

**High School
2021 - 2022
Academic Planning Guide**

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Our Mission

Never Stop Innovating

Our Vision

We envision a world of exponential possibilities where every child develops the innate knowledge, skills, creativity and character to thrive, lead and succeed in an ever-changing future.

Welcome to STEM School Highlands Ranch. We are an innovative, free, public, charter learning community that exists to innovate K-12 education in order to prepare every student to lead change, solve problems, and succeed in an exponentially changing world.

We are more than a school. We are a think tank, a learning lab, and a catalyst for creativity. We are a haven for continual innovation, creative exploration, and rigorous discovery. We defy definition and break with convention. Because that's what innovators do.

We see school differently. Although our curriculum has a college preparatory focus with emphasis on developing core liberal arts skills in reading, writing, mathematics, and science, we use creativity, problem-solving, and innovation to inspire and challenge our students.

We are more than just STEM. We infuse STEM into all classrooms. We challenge students with STEM-based, real-world problem solving fueled by constant exploration, inquiry, and discovery.

We foster innovation. We equip every student, every day, in every classroom with the knowledge, skills, confidence, and character to thrive in a constantly changing world. By using continuous inquiry, constant discovery, and trial and error as critical pathways to new discoveries, we create a culture of safe failure and fearless innovation.

We empower students. We put students in the driver's seat of their learning, engaging and empowering them to push their own unique boundaries of innovative learning, thinking and doing.

We see teachers as catalysts. Here, teachers are role models and innovation coaches who provide the framework for learning. Our teachers are experts in teaching appropriate use of technology, collaboration, and teamwork that sparks interest in STEM and learning at an early age.

We innovate and learn together. Here, we leverage the power of collaboration, teamwork, and group think to build, design, and create solutions to real-world problems.

We're fostering tomorrow's innovators, creators, and change agents. We work tirelessly to nurture and develop integrity, respect, responsibility, and honesty within our students and take pride in encouraging well-rounded student development.

Definitions

Advanced Placement (AP): The Advanced Placement program is a national academic program sponsored by the College Board. All Advanced Placement course grades are weighted (additional 1.0).

Credit (high school unit of credit): A measure of credit earned in a course. One unit of credit equals two successfully completed semesters of high school work. One semester of successfully completed high school work equals .5 credit or Carnegie units.

Concurrent Enrollment (CE): A student is simultaneously enrolled in a local education provider and in an institute of higher education or career and technical course that will render college credit and satisfy credits toward high school graduation. All Concurrent Enrollment (CE) course grades are weighted (additional 1.0) except physical education courses. Please see Concurrent Enrollment Policy for high school credit equivalency and enrollment information.

PTech: Pathways in Technology Early College High Schools (P-TECH) is an innovative partnership between a school district, a community college, and one or more local high growth industry employer. Students begin as early as ninth grade and continue for up to six years (i.e. high school and two equivalent years of college). Students graduate with both a high school diploma and an industry-recognized associate degree, in addition to gaining relevant workplace skills.

Cumulative GPA: A student's earned Grade Point Average for all semesters combined. (This feature is available for high school students only and is presented in both weighted and unweighted formats on the student's transcript)

GPA: A student's earned Grade Point Average for one semester or one year.

Grades	Unweighted GPA	Weighted GPA
A	4.0	5.0
B	3.0	4.0
C	2.0	3.0
D	1.0	2.0
F	0	0

HEAR Curriculum: The Higher Education Academic Requirements (HEAR) are a combination of courses, primarily in the areas of English, Mathematics, Natural and Physical Sciences, Social Sciences, and World Language that students are required to complete as preparation for entering one of Colorado's four-year public colleges or universities.

Honors: An accelerated course intended for students capable of a challenging curriculum that provides a strong foundation for subsequent Honors and Advanced Placement coursework. **Douglas County School District and STEM School do not award any weighting for grades in Honors classes.**

Prerequisite: A course that must be successfully completed before taking another course, demonstrated proficiency in previous course or standardized test, and/or teacher recommendation

High School Policies

Adding/Dropping a High School Class: School counselors make ALL schedule changes. Find their contact information on our [website](#).

Schedule Change Process:

- Requests made within school days 1-10 will be made, if reasonable, at student request. Students must complete a schedule change request form, obtaining appropriate teacher signatures. The school counselor must approve and complete all schedule changes.
- Requests made during school days 10-20 will be considered if the requesting student maintains a minimum number of classes. During this timeframe, administrative and/or parent permission may need to be obtained. A student can not drop a class, but will need to “withdraw”. The requesting student’s transcript will reflect either a “W/F” or “W/P”, depending on their grade at the time of withdrawing. There will be no GPA consequence.
- Requests made after school day 20 will be considered if the requesting student maintains a minimum number of classes. Requests made this late into the semester will require administrative and parent approval. The student must withdraw from the class and his/her transcript will reflect a “W/F” or “W/P”, depending on the grade at time of withdrawing. There is a GPA consequence as if having earned an F for the class. A “0” (zero) will be factored into their GPA.
- For concurrent enrollment guidelines on adding and dropping a class, please see the institution’s guidelines. For questions on the interpretation, please see HS CE Advisor.

Availability of Classes: While every effort will be made to provide the classes a student has requested during registration, some classes may not be available due to student enrollment numbers, staffing, and budget.

Community Service: STEM follows DCSD’s community service guidelines. Students need 20 hours of community service between the summer prior to 9th grade and the end of grade 12. 5 of those 20 hours can be completed at STEM School Highlands Ranch. STEM Scholar requires 100 community service hours. If approved by a school administrator, additional hours completed at STEM can count toward the STEM Scholar requirement.

Course Load: All STEM school students are required to take a full schedule of eight (8) classes per semester in grades 9 and 10. If earned credits toward meeting requirements for graduation permits, students may be allowed to take six (6) classes per semester in grade 11, and six (6) classes per semester in grade 12. Seniors must take a minimum of six (6) classes in order to be a student at STEM School Highlands Ranch.

Courses taken through outside programs (Non CE ACC/or CE Option 3):

If a student decides to take a course for high school or dual (college and high school) credit, the student must receive approval from the high school counselor. Examples of outside programs are BYU and eDCSD. The student must complete the “Non-STEM Course Approval Form” and submit it to the counselor. The counselor will check to see if the program credit will transfer to STEM High School. STEM will only accept up to 2.0

credits of outside courses toward a STEM diploma. Please note: For ACC Concurrent Enrollment options, students must consult with our CE Advisor, not the high school counselor.

Early Graduation: Students planning to complete their high school course work in less than eight semesters must develop an early graduation plan with their principal, counselor, and parents. A student who plans to graduate early must complete all requirements set by the State Board of Education and the STEM Charter School Board.

Enrollment: Students enrolling at STEM School who have withdrawn from a previous school must enroll three weeks prior to the end of a semester in order to receive credit from STEM for the semester. Students who have not been in attendance at a school during a semester may not receive credit at STEM if they enroll 3 weeks after the semester begins. If a student is over 17, alternatives for earning credit during the semester will be presented. If a student is not yet 17, the student will be enrolled and attend a full schedule, but credit may not be granted.

Fees:

- Course Fees –As per STEM Charter Board policy, where additional charges are required for specific courses; the costs will be noted in the course description notably AP classes with required book and test fees. *fees are subject to change
- School fees will be reduced or waived for students who receive free/reduced lunch.

Graduation: Douglas County School District requires that a student must complete all graduation requirements to participate in the graduation ceremony. Completion of graduation requirements must be documented 48 hours prior to the ceremony.

High School Credit for Middle School Students- 2017-18 and beyond

Compliance with DCSD Policy IKF-R-2

A student may earn credits towards a Douglas County School District high school diploma prior to the official start of the 9th grade year.

Compliance with DCSD Policy IKF-R-2

A student may earn credits towards a Douglas County School District high school diploma prior to the official start of the 9th grade year.

