PATHWAYS ACADEMY
OF TECHNOLOGY & DESIGN

PROGRAM OF STUDIES

2017-2018

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VISION, MISSION, AND THEME

VISION

Pathways Academy of Technology and Design empowers its diverse community of students to develop the skills needed to become fully active participants in our global, technology-driven society. Through Project-Based Learning students acquire technological and critical thinking skills, and develop a sense of personal and social responsibility that enables them to successfully participate in a growing, fast-paced, and rapidly changing world economy.

MISSION

Pathways Academy of Technology and Design seeks to accomplish its vision through:

- Employing innovative and collaborative learning through the use of cutting-edge technology and Project-Based Learning (PBL)
- Providing rigorous academic curricula focusing on high achievement
- Fostering a belief that all students can achieve
- Establishing a team of dedicated and knowledgeable professionals willing to grow with the changing technological world
- Developing partnerships with the business community that allow students to explore work-based experiences such as mentoring, internships, and career exploration
- Reducing racial, ethnic, & economic isolation of students in urban, suburban, and rural schools
- Encouraging parents, students and teachers to work together to create a positive and safe learning environment

THEME

Pathways Academy of Technology and Design offers a rigorous academic program utilizing the tools of technology and emphasizing technology-related skills as well as career exploration and preparation for higher education and/or employment in the field of technology. Students will have exposure in all areas of technology. Students have the opportunity to participate in job shadowing and internship positions in the area of technology. The tools of technology are utilized to help students achieve and/or maintain high expectations set by the magnet school.

INSTRUCTIONAL METHOD

Students are most successful when they learn within a collaborative culture. Project-Based Learning (PBL) is the instructional method Pathways uses to help deliver our curricula. PBL is centered-around a driving question or challenge that a teacher proposes to his or her class. The students use their innovation and inquiry skills to investigate the problem. The learning becomes quite authentic when students decided on a publicly presented product. PBL provides many opportunities for student voice and choice as well as feedback and revision. Students must have 21st century skills; including the skills to collaborate and communicate effectively in order to be successful in completing a project. These requirements make learning real-life, thus enhancing the level of commitment and buy-in from students. Students can then take these skills and more efficiently adapt to college and a career.

HARTFORD SYSTEM OF SCHOOLS MISSION

The Board of Education will provide all students with high quality distinctive high schools in which students can attain a Hartford Public School high school diploma that reflects a standards-based college-ready curriculum designed to meet the high educational outcomes of the State of Connecticut and prepare all student to be competitive candidates for entrance into a four-year college program. Students' education will consist of rigor, relationships, and relevance.

NONDISCRIMINATORY POLICY

The Hartford Board of Education complies with all applicable federal, state and local laws prohibiting the exclusion of any person from any of its educational programs or activities or the denial to any person of the benefits of any of its educational programs or activities because of race, creed, color national origin, ancestry sex, sexual orientation, gender identify or expression, marital status, age or disability subject to the conditions and limitation established by law.

The preamble to Title IX of the Education Amendments of 1972 states that:

No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance.

STUDENT ACADEMIC EXPECTATIONS

Pathways Academy of Technology & Design is first and foremost an academic institution committed to advancing the knowledge and skills of our students. Students are measured by their performance in three areas: reaching benchmarks within each curriculum to demonstrate course specific content, 21st century skill acquisition through Project-based learning, and upholding the core values of Pathways including scholarship, leadership, and citizenship. For district policies on student records, homework, school ceremonies and observations, please see the Parent-Student Handbook.

GRADUATION REQUIREMENTS

For details on Pathways' graduation requirements please see the Program of Studies attached at Appendix 1.

GRADING AND GPA

Each marking period a student will receive a letter grade (A-F). This grade, along with the course "weight" is used to determine the student's Grade Point Average. "Honors" courses will be weighted .25 and courses designated as "Advanced Placement" will be weighted .5 higher than college level (1.0) courses. Academic honors are determined by the GPA at the end of each marking period. Students with a marking period GPA from 3.0 to 3.99 are on the Honor Roll and students with a GPA from 4.0 to 5.0 are on the High Honor Roll. A cumulative GPA is calculated each marking period and reflected on the student transcript.

Grading System	AP/ECE/DE	Honors	College Prep
A+ 100-97	5.00	4.50	4.0
A 96-93	4.50	4.50	4.0
A- 92-90	4.70	4.20	3.7
B+ 89-87	4.30	3.80	3.3
B 86-83	4.00	3.50	3.0
B- 82-80	3.70	3.20	2.7
C+ 79-77	3.30	2.80	2.3
C 76-73	3.00	2.50	2.0
C- 72-70	2.70	2.20	1.7
D+ 69-67	2.30	1.80	1.3
D 66-63	2.00	1.50	1.0
D- 62-60	1.70	1.20	0.7
F 59-0	0.00	0.00	0

HARTFORD
PUBLIC SCHOOLS
Where the future is present.

Minimum Graduation Requirements for Classes 2015-2020		
Required Courses*		
Area	Credits	Requirements
English	4 Credits	English I & II; Literature & Composition I & II
Math*	3 Credits	Including Algebra I, Geometry, Algebra II
Science	3 Credits	Including Biology, Chemistry Lab
History	3 Credits	Including 1.0 U.S. History, 1.0 International Studies 0.5 Civics, 0.5 Geography
Visual and Performing Arts	2 Credits	
World Language	2 Credits	
Physical Education	1.5 Credit	
Health, Nutrition, & Wellness	0.5 Credit	
School Thematic Courses	4.0 Credits	
Capstone Experience	1 Credit	
Total Credits Required		**24 Credits**

*Students will be required to take four years of Mathematics

Minimum Graduation Requirements for Classes of 2021+		
Required Courses*		
Humanities (11.0 Credits)		
Area	Credits	Requirements
English	4 Credits	2.0 English I & II; 2.0 Literature & Composition I & II
Social Studies	3 Credits	1.0 American History; 0.5 Civics and American Government; 1.0 World History **or** International Studies; 0.5 Social Studies Elective
World Language	2 Credits	2.0 World Language
Fine Arts	1 Credit	1.0 Fine Arts Elective
Humanities	1 Credit	1.0 Humanities Elective
STEM Courses (8 Credits)		
Area	Credits	Requirements
Math	4 Credits	1.0 Algebra I; 1.0 Geometry; 1.0 Algebra II **or** Probability & Statistics; and 1.0 Math Elective
Science	3 Credits	1.0 Biology with Lab; 1.0 Chemistry with Lab; 1.0 Science Elective
STEM	1 Credit	1.0 STEM Elective
Career and Life Skills (3.5 Credits)		
Area	Credits	Requirements
Physical Education	1 Credit	1.0 Physical Education
Health/Safety	0.5 Credit	0.5 Health and Safety Education
Career & Life Skills	2 Credits	2.0 Career & Life Skills Elective
Additional Requirements (2.5 Credits)		
Area	Credits	Requirements
Course Electives	1.5 Credits	1.5 School Thematic Courses **or** Open Electives
Capstone	1 Credit	1.0 Capstone Senior Demonstration or Equivalent
Total Credits Required		**25 Credits**

SERVICE LEARNING REQUIREMENT

In addition to academic requirements, students must fulfill the Service Learning Requirement. All students are required to participate in a minimum of 60 hours of service learning in order to graduate. It is suggested that students complete 15 hours per year, in order to be on track for graduation.

