

# Which pathway will you choose?



<b>CAREER FIELD: ENGINEERING, MANUFACTURING AND TECHNOLOGIES</b> <i>Recommended courses for: Apollo High School</i>				
	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
<b>Language Arts</b>	<b>3 Credits</b> Language Arts 9, Literature, Speech & Writing	<b>3 Credits</b> Language Arts 10	<b>3 Credits</b> Language Arts 11	<b>3 Credits</b> Language Arts 12
<b>Mathematics</b>	<b>3 Credits</b>	<b>3 Credits</b> <i>AP Statistics**</i>	<b>3 Credits</b> <i>AP Statistics**</i>	
<b>Science</b> <i>(must take 3 credits of Biology any year)</i>	<b>3 Credits</b>	<b>3 Credits</b>	<b>3 Credits</b>	
<b>Social Studies</b>	<b>3 Credits</b> Geography <i>AP Human Geography**</i>	<b>2 Credits</b> World History <i>AP Human Geography**</i>	<b>3 Credits</b> U.S. History <i>AP Human Geography**</i>	<b>3 Credits</b> Senior Social Economics and Government <i>AP Human Geography**</i>
<b>Fitness/Health</b>	<b>1.5 Credits</b> Fitness	<b>1 Credit</b> Health <b>.5 Credit</b> Fitness		
<b>Art</b> <i>(Must take 1 year any time)</i>	<b>3 Credits</b>			
		3 Credits of Electives in this area	5 Credits of Electives in this area	10 Credits of Elective in this area
	<ul style="list-style-type: none"> <li>• Digital Photography: Photo 1</li> <li>• Small Engine</li> </ul>	<ul style="list-style-type: none"> <li>• Construction Technology</li> <li>• Advanced Digital Photography</li> </ul>	<ul style="list-style-type: none"> <li>• Metal Fabrication</li> </ul>	
<b>Other</b>		<ul style="list-style-type: none"> <li>• General Automotive Service (Formerly Auto I &amp; II)++</li> <li>• Intro to Engineering Design: A Project Lead the Way course</li> <li>• Multimedia I – Graphic Arts and Video Production</li> <li>• Multimedia II – Advanced Video Production, Audio Studio Recording</li> <li>• Manufacturing Technology</li> <li>• Wood Fabrication</li> </ul>	<ul style="list-style-type: none"> <li>• AYES – Discovery Academy for Automotives</li> <li>• Independent Study</li> <li>• CISCO – Discovery Academy Computer Networking</li> <li>• Construction Technology</li> <li>• Student Instructor</li> </ul>	

**Required Courses**  
*Suggested Courses*  
 \*\* AP Courses  
 ## SRS Courses  
 ++ SCTC Tech Prep Courses

## Potential Careers in the Engineering, Manufacturing and Technologies Career Pathway



**Do you like to:** Work in math and physical science areas? Use problem-solving skills and use logic? Use oral and dissect similar pieces from the big picture? Work with critical details?

People attracted to careers in this pathway like to work with things. They like to work with their hands with objects, machines, and tools. This career path includes programs related to the technologies necessary to design, develop, install, or maintain physical systems. These may include engineering and related technologies, mechanics, and repair, manufacturing technology, precision production, electronics, and construction.