1. Credit will automatically be awarded for earning an “A” in:
 - a. Any Douglas County School District high school summer session content course(s) completed preceding the start of the 9th grade year
 - b. Any Mathematics course(s) which exceeds the expectation of an Algebra 1 course
 - c. Any World Language course(s), which exceeds the expectations of Level 1
 - d. Any content area course, meeting, Board of Education criteria and which exceeds the expectations of a typical Douglas County 9th grade course as approved by the high school building administration.
2. Students who earn a grade other than an “A” will declare during their Junior year whether or not the course will be used to meet high school graduation requirements by submitting a Declaration of Credit for Middle School Courses form to the high school registrar. Once the form is submitted, the credit cannot be removed from the high school transcript.

Incomplete Grades: A student will be allowed to make up an incomplete grade within 10 school days after the end of the semester. If the grade is not made up within 10 school days, the incomplete will become an “F” on the transcript.

Independent Study Policy and Process

Independent study classes are designed to help students explore content that their schedule and/or course offerings do not easily allow. Students can work with a STEM teacher to design a meaningful independent study experience for a class not offered at STEM.

Independent study courses are only available for juniors and seniors and require counselor approval. Students interested in such a course should confirm teacher participation and then see the counselor to understand the process and acquire course paperwork.

Independent study classes are graded on the traditional A-F scale.

PE Waivers: Students may elect to waive up to 1.0 credit of Physical Education through participation of club or high school competitive sport. Details can be found on the PE Waiver form available from the HS Main Office and school website.

STEM Scholar vs. Regular STEM Diploma- If a student has decided to graduate as a STEM scholar, this decision must be declared no later than April of Junior Year or November of Senior Year (Declaration of Intent Form).

Teacher Aide Maximum: Students in grades 11 or 12 are allowed to be a teacher’s aide up to two times for credit, or .25 each time. If a student decides to be a TA after taking the course twice, the student will not receive credit.

STEM Graduation Requirements for class of 2021 and Beyond

Department	Standard Diploma	STEM Scholar
English	4	4
Mathematics <ul style="list-style-type: none"> • Algebra II is required for graduation 	4	4
Social Studies (0.5 credits - US Govt)	3.5	3.5
Science	3	3
World Language (must be the same language)	2	2
STEM Electives	3	7
Fine Arts	1	1
PE/Health	1	1
General Electives	2.5	4.5
TOTAL	24	30

Other Graduation Requirements	Standard Diploma	STEM Scholar
Community Service Requirements	20 Hours	100 Hours
ICAP Completion	required	required
AP/CE Courses	n/a	At least two courses
GPA Requirement	n/a	3.5 or Higher
Demonstration of Competency on Exam (see explanation and exam list below)	required	required

Competency Exams for Graduation of Years 2021 and Beyond

In accordance with Superintendent File: IKF-R-3 Graduation Requirements, all students must demonstrate college and career readiness in both Mathematics and English by meeting or exceeding the required level of readiness in one of the following methods:

Exam	English	Math
Accuplacer	62	61
ACT	18	19
ACT WorkKeys	Bronze+	Bronze+
Advanced Placement	2	2
ASVAB	31	31
Concurrent Enrollment	Passing Grade	Passing Grade
SAT	470	470
District Capstone	Individualized	Individualized
Industry Certificate	Individualized	Individualized

Capstone

For students in the graduating class of 2021 and beyond, all students must demonstrate college and career readiness in both Mathematics and English by meeting or exceeding the required level of readiness. STEM students who have not met the standardized assessment criteria for math and/or English by the end of their Junior year must complete a capstone demonstrating proficiency.

Students who have not met the standardized assessment criteria by the end of their Junior year must enroll in the regular senior English class. During the Fall semester, students will complete a capstone that is aligned to the "Handbook: DCSD's Capstone Project" document. Students will present their work to be evaluated by a panel of administrators, teachers and stakeholders. Any student who is needing to make revisions must complete and re-submit their capstone before April of their graduating year.

Concurrent Enrollment Policy

Concurrent Enrollment (CE) allows high school students (9th-12th grade) to enroll in college-level, guarantee transfer (within the Colorado public university system) courses while still in high school. STEM School Highlands Ranch will pay the tuition portion of that college education. Families must reimburse the school for any course not successfully completed (grade of “F”, “I”, or “W”). To qualify for the Concurrent Enrollment Program, students must:

- Be in 9th, 10th, 11th, or 12th grade
- Be a student of good standing in previous coursework and show a history of strong standardized test scores. This may include a GPA of 3.0 for the previous 2 semesters.
- Have a social maturity to excel in a college environment
- Receive a minimum score on the ACT, SAT, or Accuplacer as needed
- Complete all portions of the CE application and submit the completed application to the Concurrent Enrollment Counselor by the published deadlines
- Meet with the Concurrent Enrollment Counselor once each year to review eligibility for CE
- Be enrolled in a college-level, guaranteed transfer courses
- Be enrolled in the College Opportunity Fund

Offsite Concurrent Enrollment/STEM Class Track Options

A student has three options when scheduling offsite CE/DE courses in conjunction with their STEM schedule. In order to stay a full-time STEM student, one of the below tracks must be followed.

- Track 1: 1-6 college hours (1-2 CE classes) and 6 classes at STEM
- Track 2: 6-9 hours (2-3 CE classes) and 4 classes at STEM
- Track 3: 12-18 hours (3-6 CE classes) and NO STEM classes

Concurrent Enrollment Good Standing

Student has at least a cumulative GPA of 2.0 (college GPA), has completed (passed) at least 67% of attempted credits and has not exceeded 150% of the program’s total credits.

Failure to maintain “good standing” at the institute of higher learning may make a student ineligible for financial aid until the student repairs his or her academic status.

Concurrent Enrollment Credit Equivalency

Students completing college-level concurrent enrollment college level courses with a grade of C- or higher will be awarded credit equivalency as follows.

1 semester credit	.5 year high school credit
2-3 semester credits	1 year high school credit
4 semester credits	1.5 years high school credit
5 semester credits	2 years high school credit

The Advanced Placement Program

The Advanced Placement Program® is a cooperative educational endeavor between secondary schools and colleges and universities. Since its inception in 1955, the Program has provided motivated high school students with the opportunity to take college-level courses in a high school setting. Students who participate in the Program not only gain college-level skills, but in many cases they also earn college credit while they are still in high school. AP courses are taught by dedicated and enthusiastic high school teachers who follow course guidelines developed and published by the College Board. **The College Board: AP Central, 2005**

There is a cost to the student for each exam taken. Students who wish to take multiple AP courses need to discuss the rigorous schedule demands with their counselor.

Advantages of Taking AP Course Work

- AP courses show colleges that you are able to complete the most rigorous courses your high school offers.
- Collegiate institutions recognize that applicants with AP experience are better prepared for the demands of college courses.
- Most colleges and universities will offer college credit and/or advanced placement to students earning a high enough score on an AP exam.
- AP students may be eligible for honors and other special programs in college.

More information regarding the AP program can be obtained from any AP teacher, your counselor, and the [AP website](#).

Student Profile

We recommend that students undertaking Advanced Placement® course work:

- desire to undertake rigorous, in depth study of the course content;
- have a history of satisfactory performance within the content area;
- possess a strong work ethic and superior study skills;
- demonstrate strong language skills (students should be able to read and write at or above grade level);
- advocate and take responsibility for their own learning;
- understand that the pace of Advanced Placement® instruction requires daily attendance;
- meet the established prerequisites for specific courses;
- have sufficient time management skills to balance academics, and activities
- are mature, curious, and active learners who will contribute to classroom discussions and activities.

AP Scholar Awards

Each year, the College Board recognizes high school students who have demonstrated college-level achievement through multiple AP courses and exams. Some of the awards and their requirements are as follows:

- AP Scholar: students who receive scores of 3 or higher on three or more AP Exams
- AP Scholar with Honor: students who receive an average score of at least 3.25 on all AP Exams taken and scores of 3 or higher on four or more on these exams
- AP Scholar with Distinction: students who receive an average score of at least 3.5 on all AP Exams taken and scores of 3 or higher on five or more of these exams
- National AP Scholar: students in the U.S. who receive an average score of at least 4 on all AP exams taken and scores of 4 or higher on eight or more of these exams

STEM Internship

- Employer must offer an internship for a specified time frame, in one of the Colorado Career Clusters:
 - Business, Marketing & Public Administration
 - Agriculture, Natural Resources & Energy
 - STEM, Arts, Design & Information Technology
 - Skilled Trades & Technical Sciences
 - Health Science, Criminal Justice & Public Safety
- Internships should be paid, but exceptions can be made for unpaid internships. If the STEM intern will not be covered for Workers Compensation Insurance by the employer special arrangements must be made ahead of time.
- Internships may be for both for profit or non-profit organizations. All other requirements, including Workers Compensation Insurance, must still be addressed.
- Internship must be approved by STEM School Highlands Ranch via the Internship Course Approval Form.