STUDENT SUCCESS PLANS & NAVIANCE

The Student Success Plan (SSP) is an individualized student driven plan that will be developed to address every student's needs and interests to help every student stay connected in school and to achieve postsecondary educational and career goals. The SSP will provide the student support and assistance in setting goals for social, emotional, physical and academic growth, meeting rigorous high school expectations, and exploring postsecondary education and career interests. The Student Success Plan at Pathways is hosted in Naviance, which is a comprehensive college and career readiness platform designed to help raise student accountability and performance in relation to the SSP.

- Ninth graders will be introduced to the graduation requirements, focusing on an academic goal, building a resume and exploring their strengths and potential career opportunities.
- Tenth graders review their progress toward graduation, continue resume development, create a PSAT study plan, create a career goal, take a personality inventory and continuing to review different careers.
- Eleventh graders will review their progress toward graduation, work towards a personal goal, create a SAT study plan, learn about careers that would be a good fit, discuss postsecondary plans, complete a college search and begin to compose a list of potential colleges.
- Twelfth graders will review their progress toward graduation, and work toward their postsecondary plans.

Naviance is a web-based resource for students and parents that encourages and supports post high school career and college planning. The following topics are available to students:

- Career Planning
- Learning Style Inventory, Interest Inventory, Personality Inventory, Resume Building
- College Planning
- College Search, Application Process, College Major Exploration, Scholarship/Financial Aid Resources
- Success Planning
- Personalized Goals and Tasks, Journal Entries, Student Planner

SAT

On October 7th, 2015, the Connecticut State Board of Education adopted the SAT as the statewide assessment in lieu of the Smarter Balanced Assessment for Grade 11 public school students. This assessment was endorsed by Governor Malloy and has been approved by the U.S. Department of Education as part of Connecticut's ESEA Flexibility Request. The SAT will be administered during the school day to all Grade 11 students in all public schools in Connecticut. One make up day is provided. Per federal law, SAT participation rates will continue to be a component of Connecticut's accountability system. There are three parts of the SAT: Reading, Writing and Language, and Mathematics. The SAT is a three-hour test. For more information on test administration, accommodations for students with special needs and English learners, data privacy, release of student results to colleges, etc. please visit our website at http://www.pathwaystotechnology.com

THEMED PROJECT PORTFOLIO

Pathways is using Themed Project Portfolios ("Portfolios") to accomplish the following educational goals:

1. To deepen our students' critical thinking skills by having them comprehend and analyze one theme from the perspectives of many different intellectual disciplines.
2. To develop our students' project planning and execution skills by having them do a series of projects using the same rubric and using their evaluations from one project to set focus areas for the next.
3. To develop our students' technology skills by having them use a variety of technological tools in a set of projects and create an online e-portfolio through Weebly.
4. To develop our students' creativity by giving them a substantial role in conceiving ideas for their own projects.
5. To build character among our students by having them reflect on their own personal development in the Five Key Areas: (1) critical thinking; (2) planning and collaboration; (3) product;(4) reflection and revision; and (5) growth .

Method:

In addition to the many other projects that Pathways students normally do, each student will complete 5-7 Themed Projects -- one project in each of their seven different classes. Each Themed Project will include a written reflection completed at the conclusion of the project and each reflection must include a rough draft with teacher comments and a final draft that has been revised according to those comments. The Themed Projects will be spread out over the year, from September through April, according to subject area.

Advisory teachers will serve as their advisory students' Portfolio Instructors. Part of Advisory will be dedicated to the Themed Project Portfolio process. Students will individually meet with their advisor once at the beginning of the year to:

(1) review the portfolio process

(2) reflect on what areas of strength and weakness they think they have related to this process

(3) set some focus areas for personal development for this year in the portfolio process.

Advisors will continue to meet with students throughout the year to check in on portfolio progress, conduct a mid-year review, and then a final evaluation at the end of the year.

In May of each year students will accumulate their Themed Project reflections and some evidence of each project into a single e-Portfolio with a written introduction and a year-end reflection. This reflection will address their thoughts about the theme and their growth in the Five Key Areas, especially the ones they chose to focus on, by referring to at least three of their Themed Projects. During the month of May every student will present their portfolio to an evaluator who will ask questions and then give feedback. Evaluators will include teachers, other faculty and community members, including IAB, and Presentation Day will be a major school event. After getting feedback from their evaluators students will finalize their portfolios and present them to their portfolio instructor for a final grade and feedback. The completion of a Portfolio each year will be a graduation requirement.

ePortfolio Requirements

Beginning the 2016-2017, students will be creating a Pathways ePortfolio using Weebly to showcase your yearly Themed Project Portfolio among other important areas of your high school career. You will grow this ePortfolio throughout your years as Pathways and it will be a public document that you can show potential employers and colleges.

This ePortfolio will be a visual display of your student work and talent and therefore reflective of your personality and individual interests and goals. It will also serve as a component of the student internship process, and you will show your ePortfolio to potential employers as you interview to gain employment at a paid internship.

You will receive training on how to create an ePortfolio using Weebly through either your technology classes or your advisory. Your advisory teacher will have your Weebly username or password. You will have time throughout the year to work on your ePortfolio and receive peer and teacher feedback before you present it at the annual showcase on Wednesday, May 17th, 2017.

List of Items that will be required in your ePortfolio by Pathways graduation:

- Welcome/Introduction about yourself and your goals
- Photo (pictures/logos that represent yourself)
- Current Resume
  - Video Resume (if created)
- Cover Letter
- Coursework
  - List of all the courses you have taken at Pathways
- Themed Project Portfolio for Grades 9, 10, and 11
  - Summary of each project
  - Link to your project
- Internship
  - Summary of your internship
  - Description of the work you did at your internship
  - Logo and facts about the company
  - Internship Presentation
  - Internship Evaluator Summary
- Capstone Project for 12th Grade
- Exemplary work
  - Additional exemplary work, outside of Themed Projects and Capstone, which you want to showcase
- Contact Information
  - Link to your LinkedIn profile

Visit the following Weeblys to see examples of Pathways ePortfolios:

http://angelicaortizz.weebly.com

http://aracelisfigueroa.weebly.com

COURSE LEVELS

The Pathways Academy of Technology and Design subjects are classified as Academic level and Honors level courses. Modifications to this level, however, can result in AP level courses or College courses based on student ability and staff recommendation. Specific information about a student's achievement and placement should be obtained from the school counselor.

CREDIT RECOVERY

Pathways Academy of Technology & Design's policy is that students will not be allowed to repeat a course that was previously failed. It is the student's responsibility to enroll in a summer credit recovery program. Particularly of note for seniors, if a senior fails to take a summer credit recovery program, they may have the ability to take it online during their senior year in our Saturday Academy program. Students may appeal this process by going through their school counselor. Appeals will be handled on a case by case basis.

CREDIT ENRICHMENT

Students may have the opportunity to take additional courses through the EdGenuity learning platform for credit enrichment. Students can coordinate credit enrichment with their school counselors.

COURSE SELECTION PROCESS

Each year students meet with their school counselor to plan a course for the following year. Parents are encouraged to be a part of this process. Factors to be considered include:

1. Graduation requirements
2. Grades and general academic achievement
3. Recommendations of present teachers
4. Career goals
5. Plans for higher education
6. Post-high school planning

DUAL CREDIT/CONCURRENT ENROLLMENT PROGRAM WITH GOODWIN COLLEGE

The Dual Credit program at Pathways Academy of Technology & Design allows high school students to earn high school and college credits simultaneously. Through dual credit agreement, Goodwin College and Pathways Academy of Technology & Design have selected courses that meet both high school and college learning objectives. Depending upon the course, these classes may be offered on the Goodwin College campus or Pathways Academy of Technology & Design campus and taught by either a Goodwin professor or Pathways teachers. After completion of dual credit classes, Goodwin Scholars may request a Goodwin College transcript showing those courses for which they have been awarded college credit.

