Program of Study: Industrial Maintenance

This Program of Study may serve as a graduation guide for the next four plus years, along with other career planning and educational materials. Courses listed in this model may include recommended coursework and should be individualized to students educational and career goals. Each graduation plan needs to meet minimum high school graduation requirements. MOWR (Move on When Ready) courses can be high school academic and/or career technical education dual enrollment courses.

	Secondary: Industrial Maintenance						Postsecondary		
Course/Grade	**Ninth**	**Tenth**	**Eleventh**	**Twelfth**	Entrance or Exit Point	**MOWR Dual Enrollment Opportunities**	**TCC**	**AAS Degree**	**Bachelor of Science**
English	9th grade Lit/ Composition	10th grade Lit/ Composition	American Lit/ Composition	World Lit/ Composition			MT21 Mechatronics Technician - IDSY 1005 Intro to Mechatronics IM11 Industrial Maintenance Assistant - IDSY 1007 Industrial Safety Procedures	IS13 – Industrial Systems Technology - Complete Academic courses - IDSY 1130 Industrial Wiring -IDSY 1101 DC Circuit Analysis -ELTR 1020 Electrical Systems Basics I -IDFC 1012 Alternating Current I -IDSY 1105 AC Circuit Analysis -IDSY 1110 Industrial Motor Controls I -IDSY 1210 Industrial Motor Controls II -IDSY 1120 Basic Industrial PLCs -IDSY 1220 Intermediate Industrial PLCs -IDSY 1190 Fluid Power Systems -IDSY 1195 Pumps and Piping Systems Occupational Electives 11 Hrs	The University System of Georgia offers students' higher education options at 30 institutions throughout the state, providing a wide range of academic programming including certificates and associate, baccalaureate, masters, doctoral and professional degrees. https://apps.usg.edu/ords/f?p=118:1:0:::::
Mathematics	Coordinate Algebra	Analytic Geometry	Advanced Algebra/ Algebra II	Pre-calculus					
Science	Physical Science	Biology	Chemistry	Physics					
Social Studies	Psychology	World History	US History	Government (½ unit) Economics (½ unit)					
Pathway Completer	Industrial Mechanics	Fluid Power and Piping Systems	Electrical Motor Controls	Work-Based Learning, Youth Apprenticeship, or Capstone Project		IF11 –Fluid Power Technician - IDSY 1170 Industrial Mechanics - IDSY 1190 Fluid Power - IDSY 1195 Pumps and Piping Systems	**Diploma** IST4 – Industrial Systems Technology - Complete Academic courses - IDSY 1101 DC Circuit Analysis - IDSY 1105 AC Circuit Analysis - IDSY 1110 Industrial Motor Controls - IDSY 1120 Basic Industrial PLCs - IDSY 1130 Industrial Wiring - Occupational Electives (9 Hours)		
Industry Recognized Credential (Pathway Completer)	Visit the End of Pathway Assessment Page (see note below)								
Required/ Selective Electives	Health & Personal Fitness (*can be taken in grades 9-12*)	Intro to Digital Technology	Embedded Computing	AP Chemistry					
	Modern Language/Latin *2 units required for admissions to Georgia University System Colleges/Universities* For a listing of Modern Language/Latin courses offered at your high school, please contact your advisor, counselor, or curriculum handbook.			Other Electives For a listing of other elective courses offered at your high school, please check with your advisor, counselor, or curriculum handbook.					

NOTE: Students have many options to **ENTER** and **EXIT** from their academic studies into the workforce. When a student graduates from high school, they are eligible to choose one of many **ENTRANCE POINT** options: **1.** Enroll in either a 2- or 4-year post-secondary program; **2.** Enroll in an apprenticeship program or the military; or **3.** Enter the workforce using technical skills learned in high school. When a student finishes a 2- or 4-year degree program, they may choose to **EXIT** and **1.** Enroll in an apprenticeship program or the military; **2.** Enroll in a professional university degree program; or **3.** Enter the workforce using technical skills learned.

