



<b>Additive &amp; Subtractive Manufacturing</b>
This course will be focused on Additive/Subtractive Manufacturing, we will work with the CNC Mill, Lathe and CNC Router. Students will get a better understanding of Pneumatic systems and power transmission systems. Students will work with 3D modeling and 3D printers to create projects. Plastic Injection molding will be taught as well. Students will then work on projects that utilize all these skills.
<b>Algebra 1</b>
The first course in a four-year sequence that addresses the high school portion of the New Learning Standards for Mathematics. Description of the content appropriate for this course is identified in the Traditional Pathway of Appendix A and/or the Model Content Framework.
<b>Algebra 1 Honors</b>
The first course in a four-year sequence that addresses the high school portion of the New Learning Standards for Mathematics. Description of the content appropriate for this course is identified in the Traditional Pathway of Appendix A and/or the Model Content Framework.
<b>Algebra 2</b>
The third course in a four-year sequence that addresses the high school portion of the New Learning Standards for Mathematics. Description of the content appropriate for this course is identified in the Traditional Pathway of Appendix A and/or the Model Content Framework.
<b>Algebra 2 Honors</b>
The third course in a four-year sequence that addresses the high school portion of the New Learning Standards for Mathematics. Description of the content appropriate for this course is identified in the Traditional Pathway of Appendix A and/or the Model Content Framework.
<b>American History</b>
A high school level course centered on the study of America’s past. This course is aimed at studying the major events, eras, and social issues from 1877 to the present through three different lenses: Law, Economics, and War. To accomplish this goal this course uses primary and secondary sources to analyze these epochs of American Society to gather a deeper understanding and consider alternative points of view from then and now.
<b>American History Honors</b>
A high school level course centered on the study of America’s past. This course is aimed at studying the major events, eras, and social issues from 1877 to the present through three different lenses: Law, Economics, and War. To accomplish this goal this course uses primary and secondary sources to analyze these epochs of American Society to gather a deeper understanding and consider alternative points of view from then and now.
<b>Biology</b>
High school level course that satisfies Ohio’s science graduation requirements as required by section 3313.603 of the Ohio Revised Code which requires inquiry-based laboratory experiences that engage students in asking valid scientific questions and gathering and analyzing information. Content from this course contributes to the Ohio Graduation Test. Course includes content found in Ohio’s New Learning Standards and Model Curriculum for Science, High School Biology.
<b>Biology Honors</b>
High school level course that satisfies Ohio’s science graduation requirements as required by section 3313.603 of the Ohio Revised Code which requires inquiry-based laboratory experiences that engage students in asking valid scientific questions and gathering and analyzing information. Content from this course contributes to the Ohio Graduation Test. Course includes content found in Ohio’s New Learning Standards and Model Curriculum for Science, High School Biology.



<b>Biomedical Engineering</b>
Biomedical Science is a course that integrates the principles of human anatomy and physiology with cutting edge lab techniques. Students will learn how to use their new lab skills in a clinically relevant way, and how to work in a collaborative fashion to solve problems.
<b>Bioengineering</b>
Biomedical Science is a course that integrates the principles of human anatomy and physiology with cutting edge lab techniques. Students will learn how to use their new lab skills in a clinically relevant way, and how to work in a collaborative fashion to solve problems.
<b>Foundations of Trades 1 &amp; 2</b>
This course is going to focus on basic fundamentals of trades. We will learn measurement, equipment safety, light construction, residential wiring, some drywall repair and installation, cutting stairs and rafters. We will also do some small customer service projects given the opportunity.
<b>Chemistry</b>
Advanced high school level course that satisfies Ohio Core science graduation requirements as required by section 3313.603 of the Ohio Revised Code, which requires inquiry-based laboratory experiences that engage students in asking valid scientific questions and gathering and analyzing information. Course includes content found in the Revised Academic Content Standards and Model Curriculum for Science, High School Chemistry.
<b>Chemistry Honors</b>
Advanced high school level course that satisfies Ohio Core science graduation requirements as required by section 3313.603 of the Ohio Revised Code, which requires inquiry-based laboratory experiences that engage students in asking valid scientific questions and gathering and analyzing information. Course includes content found in the Revised Academic Content Standards and Model Curriculum for Science, High School Chemistry.
<b>Coding</b>
Students will get an introduction into the coding language and basic coding commands. Drag and drop along with javascript code will be used for projects including drone control, a game, sensor driven servo motors, and app creation. Terms such as pitch, roll, and yaw will be covered as an introduction to drones with students. Students will also be working with CAD software to compliment the projects.
<b>Computer Integrated Manufacturing</b>
Students will learn the fundamentals of Industrial Hydraulic Systems, CNC Machining Centers, Industrial Robotics, PLC programming using ladder logic, Drafting and Design Concepts with the use of Autodesk Inventor as well as how to construct and analyze AC/DC electrical circuits.
<b>Current Events</b>
Students will use resources to tackle complex issues found in the news today. Students will debate the many points that feed into the decision making of government, corporate and other leaders in our country, state and local communities. Students will choose and research issues they are interested in as well as take on common issues as a class.
<b>Energy Systems Management</b>
Students will apply basic principles of energy accounting, thermodynamics and heat transfer, energy conversion and efficiency to heating, power generation and transportation. Students will apply the principles and practices needed for managing both renewable and non-renewable energy sources including, solar thermal, hydrogen generation, photovoltaic, hydroelectric, biomass use, geothermal heat transfer, and fossil fuel. Future energy systems and energy use scenarios are investigated, with a focus on promoting the use of renewable energy resources and technologies.