To enroll in these classes the following must occur:

- The completion of a Goodwin College application
- Registration for the course through Goodwin College
- Attend a scholar orientation
- The parent or guardian of the scholar must attend a Goodwin College/Pathways Academy of Technology & Design Goodwin Scholar Parent and Family Night.

A student is eligible to enroll in dual credit courses if he/she meets one or all of the following requirements (Please refer to the detailed course descriptions for the specific requirements of each course).

- The student is in the eleventh or twelfth grade.
- The student has taken English 10 at Pathways Academy of Technology & Design and received a B+ or better in the course.
- The student has demonstrated outstanding academic performance and capability as evidenced by a grade point average of 3.0.
- The student meets all of the college's regular prerequisite requirements designated for that course (e.g., minimum score on a specific placement test, minimum grade in a specific previous course, etc.)
- The student has shown consistent adherence to behavioral and attendance expectations.

POST-SECONDARY INFORMATION

Numerous opportunities exist for students upon graduation from Pathways Academy of Technology & Design. Guidance will assist students over the four years with the development of career goals and post-secondary plans. Students will be oriented to college search methods as well as the college admissions and financial aid processes. Resources for the college search and career exploration are available in the Guidance Office.

Four-Year Colleges and Universities

Admission requirements for four-year colleges and universities vary greatly, but general guidelines can be very helpful for students in planning their program at the Pathways Academy of Technology & Design.

Subject	Credits
English	4 credits
Mathematics	4 credits (including Algebra, Geometry, and Algebra 2)
Science	3 credits (including a lab science)
Foreign Language	3 credits same language
Extracurricular activities that indicate leadership and initiative	
SAT (Scholastic Aptitude Test) or ACT	

Two-Year Colleges/Associate Degree Programs

Associate degree programs are usually two years in length and are offered at certain community or junior colleges. Students may enroll in a terminal program, which grants an associate degree, or a transfer program, which allows students to continue their education

at a four-year college or university. There are many opportunities for students in both traditional course offerings and specialized technical areas.

COURSE OFFERINGS AT PATHWAYS ACADEMY OF TECHNOLOGY AND DESIGN

ENGLISH

AP Literature and Composition
1 Credit
Prerequisite: English I, English II, Literature and Composition I or Goodwin College English 101, and instructor approval
This course focuses on careful and attentive reading, analytical and critical thinking, and fostering a love of imaginative literature. It will include close reading of a selection of fiction, drama, poetry, and critical essays ranging from the 16th to the 21st century with a focus on the concept of 'selfhood'. This course will be treated as an equivalent to college freshman English; as such, students should expect rigorous work including formal and informal examination. There will be several AP practice tests as the goal of this course is to have each student find success on the AP Examination in May. Seniors will be exposed to a wide-range of readings from all around the world, from several different genres, and ranging over many time periods. Class discussions focused around these texts will emphasize close observation of text (considering style, structure, and themes); social and historical context; and a variety of literary elements like figurative language, imagery, symbolism, tone, and mood.

Sample Texts: *Hamlet, Their Eyes Were Watching God, Pride and Prejudice, A Christmas Carol, The Catcher in the Rye, Things Fall Apart, The Handmaid's Tale, Ethan Frome, Frankenstein, Myths (a review),* and *How to Read Literature like a Professor*.

English 1
1 Credit
Freshman students will read and respond to at least four book-length texts (novels, plays, non-fiction) and a variety of other literature, including poetry, short stories, and film. Students will engage in a dynamic classroom environment, with an emphasis on interpretation, connection, and criticism, as well as the mechanics and function of the English language. Students will produce several writing assignments, including persuasive essays, book reviews, and creative works. Students will utilize technology for writing, reading, responding, and researching.

Sample texts: *The House on Mango Street, Romeo and Juliet/Julius Caesar, Swallowing Stones, Warriors Don't Cry, The Absolutely True Diary of a Part Time Indian, The Pearl, Animal Farm, The Curious Incident of the Dog in the Nighttime*

Honors English 1
1 Credit
Students enrolled in this course will experience a rich and dynamic environment of classroom collaboration and critical thinking. Students will read several pieces of text in the genres of nonfiction/memoir, fiction, and drama. As they respond to these texts, students will develop their critical thinking and questioning skills, and they will engage in collaborative classroom discussions in order to extend and enrich their thinking and interpretation of text. Working in structured learning circles, students will deepen their understanding of the text and explore meaningful themes and concepts. Students will

engage in one independent reading book project. As they utilize the writing process, students will complete six finished pieces of writing in a variety of genres. In addition, students will create a research question and develop an I-Search as the major research assignment for the semester. Students will also work rigorously on grammar, writing techniques and skills, such as MLA citations and format, and vocabulary.

Sample texts: *Romeo and Juliet, Fahrenheit 451, The Pearl, Swallowing Stones, Animal Farm, The Curious Incident of the Dog in the Nighttime*

Honors English 2
1 Credit
Prerequisite: English 1
Placement in Grade 10 honors level is determined by NWEA test scores, CMT scores, ninth-grade performance, and teacher recommendation. The volume of work and the pace of learning at the honors level require students with a seriousness of purpose in their commitment to academics. In this course, students read and analyze a variety of literary forms: short story, novel, drama, poetry, and short nonfiction as they develop reading, writing, speaking, listening, and thinking skills – with special emphasis on the skills necessary to succeed on the CAPT test. Students will write in response to literature—in journals, essays, and other writing tasks. Grammar and usage will be taught in the context of the writing process. Vocabulary will be taught through literature. Throughout the course, students will work as a community of learners in which they learn more by learning together. There are opportunities to work both independently and collaboratively.

Sample texts: *Of Mice and Men, Cry, the Beloved Country, Lord of the Flies, To Kill a Mockingbird, Antigone, Macbeth, Language and Literature, Black Like Me, Night, Fences*

English 2
1 Credit
Prerequisite: English 1
Sophomore students will continue their work from English 1 by continuing to read and respond to at least four book-length texts (novels, plays, non-fiction) and a variety of other literature, including poetry, short stories, and film. Students will engage in a dynamic classroom environment, with an emphasis on interpretation, connection, and criticism, as well as the mechanics and function of the English language. Students will participate in several writing assignments, including persuasive essays, book reviews, and creative works. Students will utilize technology for writing, reading, responding, and researching. In addition, one major focus will be preparation for the CAPT test.

Sample texts: *To Kill a Mockingbird, Lord of the Flies, Macbeth, Night, Of Mice and Men, Cry, the Beloved Country, Friends, The Giver, Fences*

Literature & Composition I
1 Credit
Prerequisite: English 2
Junior students will engage in a college-preparatory survey of American Literature, from the colonization of America to the present day. Students will be exposed to a variety of literature from the wide patchwork of our nations' cultures in genres of all types, from essays, poems and short stories to novels and films. Students will learn the major themes and developments throughout the literature of America and will learn to view the works in their social and historical contexts. Writing proficiency will be maintained and improved through regular, formal, and informal writing assignments. Students will utilize technology for writing, reading, responding and researching, and will receive instruction on SAT reading and writing strategies.