Industrial Maintenance Career Pathway Completers/MOWR Dual Enrollment - Industry Credentialing for High School Students

Upon completion of sequenced courses in the Industrial Maintenance Career Pathway or MOWR Dual Enrollment Opportunities courses, students are eligible to complete Industry-Recognized student credential for fulfillment of End of Pathway Assessment. Secondary students completing the Industrial Maintenance pathway or MOWR courses will be able to sit for National Industry Credentialed assessment offered on-line from NCCER and NIMS. Once mastery is reached, students will receive recognition for completion and use this credential in conjunction with their job or continuing training. For specific assessment information, refer to: http://bit.ly/ArchConstEOPA

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Sample High Demand Careers in Georgia				
Occupation Specialties	**Level of Education Needed**	**Georgia Average Salary**	**Annual Average Openings in Georgia**	**2014 – 2024 Employment Outlook**
Industrial Machinery Mechanics	Postsecondary Certificate	$45,688	424	High Demand, High Skill
Maintenance Workers, Machinery	Diploma, some postsecondary	$41,166	66	High Demand, High Skill
Millwrights	Diploma, some postsecondary	$48,030	65	High Demand, High Skill

GDOL LaborMarket Explorer

Go to GAfutures at www.gafutures.org for more information about your education and career planning, including valuable financial information (grants and scholarships including HOPE Program, grants and loans, FAFSA, and CSS forms).

Career Enhancement Opportunities

Career-Related Education Activities

- ❑Career Awareness
- ❑Career Exploration
- ❑Instructional Related
- ❑Connecting
- ❑Work-Based Learning
  - Employability Skill Dev.
  - Cooperative Education
  - Internship
  - Youth Apprenticeship
  - Clinicals

Postsecondary Options:

- 4-Year Universities/Colleges
- 2-Year Colleges
- Technical Colleges
- State Registered Apprenticeships
- Special Purpose Schools
- On-the-Job Training
- Military

Earning Postsecondary Credits While in High School

A vital way to get ahead and realize you can pass college courses is by earning postsecondary credits as a high school student. Georgia offers a dual credit program titled Move On When Ready. You need to talk with your parents, school counselor, or advisor about the proper courses to take each year in high school and dual credit.

Students completing the course work in this Plan, will have earned/completed MOWR courses, Industry Credential, and Technical Certificate of Credit (TCC) and/or Associates of Applied Science Degree.

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 complete a placement exam.
- 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.

Related Pathway Occupations	Other Related Occupations
• Millwright • Machinery Maintenance Workers • Industrial Machinery Mechanic • Industrial Mechanic • Maintenance Mechanic • Maintenance Technician • Master Mechanic • Mechanic	• Electric Motor, Power Tool, and Related Repairers • Automotive Master Mechanics • Mobile Heavy Equipment Mechanics, except Engines • Maintenance Workers, Machinery • Maintenance and Repair Workers *ONET Online

Industrial Maintenance Pathway Description

Industrial machinery mechanics and maintenance workers maintain and repair factory equipment and other industrial machinery, such as conveying systems, production machinery, and packaging equipment. Millwrights install, dismantle, repair, reassemble, and move machinery in factories, power plants, and construction sites.

Workers in this occupation must follow safety precautions and use protective equipment, such as hardhats, safety glasses, and hearing protectors. Most work full time. However, they may be on call and work night or weekend shifts. Overtime is common.

Industrial machinery mechanics and maintenance workers and millwrights typically need a high school diploma. However, industrial machinery mechanics need a year or more of training after high school, whereas maintenance workers typically receive on-the-job training that lasts up to a year. Most millwrights go through a 4-year apprenticeship.

Employment of industrial machinery mechanics and maintenance workers and millwrights is projected to grow 17 percent from 2012 to 2022, faster than the average for all occupations. The need to keep increasingly sophisticated machinery functioning and efficient will drive demand for these workers. Job prospects for qualified applicants should be very good.

Compare the job duties, education, job growth, and pay of industrial machinery mechanics and maintenance workers and millwrights with similar occupations.