High School Credit for Internship

Students may earn up to .5 (1 credit for Career Wise participants) elective credits per semester for participation in an approved STEM internship. This will be a pass/fail course. Internships must meet the following requirements:

- Student must have a complete Internship Course Approval Form on file with the high school counseling office **before** beginning an internship.
- Internship will be scheduled for a minimum of 75 hours per semester.
- Students who do not attend 85% or more of their scheduled hours will not pass the class. Attendance must be verified via Internship Attendance Verification Form which must be submitted to the counseling office the last week of the semester in which the internship occurs.

P-Tech

Pathways in Technology Early College High Schools (P-TECH) is an innovative partnership between a school district, a community college, and one or more local high growth industry employer. Students begin as early as ninth grade and continue for up to six years (i.e. high school and two equivalent years of college). Students graduate with both a high school diploma and an industry-recognized associate degree, in addition to gaining relevant workplace skills.

The P-TECH pathway that is offered at STEM is Mechatronics. Mechatronics is a synergetic integration of mechanical, electrical, control, automation, robotics, computer system for industry and computer engineering technologies.

STEM School Highlands Ranch will pay the tuition portion of that college education that is outlined in the P-TECH pathway. Families are responsible for books, fees, and additional tuition costs from online classes, as well as courses that are not outlined in the P-TECH pathway. Families must reimburse the school for any course not successfully completed (grade of "F", "I", or "W").

To qualify for the P-TECH Program, students must:

1. Be in 9th, 10th, 11th, or 12th grade
2. Be enrolled in P-TECH program by the beginning of 11th grade
3. Have a social maturity to excel in a college environment
4. Receive a minimum score on the ACT, SAT, or Accuplacer as needed
5. Complete all portions of the P-TECH application and submit the completed application to the P-TECH navigator by the published deadlines
6. Be enrolled in available P-TECH courses
7. Be enrolled in the College Opportunity Fund

Good Standing

Student has at least a cumulative GPA of 2.0 (college GPA), has completed (passed) at least 67% of attempted credits and has not exceeded 150% of the program’s total credits.

Failure to maintain “good standing” at the institute of higher learning may make a student ineligible for financial aid until the student repairs his or her academic status.

Credit Equivalency

Students completing college-level concurrent enrollment college level courses with a grade of C- or higher will be awarded credit equivalency as follows.

1 semester credit	.5 year high school credit
2-3 semester credits	1 year high school credit
4 semester credits	1.5 years high school credit
5 semester credits	2 years high school credit

More information about the P-Tech program can be found on [our website](#).

Course Descriptions by Department and Recommended Pathway per Subject

Sample Course Description Interpretation

<p>Course Title</p> <p>English I</p>	<p>Course duration</p> <p>Year long course</p> <p>High school credits earned</p> <p>1.0 credit</p>	<p>Grade level(s) of students who can take the course</p> <p>9th grade</p>	<p>Fees</p> <p>No fee, although students will be asked to supply required novels throughout the year</p>	<p>Prerequisites</p> <p>No prerequisite, required course.</p>
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This course will help to refine and strengthen students' reading, writing, and communication skills. Emphasis is on communication through composition of well-structured paragraphs, letters, short stories and reports. Literature will be studied through the genres: novels, drama, short story, nonfiction, and poetry as well as common themes. Vocabulary, grammar, and standard usage are taught alongside reading and literature, as well as through the continuation of grammar practice.

Course description

English / Language Arts - recommended pathway

9th Grade **ENGLISH I**
CE ENG 121 ENGLISH COMP I*
& CE ENG 122 ENGLISH COMP II*
CE ENG 131 TECHNICAL WRITING I*



10th Grade **WORLD LITERATURE**
CE LIT 115 INTRO TO LITERATURE*
& CE LIT 202 WORLD LITERATURE*
CE ENG 131 TECHNICAL WRITING I*



11th Grade **AMERICAN LITERATURE**
CE ENG 121 ENGLISH COMP I*
& CE ENG 122 ENGLISH COMP II*
CE ENG 131 TECHNICAL WRITING I*
CE LIT 115 INTRO TO LITERATURE*
& CE LIT 202 WORLD LITERATURE*
AP LANGUAGE & COMP
AP LITERATURE & COMP



12th Grade **BRITISH LITERATURE**
CE ENG 121 ENGLISH COMP I*
& CE ENG 122 ENGLISH COMP II*
CE ENG 131 TECHNICAL WRITING I*
CE LIT 115 INTRO TO LITERATURE*
& CE LIT 202 WORLD LITERATURE*
AP LANGUAGE & COMP
AP LITERATURE & COMP

NOTES on ENGLISH COURSES:

- 4 credit hours are required for graduation
- Standard course progression is in **BOLD**
- CE classes are 1.0 credit hours each semester
- All standard & AP classes are 1.0 credit hours
- * courses have a prerequisite and/or grade minimum to remain in the class

Language Arts

English I

STEMHS019

Year long course 1.0 credit	9th grade	No fee, although students will be asked to supply required novels throughout the year	N/A
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This course will help to refine and strengthen students' reading, writing, and communication skills. Emphasis is on communication through composition of well-structured paragraphs, letters, short stories and reports. Literature will be studied through the genres: novels, drama, short story, nonfiction, and poetry as well as common themes. Vocabulary, grammar, and standard usage are taught alongside reading and literature, as well as through the continuation of grammar practice.

CE ENG 121 English Composition I

STEMHS0116

Semester long course 1.0 credit	9th - 12th Grade	No fee, although students will be asked to supply required novels throughout the year	ACC Placement scores for English Student must enroll at ACC and fill out CE College agreement
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Emphasizes the planning, writing, and revising of compositions, including the development of critical and logical thinking skills. This course includes a minimum of five compositions that stress analytical, evaluative, and persuasive/argumentative writing.

CE ENG 122 English Composition II

STEMHS0117

Semester long course 1.0 credit	9th - 12th grade	No fee, although students will be asked to supply required novels throughout the year	ACC Placement scores for English Student must enroll at ACC and fill out CE College agreement
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Expands and refines the objectives of English Composition I. Emphasizes critical/logical thinking and reading, problem definition, research strategies, and writing analytical, evaluative, and/or persuasive papers that incorporate research.

CE ENG 131 Technical Writing I

STEMHS---

Semester long course 1.0 credit	9th - 12th grade	No fee, although students will be asked to supply required novels throughout the year	ACC Placement scores for English Student must enroll at ACC and fill out CE College agreement
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Develops skills one can apply to a variety of technical documents. Focuses on principles for organizing, writing, and revising clear, readable documents for industry, business, and government. This is a statewide Guaranteed Transfer course in the GT-CO1 category.

World Literature

STEMHS0110

Year long course 1.0 credit	10th grade	No fee, although students will be asked to supply required novels throughout the year	English I or equivalent.
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In this course we will study works classified as World Literature in order to broaden students' literary landscape. Texts will range from the Ancient World to 21st Century fiction and nonfiction, and highlight themes of global awareness and power. These texts will be placed in their social and historical context, giving us a more complete understanding of the circumstances and culture in which they were written.

CE LIT 115 Intro to Literature

STEMHS0118

Semester long course 1.0 credit	10th - 12th grade	No fee, although students will be asked to supply required novels throughout the year	ACC Placement scores for English Student must enroll at ACC and fill out CE College agreement
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Introduces students to fiction, poetry, and drama. Emphasizes active and responsive reading.

CE LIT 202 World Literature after 1600

STEMHS0119

Semester long course 1.0 credit	10th - 12th grade	No fee, although students will be asked to supply required novels throughout the year	ACC Placement scores for English Student must enroll at ACC and fill out CE College agreement
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This course will examine significant writings in world literature from seventeenth century to the present. It will emphasize careful and critical reading and understanding of the works and their cultural backgrounds.

