



Science,
Technology,
Engineering &
Mathematics

2021-2022

Engineering

Business and Industry Endorsement

Program of Study: Engineering

Young Women's Leadership Academy at Arnold

Grade	ELA	Math	Science	Social Studies	Required CTE Courses	Potential Certification Opportunities
9th	English 1	Algebra 1	Biology	World Geography or AP Human Geography	Principles of Applied Engineering (1 Credit)	<ul style="list-style-type: none"> OSHA General Cyber Safety Career Essentials: Customer Service Career Safe: Employability
10th	English 2	Geometry	Chemistry or OnRamps Chemistry	World History, AP World History, or Political Science	Engineering Design and Presentation I (1 Credit)	<ul style="list-style-type: none"> Autodesk Certified User in AutoCAD Autodesk Certified User in Revit NCCER Electronic Systems Technician, Level 1, Level 2 Career Essentials: Electronics
11th	English 3	Algebra II	Physics, AP Physics, AP Chemistry, or OnRamps Physics	U.S. History, AP US History, or OnRamps US History	Engineering Design and Presentation II (2 Credits)	
12th	Business English, or Approved CTE 4 th year English	Financial Mathematics, or Approved CTE 4 th year Math	Principles of Technology, or Approved CTE 4 th year Science	Government _____ Economics	Practicum in STEM Engineering (2 Credits)	<ul style="list-style-type: none"> Career Essentials: Engineering Technology

Student Organizations	Additional Required Electives
SkillsUSA NTHS	Fine Arts Health Foreign Language Physical Education

Dual Credit Offerings	Additional Recommended Electives
Government Calculus Physics Spanish Literature English Literature	Economics Biology Computer Science Spanish Language English Language
	Computer Science OnRamps (1 Credit) Robotics 1 (1 Credit)
	Entrepreneurship (1 Credit) Principles of Arts, A/V Technology & Communications (1 Credit)

Sample Career Opportunities	High School	On the Job Training	Certificate	Associates Degree	Bachelor's Degree	Advanced College Degree	Average Annual Salary	Possible Majors for this Pathway
Engineering Manager					X	X	\$144,830—\$208,000	<ul style="list-style-type: none"> Biomedical Engineering Biomechanical Engineering Civil Engineering Industrial Engineering Mechanical Engineering Chemical Engineering Petroleum Engineering Aerospace Engineering Agricultural Engineering Environmental Engineering
Biomedical Engineer				X	X	X	\$91,410—\$148,210	
Mechanical Engineer				X	X	X	\$88,430—\$138,020	
Civil Engineer				X	X	X	\$87,060—\$144,560	
Petroleum Engineer				X	X	X	\$137,720—\$208,000	
Chemical Engineer				X	X	X	\$108,770—\$176,090	
Aerospace Engineer				X	X	X	\$116,500—\$166,620	
Agricultural Engineer				X	X	X	\$80,720—\$160,950	
Health and Safety Engineer				X	X	X	\$91,410—\$143,880	
Environmental Engineer				X	X	X	\$88,860—\$142,070	
Industrial Engineer				X	X	X	\$88,020—\$134,070	