	High School Diploma (some add'l training may be necessary)	Technical Training or 2-year Degree	4-year Degree and Beyond			
Career Specialties/Occupations	<ul style="list-style-type: none"> <li>• Airline Grounds Crew Worker</li> <li>• Ambulance Driver (Minimum)</li> <li>• Assistant Drafter</li> <li>• Bicycle Repairs</li> <li>• Blue Collar Worker Supervisor</li> <li>• Brick Layers and Stone Masons</li> <li>• Building Maintenance Worker</li> <li>• Bus Drivers</li> <li>• Camera and Photographic Equipment Repairs (minimum)</li> <li>• Carpenter</li> <li>• Clothes Pressers</li> <li>• Concrete Mason</li> <li>• Construction and Well Drillers (minimum)</li> <li>• Construction Helper</li> <li>• Construction Worker</li> <li>• Court Clerks</li> <li>• Crane Operator</li> <li>• Deck Hands</li> <li>• Die Designer Apprentice</li> <li>• Dispatchers</li> <li>• Electrician Apprentice</li> <li>• Explosive Workers (minimum)</li> <li>• Fence Builders</li> <li>• Flight Attendants (Minimum)</li> <li>• Forklift Operators</li> <li>• Freight Handlers</li> <li>• Furniture Finishers</li> <li>• Gas and Oil Plant Operators</li> <li>• General Construction Workers</li> <li>• Glaziers</li> <li>• Hazardous Material Workers</li> <li>• Highway Maintenance Workers</li> <li>• Insulation Installers</li> <li>• Ironworker</li> <li>• Lather</li> <li>• Licensed Clerks (minimum)</li> <li>• Light Truck Drivers (minimum)</li> <li>• Locomotive Engineers</li> <li>• Log Graders and Scales (Minimum)</li> <li>• Machinist Apprentice</li> <li>• Mail Carriers</li> <li>• Mechanic and Repair Helpers</li> <li>• Mechanic and Repair Operators (minimum)</li> <li>• Medical Equipment Preparers (minimum)</li> </ul>	<ul style="list-style-type: none"> <li>• Metal and Plastic Processing Workers</li> <li>• Meter Readers</li> <li>• Packaging and Filling Machine Operators</li> <li>• Packers and Packagers</li> <li>• Painting and Coating Machine Operators</li> <li>• Paving Equipment Operators</li> <li>• Pharmacy Aides</li> <li>• Photograph Processing Workers</li> <li>• Pipe Layers</li> <li>• Plumbing Apprentice</li> <li>• Postal Clerks</li> <li>• Postmasters and Mail Superintendents (minimum)</li> <li>• Precision Welder</li> <li>• Production and Planning Clerks</li> <li>• Production Helpers</li> <li>• Pulp and Paper Workers</li> <li>• Pump Operators</li> <li>• Quality Control Inspectors</li> <li>• Railroad Brake, Signal and Switch Operators</li> <li>• Riggers</li> <li>• Roofers (minimum)</li> <li>• Roustabouts</li> <li>• School Bus Driver</li> <li>• Septic Tank Servicers and Sewer Pipe Cleaners</li> <li>• Subway and Street Car Operators</li> <li>• Taxi Drivers and Chauffeurs</li> <li>• Textile Machine Operators</li> <li>• Tire Building Machine Operators</li> <li>• Tire Repairers and Changers (minimum)</li> <li>• Title Setters (Minimum)</li> <li>• Tool and Die Apprentice</li> <li>• Truck Driver</li> <li>• Vehicle Cleaners</li> <li>• Wallpaper Hangers (minimum)</li> </ul>	<ul style="list-style-type: none"> <li>• Airplane Assembler</li> <li>• Airplane Mechanic</li> <li>• Airplane Pilot (minimum)</li> <li>• Auto Body Repairs*</li> <li>• Auto Body Technician*</li> <li>• Auto Glass Installers</li> <li>• Automatic Teller Machine Services</li> <li>• Automotive*</li> <li>• Boilermakers</li> <li>• Bus Mechanics Truck Mechanics*</li> <li>• Cabinet Makers*</li> <li>• Calibration</li> <li>• Carpenters*</li> <li>• Cement Masons</li> <li>• Chemical Equipment Operators</li> <li>• Chemical Plant Operators</li> <li>• Coin and Vending Machine Repairers</li> <li>• Commercial Drivers</li> <li>• Communications Equipment Mechanics</li> <li>• Computer Equipment Repairers</li> <li>• Construction and Building Inspectors</li> <li>• Crane &amp; Tower Operators</li> <li>• Dental Laboratory Technicians*</li> <li>• Drafters (minimum)*</li> <li>• Drywall Finishers</li> <li>• Drywall Installers</li> <li>• Electric Motor Repairers*</li> <li>• Electrician Helpers*</li> <li>• Electricians*</li> <li>• Electronic Equipment Repairer*</li> <li>• Electronics Engineering*</li> <li>• Elevator Installers and Repairers</li> <li>• Engineering Farm Equipment Mechanics</li> <li>• Fire-Protection Engineering</li> <li>• Floor and Carpet Layers</li> <li>• Floor Sanding Machine Operator</li> <li>• Glass Blowers</li> <li>• Heating and Cooling System Mechanics*</li> <li>• Heavy Equipment Mechanics*</li> <li>• Heavy Truck Drivers*</li> <li>• Hoist and Winch Operators</li> <li>• Home Electronic