American Literature

STEMHS0111

Year long course 1.0 credit	11th grade	No fee, although students will be asked to supply required novels throughout the year	English I or equivalent
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In this course we will study works classified as American Literature in order to broaden students' understanding of what American really means. Texts will range from Native American to 21st Century fiction and nonfiction, and highlight themes of non-conformity and "the American Dream." These texts will be placed in their social and historical context, giving us a more complete understanding of the circumstances and culture in which they were written.

British Literature

STEMHS0112

Year long course 1.0 credit	12th grade	No fee, although students will be asked to supply required novels throughout the year	English I or equivalent
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In this course we will study works classified as British literature in order to broaden students' scope of literature written in English. Texts will range from the middle English of Chaucer to 21st century fiction and nonfiction, and highlight themes of escapism. These texts will be placed in their social and historical context, giving us a more complete understanding of the circumstances and culture in which they were written.

AP Language and Composition

STEMHS0120

Year long course 1.0 credit	11th or 12th grade	\$95.00 for AP Exam and students will be asked to supply selected novels throughout the year	2 years of high school level English is recommended
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This accelerated, year-long course prepares students for the AP Language and Composition exam through reading and analysis of non-fiction essay and classic literature in addition to strengthening critical thinking and writing skills. Because students who pass the AP exam may earn college credit, the degree of difficulty is high. Primary to this class is the understanding of rhetoric, both the writing and analysis of it. Qualities of an AP student include one with a mature perspective (global and historical), a persuasive and analytical voice, a flow of writing and organizational structure, and correctness in grammar. Students will learn to write persuasively, using appropriate rhetorical strategies. They will also learn to analyze such things as diction, syntax, and figures of speech as part of the deconstruction of language, and will understand rhetorical strategies in the context of public discourse. They will be expected to complete summer reading in preparation for the course. Students are expected to take the AP exam in May.

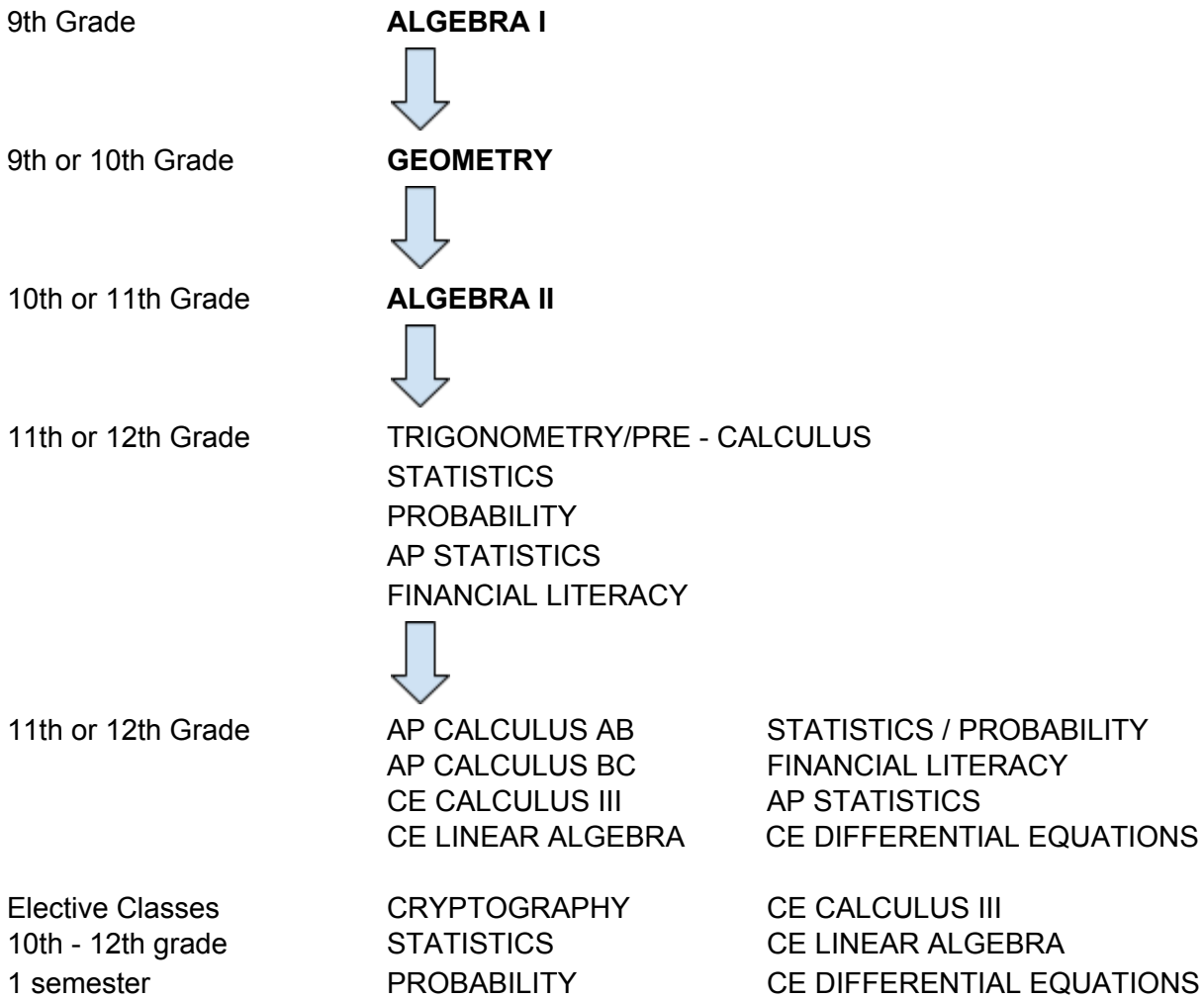
AP Literature and Composition

STEMHS0121

Year long course 1.0 credit	11th or 12th grade	\$95.00 for AP exam	2 years of high school level English is recommended
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An AP English Literature and Composition course engages students in the careful reading and critical analysis of imaginative literature . Through the close reading of selected texts, students deepen their understanding of the ways writers use language to provide both meaning and pleasure for their readers . As they read, students consider a workstyle, structure, style and themes, as well as such smaller-scale elements as the use of figurative language, imagery, symbolism and tone. They will be expected to complete summer reading in preparation for the course. Students are expected to take the AP exam in May.

Mathematics - recommended pathway



NOTES on MATH COURSES:

- 4 credit hours are required for graduation
- Algebra II is **required for graduation**
- Freshman will begin with the appropriate math class based on previous math class and eligibility.
 - Eligibility may based on:
 - recent interim assessment scores (iReady, STAR, or MAPS)
 - math placement test by STEM

Mathematics

Algebra I

STEMHS029

Year long course 1.0 credit	9th - 12th grade	None	Pre Algebra
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This course introduces students to solving problems by using variables to represent unknown quantities and then solving for those unknown quantities by writing equations and inequalities. Course topics include a review of the order of operations with integers, solving equations, and simplifying expressions. Students will work extensively on solving and graphing linear and quadratic equations and inequalities. Additional topics will include rules of exponents, factors and polynomials, polynomial fractions, the Cartesian coordinate plane, radicals, and the quadratic formula. Students who successfully complete this course with an 85% or higher will be prepared to move on to Geometry.

Geometry

STEMHS0210

Year long course 1.0 credit	9th - 12th grade	None	Algebra I
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This high school graduation requirement course serves as the second in the series of advanced mathematical courses by providing a complete foundation of the geometry topics. Students will represent problem situations with geometric models, classify figures in terms of congruence and similarity, and deduce properties of and relationships between figures from given assumptions.

Algebra II

STEMHS0211

Year long course 1.0 credit	9th - 12th grade	None	Geometry (with a C or better for students in grades 6-8)
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This course will expand students' knowledge of functions to include exponential, logarithmic and power functions by examining real-world problems. Students will gain an understanding of the characteristics and transformation of functions.

Trigonometry/Pre-Calculus

STEMHS0212

Year long course 1.0 credit	9th - 12th grade	None	Algebra II (recommended C or better)
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This problem-based course integrates the study of trigonometry, analytic geometry, advanced algebraic topics, and elementary statistics into a logical approach to the solution of real-world problems. All students considering a career in a mathematical, scientific or technological related field should enroll in this course

AP Calculus AB

STEMHS0216

Year long course 1.0 credit	10th - 12th grade	\$95.00 for AP exam \$35.00 for Web Assign	Pre-calculus (recommended C or better)
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Topics covered include limits, differentiation, integration, and problem solving involving calculus concepts. This course is the equivalent of one semester college calculus course and leads to the national AP exam in May.