Sample texts/authors: Emerson, Whitman, Wheatley, *Walden*, *The Catcher in the Rye, Native Son, Their Eyes Were Watching God, Always Running, The Crucible, The Great Gatsby, The Adventures of Huckleberry Finn, A Raisin in the Sun, Death of a Salesman*

Literature & Composition II
1 Credit
Prerequisite: Literature & Composition I
Senior students will be exposed to a wide variety of literature from several cultures and time periods throughout the world, from Ancient Greece to post-colonial Africa. Students will study and analyze a variety of literature and discuss the texts in the historical and social contexts in which they were created. Students will utilize technology for writing, reading, responding and researching. Included in this course are periodic classes where students will become actively involved in the college application process and the completion of their college essay.

Sample texts: *Hamlet, Things Fall Apart, The Color of Water, Othello, Oedipus Rex, Perespolis, The Things They Carried,* short stories and poetry from Latin America and Asia

Reading
½ - 1 Credit
This class is designed for students to participate in a skills-based reading course to help improve reading, mechanics, and grammar skills in preparation for the rigors of the Pathways English program. Students will participate in on-grade-level vocabulary, spelling and grammar instruction as well as skills-based direct reading instruction. An emphasis will be placed on self-selected reading and developing habits of highly effective readers.

Goodwin College English 101
3 credits
Prerequisite: B+ or better in English II with a teacher recommendation
This course is designed to develop effective collegiate writing competencies. Students develop deeper understanding of the stages of the writing process, including generating, revising, proofreading, and editing essays. Using a collaborative approach, students will produce essays in various genres with emphasis on rhetorical effectiveness, focusing on organization, thesis, purpose, and audience awareness. The course emphasizes academic

inquiry through focused research, including retrieving, interpreting, and synthesizing sources effectively and ethically.

Goodwin College English 102
3 credits
Prerequisite: Goodwin College - English 101
This course provides additional composition skill building. Students are required to write extensively on topics related to various genres of serious literature and are expected to explain and support their ideas in writing. Focus is on learning how to read, interpret, and critically analyze literary selections.

MATHEMATICS

The intent of the high school mathematics program is to prepare all students to use mathematics and problem-solving skills in further education or on the job. The program focuses on mastering the objectives of the Smarter Balanced Assessment, problem-solving, communicating mathematically, reasoning mathematically, applying mathematics to real-world situations, and using technology. Our mathematics program offers a wide range of courses to provide students with opportunities to actively participate in learning the structure and the nature of mathematics, while developing analytic skills that will help them apply basic principles to other areas of study and everyday living. Each course is based upon a program of studies aligned with the Connecticut Common Core State Standards. Students may begin their studies at various levels based on their middle school math experience. Many students enroll in higher-level mathematics courses after successful completion of Algebra II.

All mathematics courses make use of Project-Based Learning, and technology in the form of computer software and/or graphing calculators. Technology allows students to visualize the mathematics that they are learning as well as lessening the burden of voluminous and complicated numerical computation. Students should check with their current mathematics teachers for recommendations about appropriate types of graphing calculators. The Mathematics Department suggests students purchase their own calculators (which will be used throughout their math program at the high school and beyond).

Math Requirement at Pathways

At Pathways Academy of Technology & Design, students are required to earn four credits of mathematics. Students must pass each course in order to graduate.
The math sequence is:

Level 1	Algebra I
Level 2	Algebra II
Level 3	Geometry with Data Analysis
Level 4	Pre-Calculus, Probability and Statistics, Mathematics for Engineering
Level 5	AP Calculus

If a student enters Pathways with an Algebra 1 credit, they would skip to Level 2 and only need to complete 3 credits of mathematics at Pathways. It is encouraged for students to take four credits of mathematics at Pathways if students are interested in pursuing a STEM field in post-secondary education.

Advanced Placement (AP) Calculus
1 Credit
Prerequisite: Pre-Calculus
This course emphasizes a multi-representational approach to calculus. Concepts, results, and problems are expressed graphically, numerically, analytically, and verbally. Content includes concepts and applications of differential and integral calculus, limits, and elementary differential equations. This course prepares students for the Calculus AB Advanced Placement examination, for which placement and/or credit may be awarded at the college level, if a qualifying score is obtained. Content of this college level course corresponds to the syllabus of the College Board Calculus AB Advanced Placement Program. All students are required to take the Advanced Placement exam.

Algebra I
1 Credit
The Algebra I course builds on foundational mathematics content learned by students in previous grades by expanding mathematics understanding to provide students with a strong mathematics education. Content is designed to engage students in a variety of mathematical experiences that include the use of reasoning and problem-solving skills, which may be applied to life situations beyond the classroom setting. This course serves as the cornerstone for all high school mathematics courses; therefore, all subsequent mathematics courses require student mastery of the Algebra I content standards.

Algebra II
1 Credit
Prerequisite: Algebra I
Algebra II is a course that extends the content of Algebra I and provides further development of the concept of a function. Topics include: relations, functions, equations and inequalities; conic sections; polynomials; algebraic fractions; logarithmic and exponential functions; sequences and series; and counting principles and probability.

Honors Algebra II
1 Credit
Prerequisite: Algebra I, and teacher recommendation
This course will enhance the higher-level thinking skills developed in previous Math courses through a more in-depth study of those concepts and exploration of some pre-calculus concepts. Students will be challenged to increase their understanding of algebraic, graphical, and numerical methods in order to analyze, translate and solve polynomial, rational, exponential, and logarithmic functions. Sequences and series will be used to represent and analyze real world problems and mathematical situations.

Honors Geometry
1 Credit
Prerequisite: Algebra I, and teacher recommendation
This is an accelerated geometry course designed for students who have been successful in an Algebra I course. Topics include inductive reasoning to identify patterns and to make conjectures about real world situations, as well as apply deductive reasoning in order to confirm their conjectures. There is a strong emphasis on Proofs in this course with additional topics on congruent and similar triangles, mid-segments of triangles, properties of special right triangles, and trigonometry.

Geometry
1 Credit
Prerequisite: Algebra I
Geometry builds on a number of key geometric topics developed in the middle grades, namely relationships between angles, triangles, quadrilaterals, circles, and simple three-dimensional shapes. Students studying Geometry will further develop analytic and spatial reasoning and move towards formal mathematical arguments and constructions. They apply what they know about two-dimensional figures to three-dimensional figures in real-world contexts, building spatial visualization skills and deepening their understanding of shape and shape relationships.

Mathematics for Engineering
1 Credit
This course builds on students' basic knowledge of geometry, while developing skills on the engineering design process. Students will apply math, science, and engineering standards to hands-on projects. Some projects include reverse engineering of real world objects, creating objects that can actually be used, as well as technical drawing (isometric/perspective drawing). They will work both individually and in teams to design solutions to real problems through extensive use of 3D modeling/AutoCAD software. Students will develop skills in problem solving, design, and research, as well as technical skills.

Pre-Calculus or Honors Pre-Calculus
1 Credit
Prerequisite: Algebra II (Honors, by teacher recommendation)
Pre-Calculus will emphasize a study of trigonometric functions and identities as well as applications of right triangle trigonometry and circular functions. Students will use symbolic reasoning and analytical methods to represent mathematical situations, express generalizations, and study mathematical concepts and the relationships among them. Students will use functions and equations as tools for expressing generalizations.

Probability and Statistics with Infographics
1 Credit
Prerequisite: Algebra I
Probability and Statistics is an activity-based introduction to statistics that emphasizes working with data, graphs, and statistical ideas including the use of statistical software. Students are expected to develop and present professional quality statistical analyses. Course content includes theory of probability, description of statistical measurements, sampling and experimental design, probability distributions, and statistical inference. The second part of the class will involve Infographics. Students will collect or otherwise conduct research for their data acquisition and analyze using statistical methods that range from measure of central tendency to ANOVA. Students will see how the graphics are used to tell the story of descriptive analysis leading to inferential analysis and providing conclusions.