Repairers</li> <li>• Hydraulic Repairer</li> <li>• Industrial Electronic Repairers*</li> <li>• Industrial Machinery Mechanics*</li> <li>• Instrumentation Technician*</li> <li>• Jeweler</li> <li>• Land Surveyor*</li> <li>• Laser Technician</li> <li>• Lens Grinders and Polishers</li> <li>• Line Installers and Repairers</li> <li>• Locksmith</li> <li>• Loggers</li> <li>• Machinist</li> <li>• Mathematical Technicians</li> <li>• Mechanic/Technician</li> <li>• Medical Appliance Technician</li> <li>• Medical Equipment Repairer</li> </ul>	<ul style="list-style-type: none"> <li>• Medical Laboratory Technologist+</li> <li>• Millwrights*</li> <li>• Motor Boat Mechanics</li> <li>• Motorcycle Mechanics</li> <li>• Musical Instrument Tuners and Repairers</li> <li>• Numerical Control Machine Operators</li> <li>• Numerical Control Tool Programmers</li> <li>• Office Machine Repairs and Construction Equipment Operators</li> <li>• Page Layout Workers</li> <li>• Painters</li> <li>• Pipe Fitters</li> <li>• Plasterers</li> <li>• Plumber*</li> <li>• Potters</li> <li>• Power Plant Operators</li> <li>• Precision Assemblers</li> <li>• Refrigeration Technician*</li> <li>• Research Electrician</li> <li>• Sewing Machine Operators</li> <li>• Science Technicians</li> <li>• Semiconductor Processing Operators</li> <li>• Sewing Machine Operators</li> <li>• Sheet Metal Workers</li> <li>• Shoe and Leather Workers</li> <li>• Small Engine Mechanics</li> <li>• Social Science Research Assistant+</li> <li>• Stationary Engineers</li> <li>• Surveyors*</li> <li>• Storage and Transportation Managers (Minimum)</li> <li>• Structural Metal Workers</li> <li>• Surveying and Mapping Technicians*</li> <li>• Tank Car, Truck and Ship Loaders</li> <li>• Tailors</li> <li>• Technical Illustrator+ Technician</li> <li>• Tool and Die Makers*</li> <li>• Tool Grinders*</li> <li>• Tool Programmer*</li> <li>• Train Conductors and Yardmasters</li> <li>• Transportation Agents (Minimum)</li> <li>• Upholsterers</li> <li>• Vehicle Painters*</li> <li>• Watch Repairers</li> <li>• Web-Page Programmer</li> <li>• Welders and Solderers*</li> <li>• Welding and Soldering Machine Operators*</li> <li>• Woodworking Machine Operators</li> </ul>	<ul style="list-style-type: none"> <li>• Aerospace Engineers</li> <li>• Agricultural Engineers</li> <li>• Air Traffic Controller</li> <li>• Aircraft Mechanics--</li> <li>• Airport Engineer</li> <li>• Anthropologists--</li> <li>• Archeologists</li> <li>• Architects</li> <li>• Astronomers</li> <li>• Biologists--^</li> <li>• Biomedical Engineer--</li> <li>• Buyers and Purchasing Agents</li> <li>• Cartographers &amp; Photogrammetrists</li> <li>• Chemical Engineers--</li> <li>• Chemists--^</li> <li>• Civil Engineer--</li> <li>• Computer Programmer--^</li> <li>• Computer System Administrator--^</li> <li>• Construction Manager</li> <li>• Construction Site Supervisor</li> <li>• Cost Estimators</li> <li>• Electrical Engineer--</li> <li>• Electronic Engineer</li> <li>• Energy Systems Designer</li> <li>• Environmental Engineer--</li> <li>• Environmental Scientist--</li> <li>• Food Scientist</li> <li>• Geographers--</li> <li>• Geologist and Geophysicist--</li> <li>• Historian--^</li> <li>• Industrial Designer</li> <li>• Industrial Engineer</li> </ul>	<ul style="list-style-type: none"> <li>• Mapping Scientist</li> <li>• Marine Biologist</li> <li>• Material Machine Operators</li> <li>• Material Moving Machine Operators</li> <li>• Materials Engineer</li> <li>• Mathematician--^</li> <li>• Mechanical Engineer--</li> <li>• Medical Laboratory Technologist--</li> <li>• Medical Scientist</li> <li>• Metallurgist</li> <li>• Meteorologist--</li> <li>• Natural Sciences Manager</li> <li>• Nuclear Engineer</li> <li>• Petroleum Engineer</li> <li>• Photogrammetric Engineer</li> <li>• Physicist--^</li> <li>• Political Scientist--^</li> <li>• Ship Pilots</li> <li>• Social Science Research Assistant--^</li> <li>• Software Developer--</li> <li>• Statistician--</li> <li>• Stress Analyst</li> <li>• Structural Engineer</li> <li>• Surveyor Supervisor</li> <li>• Systems Analyst</li> <li>• Systems Engineer</li> <li>• Traffic Technicians</li> <li>• Transportation Inspectors</li> <li>• Welding Engineer</li> </ul>

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Programs offered at:

- \* St. Cloud Technical College
- + Rasmussen College
- # Minnesota School of Business/Globe College
- ~ St. Cloud State University
- ^ St. John's University/ College of St. Benedict