AP Calculus BC

STEMHS0217

Year long course 1.0 credit	10th - 12th grade	\$95.00 for AP exam \$35.00 for Web Assign	Pre-calculus (recommended C or better)
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Following the College Board's suggested curriculum designed to parallel college-level calculus courses, AP Calculus BC courses provide students with an understanding of the concepts of calculus and experience with its methods and applications. These courses cover all of the calculus topics in AP Calculus AB as well as the following topics: parametric, polar, and vector functions; applications of integrals; and polynomial approximations and series, including series of constants and Taylor series. See SCED Code 02124 for more details.

CE MAT 204 Calculus III with Engineering Applications

STEMHS0221

Semester long course 2.0 credits	9th - 12th grade	\$100 MyLab Math	4 or higher on AP Calc BC exam Student must enroll at ACC and fill out CE College agreement
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Focuses on the competencies established in MAT 203 - Calculus III: GT-MA1 with an additional emphasis on word problems and problem solving. This is the third course in the three-course calculus sequence. This course will additionally contain a thorough examination of multiple integration. This will include double and triple integrals, line integrals, Stokes' and Green's Theorems, and their applications. A graphing calculator is required for this course.

CE MAT 255 Linear Algebra

STEMHS0223

Semester long course 1.0 credit	9th - 12th grade	Textbook	4 or higher on AP Calc BC exam Student must enroll at ACC and fill out CE College agreement
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Introduces linear algebra and emphasizes techniques of problem solving and introductory proofs. This course includes linear systems, matrices, determinants, vector spaces, linear transformations, eigenvalues, and eigenvectors.

CE MAT 261 Differential Equations with Engineering Applications

STEMHS0224

Semester long course 1.5 credits	9th - 12th grade	\$100 MyLab Math	C or better in MAT 204 Student must enroll at ACC and fill out CE College agreement
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This course introduces ordinary differential equations. The content of this course includes all the topics of MAT 265 - Differential Equations: GT-MA1 with an additional emphasis on applications and problem solving. A graphing calculator is required for this course.

Statistics

STEMHS0215

Semester long course 0.5 credit	10th - 12th grade	None	Algebra II or concurrent enrollment in Algebra II
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Probability and Statistics courses introduce the study of likely events and the analysis, interpretation, and presentation of quantitative data. Course topics generally include basic probability and statistics: discrete probability theory, odds and probabilities, probability trees, populations and samples, frequency tables, measures of central tendency, and presentation of data (including graphs). Course topics may also include normal distribution and measures of variability.

AP Statistics

STEMHS0218

Year long course 1.0 credit	10th - 12th grade	\$95.00 for AP Exam Textbook	Algebra II, earning a C or better. Recommended completion of PreCalc or Statistics
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The purpose of the AP course in statistics is to introduce students to the major concepts and tools for collecting, analyzing and drawing conclusions from data. Students are exposed to four broad conceptual themes:

- Exploring Data: Describing patterns and departures from patterns
- Sampling and Experimentation: Planning and conducting a study
- Anticipating Patterns: Exploring random phenomena using probability and simulation
- Statistical Inference: Estimating population parameters and testing hypotheses

Students who successfully complete this course will be prepared for the AP Statistics test and may be awarded up to one semester of college credit with a successful score.

Financial Literacy

STEMHS0214

Year long course 1.0 credit	10th - 12th grade	None	Algebra I
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This math elective is designed to introduce the students to the financial and economic system of the United States through topics such as stocks and bonds, investments, financial analysis, and budgeting. In addition, personal finance topics to inform students how individual choices directly influence occupational goals and future earning potential will be studied. Real world topics covered will include income, money management, spending and credit, as well as saving and investing.




Cryptography

STEMHS0213

Semester long course 0.5 credit	9th - 12th grade	None	Algebra II or concurrent enrollment in Algebra II
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Students will study the historical aspects of cryptography including Caesar cipher, Enigma Machine and RSA encryption. students will focus on programming and will create their own encryption scheme as well as programming methods to crack other encryption schemes.

Science - recommended pathway

9th Grade	BIOLOGY AP BIOLOGY*
	
10th Grade	CHEMISTRY* AP CHEMISTRY*
	
11th Grade	PHYSICS* AP PHYSICS A* AP PHYSICS C*
	
12th Grade	AP PHYSICS A* AP PHYSICS C* AP CHEMISTRY* AP BIOLOGY* ZOOLOGY* HUMAN ANATOMY & PHYSIOLOGY*
Elective Classes 10th - 12th Grade	AP ENVIRONMENTAL SCIENCE AP BIOLOGY* AP CHEMISTRY* AP PHYSICS* RESEARCH LAB & METHODOLOGY ASTRONOMY ZOOLOGY* HUMAN ANATOMY & PHYSIOLOGY*

NOTES on SCIENCE COURSES:

- 3 credit hours of lab based classes is required for graduation
- Standard course progression is in **BOLD**
- All classes, except electives, are lab based and year long
- * courses have a prerequisite and/or grade minimum to remain in the class see academic planning guide for details

Science

Biology

STEMHS039

Year long course 1.0 credit	9th - 11th grade	N/A	N/A
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Topics include the philosophy of science, scientific method, chemical organization of life, cell biology, cellular metabolism, genetics, molecular genetics, molecular biology, evolution, and biodiversity of the Bacteria, Archaea, protists, and Fungi. Also includes an introduction to higher levels of biological organization from the organism to the ecosystem. Topics include diversity of the plants and animals, organism structure and physiology, behavior, population ecology, community ecology, ecosystem ecology, and environmental biology.

AP Biology

STEMHS0317

Year long course 1.0 credit	10th - 12th grade	\$95.00 For AP Exam	Biology and Chemistry are strongly recommended.
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The AP Biology course is designed to enable you to develop advanced inquiry and reasoning skills, such as designing a plan for collecting data, analyzing data, applying mathematical routines, and connecting concepts in and across domains. The result will be readiness for the study of advanced topics in subsequent college courses—a goal of every AP course. This AP Biology course is equivalent to a two-semester college introductory biology course and has been endorsed enthusiastically by higher education officials.

Chemistry

STEMHS0310

Year long course 1.0 credit	10th - 12th grade	N/A	Algebra I
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This Chemistry course uses real-world applications that help students connect abstract chemical concepts to their own lives. This course utilizes engaging inquiry skills that allow students to really think like scientists. Chemistry strikes a balance between theory and application by incorporating real examples and helping students visualize the three-dimensional atomic and molecular structures that are the basis of chemical activity. Laboratory work in this course focuses on data analysis of chemical concepts and principles covering a broad range of topics. An integral part of this course is to develop students problem solving and critical thinking skills.

AP Chemistry

STEMHS0318

Year long course 1.0 credit	10th - 12th grade	\$95.00 For AP exam	Chemistry and Algebra II are strongly recommended.
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This course is designed to be the equivalent of the general chemistry course usually taken during the first college year. Students should attain a depth of understanding of fundamentals and a reasonable competence in dealing with chemical problems. This course in general chemistry is accelerated in the topics covered. The emphasis of this class is on chemical calculations and the mathematical formulation of principles, and laboratory experience equivalent to that of a typical college course.

Physics

STEMHS0311

Year long course 1.0 credit	10th - 12th grade	N/A	1 year of lab based science and Geometry
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The Physics course at STEM utilizes real world problem solving, problem based learning, and a blend of mathematical application with conceptualization of complex ideas to teach students how to establish patterns in the natural world. Physics will teach students about Newton's Laws of Motion, Kinematics, Electricity, and other phenomenon that can be broken down mathematically. The rigor of this course will also prepare a student for post-secondary educational endeavors.

AP Physics I- Algebra Based

STEMHS0320

Year long course 1.0 credit	10th - 12th grade	\$95.00 For AP exam	Physics and Algebra II co-requirement or instructor permission
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Designed by the College Board to parallel first-semester college-level courses in algebra-based physics, AP Physics 1 courses focus on Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory circuits. These courses may also include college-level laboratory investigations.

