

Go to GCollege411 at <http://www.Gcollege411.org> for more information about your education and career planning, including valuable financial aid information that includes grants and scholarships.

***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

*Selected [4th Science](#) courses may be used to meet both the required science and required elective in CTAE sequence of courses.
 **Students must complete 3 credits to complete CTAE pathway and take the end of pathway assessment.
 ***Students must complete 2 years of the same World language 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 University System of Georgia institutions should prepare to take the ACT or SAT for admissions. Admission's testing varies from institution to institution. Students should 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)
- Students who will continue their education in a Program of Study at one of Georgia's Technical Colleges 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 [GCollege411](#) to select the most appropriate postsecondary opportunities including registered apprenticeships to match their selected career field.
- Students can earn both high school and postsecondary credit while in high school. Georgia has multiple [dual enrollment](#) programs, including ACCEL, AP, IB, Dual Hope, Move On When Ready and Articulation.

Possible Student Pathway Credentialing Opportunities:

SkillsUSA Work Force Ready Exam
 National Center for Construction Education and Research (NCCER)

<p>*Related Pathway Occupations:</p> <p>Computer-Controlled Machine Tool Operators, Metal & Plastic Computer Numerically Controlled Machine Tool Programmers Machinists Multiple Machine Tool Setters, Operators, & Tenders, Metal & Plastic Lath & Turning Machine Tool Setters, Operators, & Tenders, Metal & Plastic Tool & Die Makers</p>	<p>Other Related Architecture & Construction Occupations:</p> <p>Model Makers, Metal & Plastics Patternmakers, Metal & Plastics Cabinetmakers & Bench Carpenters Stonemasons Sheet Metal Workers Welders</p> <p style="text-align: right;">*O*NET Online</p>
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Architecture & Construction/Machinist

A machinist sets up and operates a variety of machine tools to produce precision parts and instruments. This includes precision instrument makers who fabricate, modify, or repair mechanical instruments. In addition, machinist fabricate and modify parts to make or repair machine tools or maintain industrial machine. They apply knowledge of mechanics, mathematics, metal properties, layout and machining procedures.

Today machinist should be familiar with multiple computer aided design softwares, analytical or scientific software, computer aided manufacturing (CAM) software as well as spreadsheet software. Machinist should have a general knowledge of mathematics, design and good communicative skills; and, a skill set that includes critical thinking, active listening, coordination and reading comprehension.

Employees in these occupations usually need one or two years of training which involves both on-the-job experience and informal training with an experienced worker. This occupation may be associated with a recognized state [registered apprenticeship](#).

Projected growth for this occupation is slower than average from 2010- 2020. Therefore, competition for employment will be keen with most jobs going to the most experienced with the most training. Manufacturing is the top employer for these workers.

Holland assessment codes for this occupation are Realistic, Conventional and Investigative (RCI). Holland codes are available by completing the Career Keys assessment in [Gcollege411](#). Take this assessment to determine if you are suited to this type occupation.