PHYSICAL EDUCATION & HEALTH

Physical Education

½ Credit

The physical education program at Pathways Academy parallels the Connecticut State framework for physical education. It is based on the disciplines of motor learning, biomechanics, exercise physiology, human growth and development, sociology, and historical perspectives. It stresses physical education activities that help the student develop socially and emotionally as well as physically. We have two core phases: the fitness and sports model unit. The core program consists of department and district selected activities that are designed to introduce the student to Pathways Physical Education, physical fitness, as well as the many sports. Both groups will concentrate on an activity for an eight to sixteen week period. Through regular participation in physical education, the student realizes the value of active involvement in our program and receives instruction in sports and methods of maintaining fitness, which will have the potential to improve the quality of their adult life. The Fitness and Wellness core program will be duel: individual activities and physical fitness. The Sports and Games core program will offer team activities and physical fitness.

Health

½ Credit

Students will develop scientifically based understandings of the physiological, genetic, behavioral, social and cultural factors that support health and wellness. Upon completion of this requirement students will be able to: 1. Understand various challenges to human health and wellness, including an understanding of health risks; 2. Describe health promotion and illness prevention through study of nutrition, fitness, stress management, or other action strategies; 3. Demonstrate an understanding of themselves as active agents in their own health; and 4. Develop personal goals and programs for health and wellness using knowledge based upon principles from epidemiology, nutrition, kinesiology and other health sciences.

Yoga

½ credit

This class explores yoga, a physical practice that works the body through asana, or poses. This workout will build a flexible strong body, develop the core, rinse out toxins, dissolve tensions, and improve body composition. This class will start out at a beginning pace, progressing to power yoga at the end of the semester. Each class will end with a relaxation segment and or a guided visualization.

Strength and Conditioning

½ credit

Strength and conditioning is a physical education course that will focus on aerobic and anaerobic fitness. Students will be introduced to basic human anatomy and bioenergetics to understand how the human body works during exercise. Students will be given the tools to create a customized individual workout program to develop various areas of personal fitness. This course is for students who want to take an active role in improving their overall health and wellness.

SCIENCE

At Pathways, students will take a series of 3 courses aligned with the Next Generation Science Standards (NGSS). NGSS uses a 3 dimensional learning approach which intertwines cross-cutting concepts, including themes in science such as structure and function; science and engineering practices, such as making arguments from evidence, and disciplinary core ideas and key content. Students will take Physical Science in freshmen year, Biology in sophomore year, and Chemistry in junior year. Students who are interested in taking a fourth year of science may choose from: Physics, Biotechnology, or AP Biology.

Advanced Placement (AP) Biology/ Lab
1 Credit
Prerequisite: Physical Science, Biology, Chemistry, and instructor approval
The AP Biology course is designed to be the equivalent of a two-semester college introductory biology course usually taken by biology majors during their first year. It aims to provide students with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the rapidly changing science of biology. Topics covered in AP Biology include: biochemistry, cells, photosynthesis and respiration, molecular genetics, Mendelian genetics, evolution, classification and diversity of life, human/animal body systems, and ecology. Students will also complete and write lab reports for the 14 inquiry-based AP labs.

Biology and Honors Biology
1 Credit
Prerequisites: Physical Science
An introductory biology course designed to acquaint the student with the biological principles, which govern living things, and become better equipped to make logical decisions when presented with the biological problems of every life. An in-depth treatment of the following topics is presented: the scientific method, the chemical basis of life, the organization of living things, the diversity of life, genetics, ecology, and evolution.

Biotechnology
1 Credit
Prerequisites: Biology, Chemistry and instructor approval
Biotechnology is the science of manipulating living organisms and their genes to solve problems and create products that benefit society and the environment. Together with the science of genomics, biotechnology has revolutionized the field of medicine. This course explores the history of biotechnology and genomics along with the necessary content background in molecular biology. Students will learn about cloning, stem cell research, genetic screening and genetic engineering. Embedded in the curriculum is the examination of ethical issues, "bioethics", that are often raised about the products, techniques, and research surrounding Biotechnology. Students will also learn the laboratory techniques used in the field of biotechnology.

Chemistry and Honors Chemistry
1 Credit
Prerequisites: Algebra I, Prerequisites: Physical Science, Biology
This is an introductory chemistry course that integrates experimentation with extensive class discussion. The language of mathematics is employed often when investigating the concepts presented in this course. An in depth treatment of the following topics is presented: the scientific method, measurement, atomic structure, periodic table, stoichiometry, bonding, molecular geometry, phases of matter, gas laws, solutions, chemical equilibrium, acids and bases, oxidation-reduction, chemical kinetics, and thermodynamics.

Environmental Science
1 Credit
A comprehensive course covering the basic principles of ecology. Emphasis is placed on the impact of human activities on our environment. Topics include Biomes, Matter and Energy Interactions in the Ecosystems, Resources in the Biosphere, and Managing Human Impact on our Environment.

Physical Science
1 credit
Physical Science is the freshmen level science class that is designed to introduce many basic concepts that support chemistry and biology. This course is designed to act as a stepping stone to build up students' knowledge in critical scientific reasoning and the scientific method. The course has a heavy focus on inquiry and project based learning while aligned to NGSS standards for freshmen science. The course covers chemical bonding and atomic structure, astronomy, geology, electrical systems, and ecology. The course will also be computer-based, and students will be utilizing materials, tools, and principles used in the freshmen technology rotation, which students take concurrently.

Physics
1 Credit
Prerequisites: Physical Science, Biology, Chemistry and instructor approval
This course is an introduction to the basic principles of physics. Physics is the holistic study of nature, including natural and anthropogenic phenomena, ranging from a single atom to the vast universe. In this course, students conduct field and laboratory experiments using scientific methods to make informed decisions about data. Topics to be studied include motion, force, energy, and their relationship.

SOCIAL STUDIES

Civics

½ Credit

Civics provides the foundation for students' active and informed participation in our society, and for understanding the interaction between the ideals, principles, and practices of citizenship. This course examines the structure of the United States Constitution and the Bill of Rights, with a focus on the role and structure of the three branches of government, types of political systems, the electoral process and the role of government in our society.

Geography

½ Credit

World Geography integrates the study of geographical knowledge, skills and perspectives to take students on a journey around the globe. Geography examines the complex relationships between people and their environments. The study of geographical themes and global issues will be highlighted as students study the world's regions. The development of reading and writing, as well as social studies skills and technology integration, will be the focus of this course.

International Studies

1 Credit

International Studies is an introduction to the major concepts, issues and patterns in our world. This project-based course will allow students to explore the global issues that not only affect them, but the various people and cultures around the "small" world in which they live. They will make the important connections needed to live and work in a global society. The course includes an issue-based exploration of today's interdependent world. Students will study current history-making events and issues throughout the world and examine the impact of these events upon our world, nation, community, and our own lives.

Psychology

½ Credit

Prerequisite: Instructor approval

This introductory course in Psychology introduces students to the scientific study of the behavior and mental processes of human beings. Students study the knowledge and theory associated with the study of human behavior, learning, and the human mind, as well as the methods psychologists use in their science and practice.