<b>Engineering Logic</b>
Students will learn the fundamentals of electricity and related terminology. Students will work with AC/DC electrical training systems to construct various series and parallel circuits as well as the related math formulas such as Ohm's law to perform a circuit analysis of the circuits they build with the use of a digital multimeter.
<b>Engineering Principles</b>
Students will get hands-on experience with engineering fundamentals such as sketching and 3D modeling as well as digital design software.. They will be introduced to subtractive manufacturing, CNC Router and laser engraving. They will be exposed to additive processes such as 3D printing and vacuum forming and some fundamentals of electricity, both AC and DC systems.
<b>English 10</b>
English Language Arts Instruction addresses the content and skills of Ohio's Academic Content Standards for English Language Arts. Students will read a variety of texts for different purposes, utilize the writing process, write for different purposes and different audiences, research self-selected or assigned topics, use an appropriate form to communicate their findings and continue to use effective communication techniques.
<b>English 10 Honors</b>
English Language Arts Instruction addresses the content and skills of Ohio's Academic Content Standards for English Language Arts. Students will read a variety of texts for different purposes, utilize the writing process, write for different purposes and different audiences, research self-selected or assigned topics, use an appropriate form to communicate their findings and continue to use effective communication techniques.
<b>English 9</b>
English Language Arts Instruction addresses the content and skills of Ohio's Academic Content Standards for English Language Arts. Students will read a variety of texts for different purposes, utilize the writing process, write for different purposes and different audiences, research self-selected or assigned topics, use an appropriate form to communicate their findings and continue to use effective communication techniques.
<b>English 9 Honors</b>
English Language Arts Instruction addresses the content and skills of Ohio's Academic Content Standards for English Language Arts. Students will read a variety of texts for different purposes, utilize the writing process, write for different purposes and different audiences, research self-selected or assigned topics, use an appropriate form to communicate their findings and continue to use effective communication techniques.
<b>Geometry</b>
The second course in a four-year sequence that addresses the high school portion of the New Learning Standards for Mathematics. Description of the content appropriate for this course is identified in the Traditional Pathway of Appendix A and/or the Model Content Framework.
<b>Geometry Honors</b>
The second course in a four-year sequence that addresses the high school portion of the New Learning Standards for Mathematics. Description of the content appropriate for this course is identified in the Traditional Pathway of Appendix A and/or the Model Content Framework.
<b>Health</b>
Educational activities that promote understanding, attitudes, and practices consistent with individual, family, and community health needs and healthy lifestyles.
<b>History Through Film 1</b>
Students will learn concepts of U.S. and World History through the use of classic and contemporary films as tools and primary sources in the study of history. A brief overview of the history of the motion picture industry will be incorporated