AP Physics C

STEMHS0319

Year long course 1.0 credit	10th - 12th grade	\$95.00 For AP Exam	Physics/Honors Physics, Pre-Calculus, concurrent Calculus enrollment or instructor permission
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This course is designed to be the equivalent of a general, calculus based physics course usually taken during the first college year in preparation for a science or engineering degree. This course will focus heavily on the mathematical manipulation of variables necessary to deepen a student's current understanding of physics. Semester 1 will be mechanics based, with emphasis on the following: Kinematics, Newton's Laws, Work, Energy and Power, Systems of Particles, Linear Momentum, Circular Motion and Rotation, and Oscillations and Gravity. Semester 2 will be based on Electricity and Magnetism, with emphasis on the following: Electrostatics, Conductors, Capacitors, Dielectrics, Electric Circuits, Magnetic Fields, and Electromagnetism. Understanding of the basic principles involved and the ability to apply these principles in the solution of problems will be the major goals of the course. Students will be required to identify, design and implement lab based research where they analyze and communicate their data driven results. Consequently, the course will utilize guided inquiry and student-centered learning to foster the development of critical thinking skills.

AP Environmental Science

STEMHS0322

Year long course 1.0 credit	9th - 12th grade	\$95.00 for AP Exam Textbook	N/A
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Earth Science is a laboratory science course that explores origins and the connections between the physical, chemical, and biological processes of the earth system. Students experience the content of Earth Science through inquiry-based laboratory investigations and focus on topics associated with energy, weather and climate, geochemical processes, and the expanded time scales needed to understand events in the earth system. Earth Science provides the knowledge, skills, and habits of mind needed for problem solving and ethical decision-making about scientific and technological issues.

Human Anatomy & Physiology

STEMHS0312

Year long course 1.0 credit	10th - 12th grade	No fee, although students will be asked to supply required reading and study materials throughout the year.	Biology
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Human Anatomy and Physiology covers the structure and function of the human body. Included is an organization of the human body, basic chemistry, and a study of cells, tissues, metabolism, human body systems, and the senses. Dissection, histological studies, and physiological simulations are featured in the laboratory experience.

Astronomy

STEMHS0313

Semester long course 0.5 credit	10th - 12th	N/A	1 year of lab based science and Geometry.
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An introduction to contemporary astronomy that includes stellar life cycles, the hunt for extrasolar planets, galactic forces, SETI and the Goldilocks Zone, and theoretical cosmology. We will focus on the stories of the Fathers of Modern Astronomy such as Copernicus, Galileo, Brahe, Kepler, Newton, Hubble, Einstein, and Hawking. The course gives special attention to exciting recent discoveries and current events. Topics include modern astronomical instruments such as the Hubble Space Telescope, the Spitzer Space Telescope, the Chandra X-ray Observatory, the new generation of 8- and 10-meter mountaintop telescopes, and results from them; how astronomers interpret the light received from distant celestial objects; the Sun as a typical star (and how its future will affect ours); and our modern understanding of how stars work and how they change with time. The class will also discuss how pulsars and black holes result from the evolution of normal, massive stars and how giant black holes are at the center of galaxies and quasars. A commitment to a weekly nighttime astronomy lab will be required.

Research and Lab Methodology

STEMHS0315

Year long course 1.0 credit	10th - 12th grade	No fee, but may require purchase of some specialized supplies and books depending on student's independent interest.	Requires approval by instructor for entry into the course through signature on course selection form.
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Topics include single subject, survey, correlational and experimental research. Lecture and lab involve computerized data analyses. Lab also includes supervised research and scientific writing. Students will be able to describe elements of scientific method and contrast that method with other ways of knowing and describe ethical principles applicable to the research enterprises. Students can elect to design and implement an experiment to compete in the Denver Metro Regional Science and Engineering Fair and possibly at state and national level. Students may also elect to present their research at professional conferences.



Zoology

STEMHS0316

Year long course 1.0 credit	10th - 12th grade	N/A	Biology
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Particular Topics in Biology courses concentrate on a particular subtopic within the field of biology (such as botany, zoology, genetics, and so on) that is not otherwise described within this classification system.

Social Studies - recommended pathway

9th Grade	GEOGRAPHY (1 semester) AP HUMAN GEOGRAPHY US GOVERNMENT (1 semester) AP GOVERNMENT and Politics 
10th Grade	WORLD HISTORY AP WORLD HISTORY: Modern GEOGRAPHY (1 semester) AP HUMAN GEOGRAPHY US GOVERNMENT (1 semester) AP GOVERNMENT AND POLITICS 
11th Grade and/or 12th Grade	US HISTORY AP US HISTORY WORLD HISTORY AP WORLD HISTORY: MODERN GEOGRAPHY AP HUMAN GEOGRAPHY
Elective Classes 10th - 12th Grade (1 semester each)	PSYCHOLOGY U.S. FOREIGN POLICY ECONOMICS

NOTES on SOCIAL STUDIES:

- 3.5 credits are required for graduation
- Government is the only specific course **required for graduation**
- * classes have a grade minimum to remain in the class and/or a prerequisite
- Classes are a year long unless otherwise noted

Social Studies

Geography

STEMHS0412

Semester long course 0.5 credit	9th - 11th grade	N/A	N/A
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Geography includes the study of different peoples as well as the physical characteristics of the earth, including landforms, climates, ecosystems and their interrelationships. Using the tools of geographers, students first learn to apply the Five Themes of Geography: Location, Place, Human-Environment Interaction, Movement, and Region. The course then concentrates on the political, economic, and social processes that shape cultural patterns of the following world regions: The United States, Latin America, Europe, Asia, Africa, Australia, and Antarctica. Using geographic information systems and a variety of other media, students compile, analyze, and present geographic data pertaining to the regions. Finally, students learn about types and patterns of settlement; the distribution and movement of world populations; relationships among people, places, and environments and how location affects economic systems. Cross-curricular integration projects with Science, Technology, Engineering, Math and Language Arts are emphasized.

AP Human Geography

STEMHS0420

Year long course 1.0 credit	9th - 12th grade	\$95.00 for AP Exam Textbook	N/A
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Following the College Board's suggested curriculum designed to parallel college-level Human Geography courses, AP Human Geography introduces students to the systematic study of patterns and processes that have shaped the ways in which humans understand, use, and alter the earth's surface. Students use spatial concepts and landscape analysis to examine human social organization and its environmental consequences and also learn about the methods and tools geographers use in their science and practice.

US Government

STEMHS049

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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The Civics and U.S. Government course prepares students for informed and responsible participation as citizens of our constitutional democracy. Students deepen their understanding of the democratic values expressed in the Declaration of Independence, the Constitution, and other foundational documents of the United States. They learn the purposes and structures of government as well as the principles of federalism, with a focus on how the executive, legislative and judicial branches operate at the federal, state and local levels. They also learn how citizens exert influence on public affairs and decisions. As a result of this course, students are prepared to exercise the rights and responsibilities of American citizenship. Cross-curricular integration projects with Science, Technology, Engineering, Math and Language Arts are emphasized.

AP Government and Politics

STEMHS0421

Year long course 1.0 credit	9th - 12th grade	\$95.00 for AP Exam Textbook	N/A
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Following the College Board's suggested curriculum designed to parallel college-level U.S. Government and Politics courses, these courses provide students with an analytical perspective on government and politics in the United States, involving both the study of general concepts used to interpret U.S. politics and the analysis of specific case studies. The courses generally cover the constitutional underpinnings of the U.S. government, political beliefs and behaviors, political parties and interest groups, the institutions and policy processes of national government, and civil rights and liberties.

US History

STEMHS0411

Year long course 1.0 credit	11th - 12th grade	N/A	N/A
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The study of 11th grade United States History starts in chronological sequence with the causes and events leading up to the Civil War through modern times. The class will emphasize the strands of constitutional development, government, minorities, economics, culture, foreign affairs, and war and peace. The focus of this course provides students with a framework for studying political, social, economic, and cultural issues, and for analyzing the impact these issues have had on American society. This course goes beyond memorization of isolated facts to the development of higher level thinking skills, encouraging students to make historical assessments and evaluations.