Senior Capstone

½ Credit

This class will guide teacher selected Pathways seniors on their journey to complete the Capstone Project. This project is a graduation requirement and fulfills the additional credit of Capstone when successfully completed. The mission is to engage each student in a personalized learning experience. The project allows students the opportunity to apply and demonstrate interdisciplinary skill and knowledge acquired in high school while investigating a specialized area of interest.

U.S. History

1 Credit

This course investigates the forces that shape the political, social, and economic institutions of the modern American. An in-depth exploration of the United States in the 20th century and today, including contemporary issues and the place of the United States in the global world, will provide the framework for study. The continued development of historical themes, including the meaning of freedom and of historical thinking skills will be a focus of this course.

TECHNOLOGY & DESIGN

See the attached document for the technology and design course tracks and course description.

Pathways Academy of Technology & Design
Technology & Design Strands

	Technology			***Media***				***Design***
	Manufacturing Track	**Computer Science Track**		**Gaming & APP Development Track**		**Digital Media Track**		**Design Track**
Level 1	**Freshman Rotation** Business Communications ¼ credit	**Freshman Rotation** Intro to Computer Applications – ¼ credit Intro to Programming – ¼ credit Intro to Web Design – ¼ credit				**Freshman Rotation** Intro to Digital Video & Media – ¼ credit		Fundamentals of Design 1/2 credit ***D/FA***
Level 2	Design & Innovation 1 credit ***T***	Programming ½ credit ***T***		Video Game Design ½ credit ***T***	Immersive Game Environments ½ credit ***T***	Digital Video & Media ½ credit ***T***	Music Technology ½ credit ***T/FA***	Graphic Design 1 credit ***D/FA***
	Automation & Robotics I ½ credit ***T***	Introduction to Networking ½ credit ***T***	Database Design ½ credit ***T***	Mobile Application Design 1 credit ***T***		Sound Production I ½ credit ***T/FA***	T.V. Production I ½ credit ***T***	Digital Photography ½ credit ***D/FA***
	Automation & Robotics II ½ credit ***T***	Web Design ½ credit ***T***	Design of the User Experience ½ credit ***T***	3D Animation 1/2 credit ***T***				Advanced Design Portfolio 1 credit ***D/FA***
Level 3	Advanced Manufacturing ½ credit ***T***	Advanced (AP) Computer Science 1 credit ***T***		Advanced (AP) Computer Science 1 credit ***T***		Advanced Sound Production ½ credit ***T/FA***		Advanced Art ½ credit ***D/FA***
		Cisco 1 credit **T**				Advanced T.V. Production ½ credit ***T***		
½ OR FULL CREDIT COURSE OFFERINGS IN THE TECHNOLOGY & DESIGN DEPARTMENT ***T= TECHNOLOGY CREDIT D=DESIGN FA= FINE ART credit***								

Requirements

- Classes that are shown side by side (e.g., Introduction to Networking & Database Design) are linked classes so students will take both sections within the same year.
- All students must complete 4 technology credits and 1 credit of fine arts. Within these, students must complete all the courses in Level 1; and within a single track, students must complete 2 credits of Level 2 courses, and 1 Level 3 (full credit or ½ credit) course.

FRESHMEN TECHNOLOGY ROTATION

Freshman Technology Rotation

Business Communications

¼ Credit

Business Communications thoroughly covers the basics of written and oral workplace communication. Emphasis on grammar, math, business ethics, and the "team" concept wil be discussed. This will include a project that will team students to work on an entrepreneurial business of their own and be prepared to present their findings in a stude desired media format. Topics include: interpersonal communication, ethical issues, business development and more.

Introduction to Computer Applications

¼ Credit

This course is a globally recognized standard for demonstrating technical proficiency a expertise in the Microsoft Office suite of productivity applications. Students can prepare f the MOS Master certification or simply garner fundamental and advanced skills with any these Microsoft productivity applications: Microsoft Word, Excel, PowerPoint, Acce Outlook. MOS certification is based on successfully passing exams in Microsoft Office.

Introduction to Digital Video and Media

¼ Credit

This course introduces students to the major phases of digital video production. Studer learn the basics of planning a digital video project, shooting the footage, as well as ba editing techniques.

Introduction to Programming

¼ Credit

Students learn the fundamentals of computer programming using the Alice programmi environment. Students will learn about objects, classes, and methods by creating interacti 3-dimensional worlds.

Introduction to Web Design

¼ Credit

This course teaches HTML programming for web page creation, from the history of the World Wide Web to formatting text and lists, and inserting images and tables on web pages. Students will create model web pages and pages of their own design, all demonstrating proper coding techniques. All students will acquire programming skills applicable to many other courses and capable of creating a web page for any other class project.

MANUFACTURING TRACK

3D Modeling

½ Credit

Advanced 3-D Modeling and Animation is a one-semester elective that advances the skill level of students in the creative world of digital modeling and animation using the Autodesk Maya Entertainment suite. Autodesk Maya is the industry standard 3-D software used to create animated films, video games, medical visualizations, and special effects for films. Autodesk Mudbox is one of the leading sculpting and modeling programs that integrates seamlessly with the Maya environment. The objective of the course is to develop a deeper understanding of the advanced features of 3-D animation. The course will develop skills in modeling, animation, textures, lighting and rendering. The software used in these courses is the consensus industry-standard and used by animators at Pixar, Disney and most major studios.

Advanced Manufacturing

½ credit

Prerequisites: Completion of 2 Level 2 courses in the Advanced Manufacturing track

This course will be offered in 2018-2019

Advanced Manufacturing is a hands-on creative experience of the engineering design process. This course utilizes Science, Technology, Engineering and Math to create real life parts. Students will utilize geometric math skills and CAD software to electronically draw 2D and 3D models. Students will utilize safety skills and multiple manufacturing tools to make 3D models into real parts. The course will give students a broad look into what it takes to develop a product from conceptual idea to finished product. There will be an opportunity for work-based learning experiences through job shadows, guest speakers, and worksite tours, as well as internships. Seniors will also be expected to complete their Capstone project within the field of Advanced Manufacturing.

Automation & Robotics I

½ Credit

Introduction to Robotics is a one-semester integrated STEM course. The primary objective of the class is to develop engineering design skills by completing a series of hands-on robotics projects. The secondary objective is to develop programming skills to control the robot projects. The Robotics course uses classroom-friendly technologies to develop students' problem solving and reasoning skills by placing them in technology-rich situations where they must find the science, engineering and/or programming application to unlock the solution to the problem and then apply that rule across multiple contexts. The goal of the engineering design portion of the project is to teach students a research-based systematized method for solving engineering design problems. The project places programming and design engineering in contexts that students understand, encourages teamwork and integrates a systems ways of thinking.

Automation & Robotics II
Prerequisite: Automation & Robotics I
½ Credit
The purpose of Robotics II to is to apply engineering and robotics skills learned in robotics I to a series of challenges. The students will be presented with a problem or goal that they will then have to construct a robot to complete. This course will incorporate the use of CAD to design robots and build new custom parts. These parts will be 3D printed and used to augment their robots. Ultimately the students will be studying, designing and problem solving using STEM skills.

Design & Innovation
1 Credit
This course covers essential business and entrepreneurship concepts about how to start and run a small business enterprise. In collaboration with the National Foundation for Teaching Entrepreneurship (NFTE), this course will allow students to create a product of their own design. Students in this course will discover the difference between inventor and innovator. They will learn about historical inventions that changed the world and innovators that have influenced society will be researched and studied. Students will utilize the engineering design process and create a business plan based on their innovation. Students will enter business plans and innovations/inventions in various state and national competitions.