to help students relate the concepts of each film to its contextual history.
<b>History Through Film 2</b>
Students will learn concepts of U.S. and World History through the use of classic and contemporary films as tools and primary sources in the study of history as an expansion of the information covered in the first course. A brief overview of the history of the motion picture industry will be incorporated to help students relate the concepts of each film to its contextual history.
<b>Advanced STEM &amp; Industrial Maintenance</b>
In Advanced STEM, students will work on advanced STEM projects, these include skills learned in the lab and beyond. Students can choose projects that they want to do and run equipment they want to run. The Industrial Maintenance component will require students to complete projects for customers, this may include quoting, designing and manufacturing parts for customers. Entrepreneurship will be another area of focus, students will start to get an understanding of how business works, how items are priced, and how to plan work in a busy environment.
<b>Integrated Math 9</b>
The first course in a four-year sequence that addresses the high school portion of the New Learning Standards for Mathematics. Description of the content appropriate for this course is identified in the Integrated Pathway of Appendix A and/or the Model Content Framework.
<b>Integrated Math 10</b>
The second course in a four-year sequence that addresses the high school portion of the New Learning Standards for Mathematics. Description of the content appropriate for this course is identified in the Integrated Pathway of Appendix A and/or the Model Content Framework.
<b>Integrated Reading 9</b>
Integrated Language Arts Instruction addresses the content and skills of Ohio’s Academic Content Standards for English Language Arts. Instruction should be based on the benchmarks for grades 8-10 and grade level indicators for grade nine. Students will read a variety of texts for different purposes, utilize the writing process, write for different purposes and different audiences, research self-selected or assigned topics, use an appropriate form to communicate their findings and continue to use effective communication techniques.
<b>Integrated Reading 10</b>
Integrated Language Arts Instruction addresses the content and skills of Ohio’s Academic Content Standards for English Language Arts. Instruction should be based on the benchmarks for grades 8-10 and grade level indicators for grade ten. Students will read a variety of texts for different purposes, utilize the writing process, write for different purposes and different audiences, research self-selected or assigned topics, use an appropriate form to communicate their findings and continue to use effective communication techniques.
<b>Intro to Drones 1 &amp; 2</b>
From artists to engineers, from real estate to agriculture, drones are becoming the tool of choice for multiple industries. In this course, students will learn to pilot and program drones for flight to solve tasks. Using a variety of drones, students will learn safe flight practices while piloting drones. Drone flight will incorporate line-of-sight as well as the use of FPV goggles. Students will also learn to use Python programming language combined with various sensors to fly the drones autonomously.
<b>Local/State Government</b>
The study of specialized social studies topics such as the study of the current community and regional policies and laws as well as the history of the area.
<b>Physical Education</b>

## Valley STEM + ME2 Academy - Course Descriptions



<p>A comprehensive subject area which incorporates fundamental motor skills, body control and balance, physical fitness, leisure sports and games skills, cognitive skills, as well as stress management skills.</p>
<b>Physical Science</b>
<p>High school level course that satisfies Ohio's science graduation requirements as required by section 3313.603 of the Ohio Revised Code, which requires inquiry-based laboratory experiences that engage students in asking valid scientific questions and gathering and analyzing information. Content from this course contributes to the Ohio Graduation Test. Course includes content found in Ohio's New Learning Standards and Model Curriculum for Science, High School Physical Science.</p>
<b>Principles of Manufacturing</b>
<p>This course will be focused on Subtractive Manufacturing, we will work with the CNC Mill, Lathe and CNC Router. Students will get a better understanding of Pneumatic systems and power transmission systems. Students will work with 3D modeling and 3D printers to create projects. Plastic Injection molding will be taught as well. Students will then work on projects that utilize all these skills.</p>
<b>Psychology</b>
<p>The study of the human mind and its influence on behavior.</p>
<b>Robotics</b>
<p>Students will learn to work with and code a 6-axis robot, including using inputs and outputs to drive the code, create and use electronic circuits, become familiar with physical computing, and work on wiring and coding basic PLC devices. Students will also work with the engineering design process to create and code their own robotic projects. Students may be exposed to robotC, python, html, and ladder logic in an attempt to understand how to effectively communicate and utilize computers to accomplish tasks.</p>
<b>Sociology</b>
<p>The study of social relationships, institutions, and group behavior in societies.</p>
<b>Spanish I</b>
<p>The study of the language and culture of the Spanish-speaking world leading to the ability to communicate in a range of situations and glean meaning from a variety of texts.</p>
<b>Spanish II</b>
<p>The study of the language and culture of the Spanish-speaking world leading to the ability to communicate in a range of situations and glean meaning from a variety of texts.</p>
<b>Technology Innovations</b>
<p>Students will learn to work with and code a 6 axis robot, including using inputs and outputs to drive the code, create and use electronic circuits, become familiar with physical computing, and work on wiring and coding basic PLC devices. Students will also work with the engineering design process to create and code their own robotic projects. Students may be exposed to robotC, python, html, and ladder logic in an attempt to understand how to effectively communicate and utilize computers to accomplish tasks.</p>
<b>World History</b>
<p>A high school course centered around the history of the world. This course starts by teaching students how to think like a historian and use primary and secondary sources. From there, students learn The Age of Exploration to the Cold War. While studying, students are empowered to connect history to modern technology and social issues.</p>
<b>World History Honors</b>

## Valley STEM + ME2 Academy - Course Descriptions



A high school course centered around the history of the world. This course starts by teaching students how to think like a historian and use primary and secondary sources. From there, students learn The Age of Exploration to the Cold War. While studying, students are empowered to connect history to modern technology and social issues.

### **Writing 1 (CCP)**

College Credit Plus course, Introduction to English course through Youngstown State University taught by staff member

### **Youngstown State University - CCP Offerings**

American Literature and Diversity, Communication Foundations, General Psychology, Introduction to Sociology, Writing 1 with Support, and Writing 2.

### **Eastern Gateway Community College - CCP Offerings**

Art History I, Earth Science, English Composition I, English Composition II, Introduction to Literature, Music Appreciation, Public Speaking, US History - The Modern Period, World Geography, and World Civilization.