AP U.S History

STEMHS0424

Year long course 1.0 credit	11th - 12th grade	\$95.00 for AP Exam Textbook	N/A
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The class will prepare students to take the AP exam in the Spring. The AP U. S. History course is designed to provide students with the analytic skills and factual knowledge necessary to deal critically with the problems and materials in U .S. history. The program prepares students for intermediate and advanced college courses by making demands upon them equivalent to those made by full-year introductory college courses. Students should learn to assess historical materials—their relevance to a given interpretive problem, reliability, and importance—and to weigh the evidence and interpretations presented in historical scholarship. An AP U .S. History course should thus develop the skills necessary to arrive at conclusions on the basis of an informed judgment and to present reasons and evidence clearly and persuasively in essay format Students who take this course will have the opportunity to earn high school honors credit and sit for the College Board AP World History exam in the spring.

World History

STEMHS0410

Year long course 1.0 credit	10th - 12th grade	N/A	N/A
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This required high school course is a study of world history from the Renaissance to the present. Students study the key concepts of continuity and change, cause and effect, complexity, unity and diversity, and significant ideas through multiple perspectives, within and among cultures and societies. Using primary and secondary sources, they will utilize critical thinking, analytical and problem-solving skills as they conduct inquiry-based research, participate in interactive discussions, and complete assignments establishing real-world connections. Cross-curricular integration projects with Science, Technology, Engineering, Math and Language Arts are emphasized.

AP World History: Modern

STEMHS0423

Year long course 1.0 credit	10th - 12th grade	AP Exam fee	N/A
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In AP World History: Modern, students investigate significant events, individuals, developments, and processes from 1200 to the present. Students develop and use the same skills, practices, and methods employed by historians: analyzing primary and secondary sources; developing historical arguments; making historical connections; and utilizing reasoning about comparison, causation, and continuity and change over time. The course provides six themes that students explore throughout the course in order to make connections among historical developments in different times and places: humans and the environment, cultural developments and interactions, governance, economic systems, social interactions and organization, and technology and innovation.

U.S. Foreign Policy

STEMHS----

Semester long course 0.5 credit	10th - 12th grade	N/A	N/A
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This semester course will analyze U.S. foreign policy from a variety of approaches, including theories about world politics, American politics, and decision-making. The course focuses on analysis of important concepts, events, and people in the development of U.S. foreign policy over the last century utilizing a case-study approach. Course activities and instruction are designed to develop the academic skills which will help the student better comprehend this and other areas of study. The student is asked to use the historical method and to examine carefully the social, political and economic forces which shaped foreign policy decisions as the U.S. rose to power in the last century.

Psychology

STEMHS0422

Semester long course 0.5 credit	10th - 12th grade	N/A	N/A
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Psychology courses introduce students to the study of individual human behavior. Course content typically includes (but is not limited to) an overview of the field of psychology, topics in human growth and development, personality and behavior, and abnormal psychology.

Economics

STEMHS0413

Semester long course 0.5 credit	10th - 12th grade	N/A	N/A
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Why do 24-hour convenience stores have locks on their doors? Why do shirts for men button from the left, while shirts for women button from the right? Economics supplies the answers to these questions. Economics is the study of resources, efficiency, and how people choose to use their time and money. The field includes examinations of microeconomics - personal choices concerning resources - as well as macroeconomics - how entire economies grow or shrink based on the ideas of supply and demand. We will consider questions that economists ask, such as how and why prices change, what competition does to businesses, and how the stock market works. The focus of this class will be on how we can use economic principles to solve everyday problems, and how we can become more intelligent decision makers.

Computer Science

Introduction to Programming

STEMHS109

Semester long Course 0.5 credit	9th - 12th grade	Class fee TBD	N/A
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Students will be introduced to programming using Python as the programming language. Students will learn programming logic such as variables, loops, boolean logic, program flow, and more. Students will have the opportunity to create their own programs including games and simulations using the Pygame library.

Game Design I

STEMHS1017

Semester long course 0.5 credit	9th - 12th grade	Class fee TBD	Highly Recommended PreRequisite of Introduction to Programing OR teacher recommendation
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Students will be introduced to Computer Science concepts through the development and design of 2D video games using Game Maker Studio. Students will learn how to code object behaviors, the math and physics concepts used in game development, how the engineering cycle is used to design games, the components of a good game, color theory used in game design, how to create sprites and animation.

Game Design II

STEMHS1018

Semester long course 0.5 credit	9th - 12th grade	Class fee TBD	Game Design I or teacher recommendation
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The purpose of this course is to provide a strong foundation in software engineering, programming, and the C# language: and to work on all major aspects of developing video games using the Unity engine. A large part of video game development centers on programming and software development. Being a game developer requires a high level of knowledge in a modern, object-oriented language like C#. Though this course, students will learn programming by working on games, and will learn to write code to run every part of their game.

AP Computer Science A

STEMHS1014

Year Long Course 1.0 credit	9th - 12th grade	\$95.00 for AP Exam	Intro to Programming OR AP Computer Science Principles OR teacher recommendation
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Computer Science A emphasizes object-oriented programming methodology with a concentration on problem solving and algorithm development and is meant to be the equivalent of a first-semester college-level course in Computer Science. Students will learn Java. It also includes the study of data structures, design, and abstraction. Students will be prepared to take the AP Computer Science A exam

AP Computer Science Principles

STEMHS1015

Year long course 1.0 credit	9th - 12th grade	\$95.00 for AP Exam	Introduction to Programming OR teacher recommendation
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This course offers a multidisciplinary approach to teaching the underlying principles of computation. This course will introduce students to creative aspects of programming, abstractions, algorithms, large data sets, the Internet, cybersecurity concerns, and computing impacts. Students get the opportunity to use technology to address real world problems and build relevant solutions.

Gaming Studio

STEMHS1025

Year long course 1.0 credit	10th - 12th grade	Course fee TBD	Computer Science: Game Design II or demonstration of equivalent knowledge.
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Design, build, and collaborate to create a singular game using a variety of tools (Sculptris, Unity Game Engine, Blender, Krita, etc.). Students will experience how a game studio functions and learn to work in large teams effectively. Students will learn Git and LFS Git repositories. Students will be expected to fill multiple roles, such as: 2D Concept Artist, 3D Modeler/Sculpture, 3D Rigger, Level Designer, Art Director, Sound Director, Composer, Character Designer, Software Engineer, Lead Game Designer, Story Director, Scrum Leader, and Networking and Database Engineer. Students are expected to pursue a certification in their respective field of study depending on the area of work, this course can count as STEM Elective or a Fine Arts credit.

CE-CNG 121 Computer Technician I A+

STEMHS1010

Semester long course 1.5 credit	9th - 12th grade	Class fee TBD	Student must enroll at ACC and fill out CE agreement
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Students will learn the basics of computer hardware & software. The course includes problem determination for a variety of computer issues for hardware and operating systems. One of the class goals is to prepare students to optionally take the industry accepted certifications at their own expense.

CE-CNG 122 Computer Technician II A+

STEMHS1011

Semester long course 1.5 credit	9th - 12th grade	Class fee TBD	CNG 121(C or better) Student must enroll at ACC and fill out CE agreement
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Students will expand on understanding computer hardware & software. This course will explore networking and security concepts in computing. One of the class goals is to prepare students to optionally take the industry accepted certifications at their own expense.

CE CNG 124 Networking I: Network+

STEMHS1012

Semester long course 1.0 credit	10th - 12th grade	Class fee TBD	CNG 121 & 122 (C or better) or a Senior with instructor approval Student must enroll at ACC and fill out CE agreement
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Students will be learning a variety of networking topics such as DHCP, DNS, TCP/IP, FTP, etc. This is a two part college level course where students are able to earn college credit and an industry certification and will be prepared for the CompTia Network+ Certification (not provided in the class).

CE-CNG 125 Networking II: Network+

STEMHS1013

Semester long course 1.0 credit	10th - 12th grade	Class fee TBD Materials TBD	CNG 124 (C or better) Student must enroll at ACC and fill out CE agreement
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Provides students with the knowledge necessary to understand, identify and perform necessary tasks involved in supporting a network. Covers the vendor-independent networking skills and concepts that affect all aspects of networking, such as installing and configuring TCP/IP. This course also prepares students for the Networking II: Network + course.