COMPUTER SCIENCE TRACK

AP Computer Science A
1 Credit
Prerequisites: 2 credits of Level 2 courses in the Computer Science Track; instructor approval
Computer Science A emphasizes object-oriented programming methodology with an emphasis on problem solving and algorithm development and is meant to be the equivalent of a first-semester course in computer science. It also includes the study of data structures and abstraction.

Advanced Database (CISCO)
1 Credit
Prerequisites: 2 credits of Level 2 courses in the Computer Science Track; instructor approval
Using the Cisco Networking Academy Program. The Networking Academy helps individuals prepare for industry-recognized certifications and entry-level information and communication technology (ICT) careers in virtually every type of industry. Students develop foundational skills in ICT while acquiring vital 21st-century career skills in problem solving, collaboration, and critical thinking.

Database Design
½ Credit
This course introduces students to the basic concepts of database design and implementation. It covers all aspects of the database life cycle and systematically works through the procedure of collecting requirements, then planning, modeling, and creating a database and a database application. Students move from a conceptual model to an entity-relationship model, which in turn translates into a relational database and a database application. Students hone the important skills required to classify information, identify relationships, and think logically.

Design of the User Experience
½ Credit
Prerequisite: Freshman Technology Rotation or teacher recommendation
Programmers and engineers make the tool, designers make the tool look attractive, and psychologists make sure the tool is useful. Ultimately, customers will reward the makers that can do all three well, but the marketplace is a painful time to discover if the product will be successful. It is better to know, while the tool is being built, what the customers want than to find out afterwards. Successful companies always include designers and psychologists in their product development. There are clever ways to make decisions and evaluate concepts while in the planning stages. Skilled professionals to help avoid costly mistakes are highly desirable. This course is about the designers' principles and psychologists' methods so that students can go on to careers in technology development as more than just programmers and engineers.

Introduction to Networking
½ Credit
Prerequisite: Freshman Technology Rotation or teacher recommendation
Computer Networking guides students through all phases of implementing and troubleshooting common TCP/IP Ethernet networks using readily available commodity

network hardware connected with CAT5/6 cable. It covers network components, cables, and connectors. The course walks students through network standards, protocols, and topologies. It guides students through implementing and troubleshooting a LAN, as well as discussing access issues for WANs. The course also includes a brief history of networks. Finally, students get a chance to discover what types of network-related careers exist today.

Programming
½ Credit
Prerequisite: Freshman Technology Rotation or teacher recommendation
In this course, students learn about program design, documentation, formal debugging and testing. The students will use the Python programming language as they work on various small projects. The culminating project is a computer game they will code from scratch.

Web Design
1 Credit
Prerequisite: Freshman Technology Rotation or teacher recommendation
This course follows Introduction to Web Design. IN the first half of the course further coding HTML 5 and CSS 3 techniques will be used within text-editors and web browsers. Students will create web pages demonstrating concepts on a near-daily basis and validating their source code to ensure current web specification compliance. In addition, basic design principles will be taught and applied to web design. The Bureau of Labor Statistics projects 20.1 percent employment growth for Web developers between 2012 and 2022. The second half of the course_introduces advanced coding desired in Web programming professionals. Advanced HTML 5 and CSS 3 coding introduce design concepts such as the CSS box model, layout design, site navigation, forms, search engine optimization, and good design practices will be taught. JavaScript will also be included as a third coding skill for desirable Web Programmers. Students will continue to create web pages demonstrating concepts on a near-daily basis and validating their source code to ensure efficiency and browser compatibility.

GAMING & APP DEVELOPMENT TRACK

3D Modeling & Animation
½ Credit
3-D Modeling and Animation is a one-semester elective that advances the skill level of students in the creative world of digital modeling and animation using the Autodesk Maya Entertainment suite. Autodesk Maya is the industry standard 3-D software used to create animated films, video games, medical visualizations, and special effects for films. Autodesk Mudbox is one of the leading sculpting and modeling programs that integrates seamlessly with the Maya environment. The objective of the course is to develop a deeper understanding of the advanced features of 3-D animation. The course will develop skills in modeling, animation, textures, lighting and rendering. The software used in these courses is the consensus industry-standard and used by animators at Pixar, Disney and most major studios.

Immersive Game Environments
½ Credit
An immersive digital environment is an artificial, interactive, computer-created scene or "world" within which a user can explore in a world of unrestricted movement. Such environments could be a model of reality, but it could also be a complete fantasy user interface or abstraction, as long as the user of the environment is immersed within it. The definition of immersion is wide and variable, but here it is assumed to mean simply that the user feels like they are part of the simulated "universe". The success with which an immersive digital environment can actually immerse the user is dependent on many factors such as believable 3D computer graphics, surround sound, interactive user-input and other factors such as simplicity, functionality and potential for enjoyment. Forward thinkers will benefit from roles in this sector, and with huge advancements expected, this is one area that will also carry substantial wages and prestige in years to come.

Video Game Design
Prerequisite: B or higher in Foundations of Programming, Mobile Apps or Programming.
½ credit
Students will work individually and in groups to design, program, test, and deploy video games. The tools that we will use are capable of deploying to multiple platforms (mobile phones, web games, computer games) and are popular among independent developers.

Mobile Application Design
Prerequisite: Introduction to Programming or teacher recommendation
1 Credit
The course will provide a broad introduction to computer science in terms of seven basic principles: creativity, abstraction, data, algorithms, programming, the Internet, and societal impact. Computer science is the study of computers and computation. Students will receive a solid introduction to the thinking skills and practices that make up the study of computer science and will leave the course with a strong appreciation of the role that computers and computation play in modern society, the impact that advanced computing technology has on our privacy and freedom. The course will be project-based and will make use of mobile computing devices such as smart phones and tablets. Students will learn to use App Inventor for Android, a new visual programming language, to design and program mobile applications that benefit their school or home or neighborhood.

DIGITAL VIDEO & MEDIA TRACK

Advanced TV Production
½ Credit
Prerequisite: TV Production I
This course will build upon the skills developed in TV Production I addressing advanced video and TV studio production with an emphasis on the application of electronic news-gathering techniques. All students will be part of a TV crew covering school-wide events, school assemblies, and the annual Theme Portfolio Presentation. Special production assignments will also be assigned depending on the yearly school community needs. This rigorous course is intended for those students interested in possibly pursuing a career in TV media industry. Students will gain an advanced in-depth knowledge and comprehension in all three TV production stages: Pre-Production, Production and Post-Production. Students will develop advanced skills in television production and learn to synthesize these skills in planning, directing, and producing television programs. The goal of this course is for students to gain independence in planning, writing, producing, supervising, and performing in television. There will be opportunities for work-based learning experiences through job shadows, guest speakers, and worksite tours, as well as internships, and seniors will also be expected to complete their Capstone project within the field of Digital Video & Media.

Digital Sound Production 1
½ Credit
Prerequisite: Digital Video & Media
Students will study the production and engineering processes behind various digital audio medias, including: radio broadcasts, podcasts, Public Service Announcements, foley artistry, film & video game soundtrack development and basic music production. Students will acquire a working knowledge of professional audio equipment and software, as well as learn common engineering values and techniques.

Digital Sound Production II
½ Credit
Prerequisite: Digital Sound Production I
Having acquired a firm understanding of broadcasting and multi-media production through Digital Sound Production 1, students will advance their learning through examination of professional audio engineering processes. Topics will be studied more in depth and developed according to a student's area of interest, including: music composition and recording, webcasting, online radio station management, developing a podcast series and creating content for iTunes and other digital media services.

Digital Video and Media
½ Credit
Prerequisite: Freshman Technology Rotation or teacher recommendation
Digital Video and Media guides students through all phases of digital video production, including pre-production and planning, executing and managing a video shoot, and techniques of editing and post-production. Students explore methods of sharing and broadcasting digital videos, including multiple platform versions, CDs and DVDs, and web delivery. They also learn about the latest methods of spreading the word about a digital video, including methods of using online search engines to lead viewers to the production. Finally, students have a chance to discover the types of careers that exist in digital media and design today.

Music Technology
½ Credit
Prerequisite: Freshman Technology Rotation or teacher recommendation
Music technology is a general music course designed to build students' skills and knowledge in a number of areas that combine music and technology. Students will explore modern techniques for computer-based music production and will use software resources such as Garageband, Ableton Live, and Pro Tools as well as hardware resources such as microphones, MIDI keyboards, and audio interfaces. Students will engage in projects such as creating drumbeats, recording vocals, and producing professional quality recordings. Students will also develop skills in basic keyboarding as well as reading basic music notation. Students will also explore the transition of the music industry from analog to digital and will analyze how social media has affected the way people listen to music.

TV Production
Prerequisite: Digital Video & Media
½ Credit
This course will build upon the fundamentals learned in Digital Video & Media. Students will study advanced operation of the equipment used in studio production, as well as advance the skill sets of studio crew positions. A series of complex, in-studio productions will be the basis for practicing these skills. Students will rotate throughout the roles of producer, director and all crew positions.

DESIGN TRACK

Advanced Art
½ Credit
Prerequisite: Instructor approval
Advanced Art is a ½ credit course designed as a capstone class for 12th graders who wish to develop, implement, and present their Capstone project in the Visual Arts. Topics can include: Design, Architecture, Museum Studies, and Digital Photography, and more. The teacher will guide the students through the capstone process as outlined in the Pathways Senior Capstone Project curriculum.

Design for 3D Printing
½ Credit
Design for 3D Printing is a course, which will train students to learn and understand processes of creating digital information that creates solid objects, using the Rhino software. The 3D Printer replicates designs by adding layers of material in sequence. The work created will focus on innovation and the students will have the flexibility to fashion their inventions into real objects and try out new ideas and build multiple prototypes.

Digital Photography
½ Credit
This course is an introduction to digital photography. Studio experience in digital imaging concepts and techniques include: image capture, manipulation and output using Adobe Photoshop. This course will provide the student with basic aesthetic principles as well as an extensive range of practical photographic techniques needed for entry into the photographic workplace and/or for artistic expression. It provides experience in traditional and contemporary photographic techniques for art, multimedia and television.

Fundamentals of Design
½ Credit
Design is at the forefront of defining the fields of Art and Design and this course allows for a range of practice, technique and ideas, and each project incorporates the use of technology into the art making process. This course is designed to introduce the student to a variety of art concepts, media and techniques through 2D and 3D designs. The *Elements of Art* and *Principles of Design* are referenced to create an understanding of composition and design. Students work in selected media, including: pencil, pen, pastel, charcoal, and paint. Units are developed to focus on art making, art history, aesthetics, and art criticism. Software includes Adobe Illustrator and Photoshop.

Graphic Design
Prerequisite: Fundamentals of Design
1 Credit
This course is designed to teach students a variety of art techniques as they apply to a wide range of current technology. Students will use the Adobe Suite: Photoshop, Illustrator and Indesign, digital camera, scanner and graphic tablets as an extension of their own creativity. Students will implement the *Elements of Art* and *Principles of Design* in the creation of artwork in both a traditional and contemporary way. Each student will develop analytical skills through the study of artists and their artwork and demonstrate the process of critique through written work and oral discussion of their own and others' artwork.

Advanced Design Portfolio
Prerequisite: Instructor approval
1 Credit
This course is designed for the student who has a strong interest in continuing their artistic development. Curriculum centers on individual and group art projects. Each student will develop an individualized program that can include: Graphic Design, Fashion Design, Illustration, Digital Photography or Fine Art. Students will develop a college ready portfolio, and exhibit their artwork in the annual student art show.

WORLD LANGUAGES

Spanish I
1 Credit
This is an introductory course in which students will learn the sounds and symbols of the new language and begin developing all four basic skills: listening, speaking, reading and writing. The course stresses vocabulary acquisition and usage, sentence structure, and basic grammatical principles. Since the objective of the course is to develop the student's ability to communicate in the new language, class time is developed largely to the development of listening and speaking skills. All students will be required to listen, imitate, and to actively participate in all kinds of aural and oral drills. As the course progresses, they will also be required to do simple reading and writing exercises in the target language. In addition, the students in this course will have the opportunity to learn about the customs, idiosyncrasy, the cultural practices and expressions of the people whose language they are studying. Although the use of some English may be necessary in some occasions, teachers will strive to conduct classes, in the target language as much as possible. Participation in all class activities and exercises is absolutely essential and expected of all students. Homework will be assigned on a daily basis to reinforce all concepts studied in class and to provide additional opportunities for students to practice.

Spanish II
1 Credit
Prerequisite: Spanish I
This course is a continuation of level I. In this course, students will review all basic concepts studied in level l and continue to further the development of the four basic skills, listening peaking, reading, and writing. After the review, youngsters will go on studying the basic grammatical principles of the target language, the formation and use of different tenses, and enhancing their vocabulary base. The approach used is similar to that of the first year level. The emphasis continues to be on developing the ability to listen and communicate in the new language, but reading comprehension and writing skills are also stressed. The students will gain knowledge and understanding of the psychology and all cultural aspects of the people who language they are studying. Classes are conducted in the target language except for those situations in which the teacher considers the use of English absolutely necessary. Participation in all class activities and exercises is absolutely essential and expected of all students. Homework will be assigned on a daily basis to reinforce all concepts studied in class and to provide additional opportunities for students to practice.

Spanish III

Prerequisite: Spanish II

1 Credit

This course is a continuation of Level II, and it is designed for those individuals who are seriously interested in language studies. It provides students with the opportunity to continue expanding their knowledge of the language and their ability to communicate in it both orally and in writing. In this course, pupils will review and practice concepts studies in the second year level and move on to more complex grammatical principles and verb tenses. The students will work on the acquisition and use of vocabulary, and will be constantly challenged to express themselves in the target language through oral discussions, readings and writing exercises. Classes are conducted entirely in the target language. Participation in all class activities and exercises is absolutely essential and expected of all students. Homework will be assigned on a daily basis to reinforce all concepts studied in class and to provide additional opportunities for students to practice.

ADDITIONAL REQUIREMENTS

Junior/ Senior Internship

1 Credit

The junior/ senior Internship experience is a graduation requirement for all seniors at Pathways. The internship is a work-based learning opportunity for students to apply, in a real world setting (i.e. workplace), what they have learned in all of their classes while at Pathways Academy of Technology & Design. Internships length varies and can occur during the course of the school year. The student will be evaluated by his/her completion of the internship, using the Magnet Theme Standards rubric.

ENRICHMENT OPPORTUNITIES

Senior Internship

1 Credit

Prerequisite: Completion of all graduation requirements

Students who have completed all of their graduation requirements will be allowed to complete an internship during the second semester of their senior year. The internship will take the place of a class and students will be graded upon completion of the required coursework. The Internship Coordinator will assist students in securing approved external and internal internships. Throughout the internship experience, students will be required to submit weekly journal entries and prepare a final portfolio to be submitted at the end of the semester. Students will be evaluated and graded on their general workplace performance by their supervisor(s).