Database Design, Query, and Load

STEMHS1024

Semester long course .5 credit	9th - 12th grade	Course fee TBD	N/A
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Databases store the information at most companies and institutions in every industry. The design, optimization, maintenance, and loading of databases is a well-paid position that is in high demand. This course will cover the fundamental concepts of relational database systems. Many of the principles of the database systems carry to other areas in computer science, especially operating systems. Databases are often thought of as one of the core computer science topics, since many other areas in the discipline have been derived from this area. This course has no prerequisites and is best- suited to high school students with an interest in information.

CE-CIS 220 Fundamentals of UNIX

STEMHS----

Semester long course 1.0 credit	11th - 12th grade	Class fee TBD Materials TBD	Student must enroll at ACC and fill out CE agreement
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This concurrent enrollment course provides students with the structure and fundamentals of the UNIX operating system. It includes the file system, file processing, various utility programs, shell, multi-user operation, text processing and communications.

Certified Ethical Hacker

STEMHS1023

Semester long course .5 credit	11th - 12th grade	Course fee TBD	Minimum age of 16 years old and administration approval. CNG 124, CNG 125, & CIS 220 Signed release form.
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Delivers a comprehensive overview of network security, including general security concepts from both Security+ and Certified Ethical Hacker. Students will study various attack types including buffer overflows, SQL injections, Cross-site scripting, etc. Cryptography basics are incorporated, and operational/organizational security is discussed as it relates to physical security, disaster recovery, and business continuity. Computer forensics is introduced. The minimum age for this class is 16. Considering the nature of this course, applicants must be approved by the administration to take this course.

Data Structures and Algorithms

STEMHS1026

Semester long course .5 credit	10th - 12th grade	Course fee TBD	AP Computer Science A
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This course, to follow AP Computer Science A, will study the fundamental Data Structures and Algorithms used in Computer Science. The topics of study will include Arrays, Linked Lists, Stacks, Trees, Queues, Hash Tables. Those Data Structures, and Algorithms used in accessing and manipulating them, will be taught as a continuation of the students' study of Java.

Artificial Intelligence and Machine Learning

STEMHS1027

Semester long course .5 credit	10th - 12th grade	Course fee TBD	Data Structures and Algorithms
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This course will provide students with an introduction to Artificial Intelligence and Machine Learning. Students will have the opportunity to experiment with several of the main methods and algorithms used in ML and AI.

Engineering

Robotics I

STEMHS219

Semester long course 0.5 credit	9th - 12th grade	TBD	N/A
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Students learn the basics of robotics and programming. Subjects covered will include motors, sensors, servos, programming, functions, loops, and coding

Robotics II

STEMHS2110

Semester long course 0.5 credit	9th - 12th grade	TBD	Robotics I, or equivalent, participation in BEST, FIRST
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Students will design and fabricate a robot to meet specific challenges. Most of these challenges will be based on FTC (First Tech Challenge, or TSA (Technology Student Association) events, or other Robotic competitions. *May be taken multiple times for credit.

TSA

STEMHS2118

Year long course 1.0 credit	9th - 12th grade	TBD	N/A
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Students will learn about technical sketching and drawing, how to apply mathematical principles to their design, and then use various tools and materials to bring their 3D projects to life. This is a hands-on inquiry based and problem/project driven class. Students will learn how to utilize the Engineering Design Process, critical thinking, and problem solving skills, to design and build projects. While learning about different materials and processes, students will also learn how to safely choose and operate the correct tool or machine for the job at hand. Students will learn to document their projects and solutions in an Engineering Notebook, and produce a presentation for each project. *May be taken multiple times for credit.

CAD

STEMHS2111

Semester long course 0.5 credit	9th - 12th grade	TBD	N/A
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This is an introductory course for Computer Aided Drafting (CAD). Students will learn to use professional CAD Packages such as CREO and AutoCAD to create and design projects. Students will acquire an understanding and build skills in Orthographic drawing, layout, dimensioning, cutaway, and other views, and other specific design techniques such as holes, fillets, geometric shapes, and freehand sketching.

Manufacturing

STEMHS2115

Semester long course 0.5 credit	9th - 12th grade	TBD	N/A
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Students will learn to design a project in a 3D modeling program, then fabricate their project through processes such as 3D printing, Laser cutter and engraver, and CNC machining. Students will also learn about Manufacturing Processes including Assembly Line, Just In Time, and Batch

Advanced Manufacturing

STEMHS2116

Semester long course 0.5 credit	9th - 12th grade	TBD	Manufacturing
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Students will learn to use both additive and subtractive tools and machines to create and fabricate projects in a hands on learning environment. Students will utilize the basic manufacturing process, evaluate materials properties to choose the correct material to design and manufacture a product that will be market ready.

Digital Electronics

STEMHS2113

Semester long course 0.5 credit	9th - 12th grade	TBD	N/A
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Students will learn the basics of digital electronics, electronic components and circuitry. This course will conclude with the student designing and fabricating a “Digital, Electronic, Rube Goldberg Machine”.

CE AEC 110 Architectural Design & Modeling

STEMHS2120

Semester long course 1.5 credit	9th - 12th grade	TBD	ACC placement scores for English & Math Student must enroll at ACC and fill out CE College agreement
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Introduces students to conceptual architectural design through manual drafting techniques including a variety of multi-view projection, isometric projects, and architecture details. The student will be required to produce a combination of manually drafted drawings, CAD drawings, and physical models. Students will develop and present a design solution and evaluation of the assigned program through conceptual models and architectural drawings.

CE AEC 206 Applied Structural Analysis

offered every 2 years

STEMHS2119

Semester long course 1.0 credit	9th - 12th grade	TBD	ACC placement scores for English & Math Student must enroll at ACC and fill out CE College agreement
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Studies fundamental structural elements and building structures. Building forces, transfer of forces, and structural members and systems are investigated through computation and project work. Fundamental engineering theory related to steel, wood, reinforced concrete and masonry are introduced.

CE ELT 106 Fundamentals of DC/AC

STEMHS2121

Semester long course 1.5 credit	9th - 12th grade	TBD	Student must enroll at ACC and fill out CE College agreement
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Introduces the basic skills needed for many careers in electronics and related fields. Covers the operations and applications of basic DC and AC circuits consisting of resistors, capacitors, inductors, transformers and diodes. Emphasizes the use of common test instruments in troubleshooting.

CE CAD 255 Solidworks/Mechanical

STEMHS2125

Semester long course 1.0 credit	9th - 12th grade	N/A	Student must enroll at ACC and fill out CE College agreement
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Introduces parametric feature based solid modeling 3D concepts to build confidence in 3D thinking and progresses to three dimensional parameters. The student learns to construct, modify, and manage complex parts in 3D space as well as to produce 2D drawings from the 3D models.

CE CAD 262 3D Printing/Additive Manufacturing

STEMHS2126

Semester long course 1.0 credit	9th - 12th grade	N/A	CAD 115, or CAD 202, or CAD 240, or CAD 255 (C or better) Student must enroll at ACC and fill out CE College agreement
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Provides the student with the ability to blend the virtual and real design worlds together through the use of 3D CAD Modeling and 3D Printing.

CE EIC 102 Electrical Print Reading

STEMHS2133

Semester long course 1.5 credit	9th - 12th grade	TBD	Student must enroll at ACC and fill out CE College agreement
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Introduces the basic skills needed for many careers in electronics and related fields. Covers the operations and applications of basic DC and AC circuits consisting of resistors, capacitors, inductors, transformers and diodes. Emphasizes the use of common test instruments in troubleshooting.

CE ELT 254 Industrial Wiring

STEMHS2129

Semester long course 1.0 credit	9th - 12th grade	TBD	ELT 106, EIC 102 Student must enroll at ACC and fill out CE College agreement
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Focuses on the required and recommended practice for industrial wiring. The National Electrical Code is applied to industrial power and control wiring. Covers specification and installation of wiring, conduit, enclosures, and termination components in lecture and applied during lab.

CE ELT 252 Motors and Controls

STEMHS2128

Semester long course 1.0 credit	9th - 12th grade	TBD	ELT 106 Student must enroll at ACC and fill out CE College agreement
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Enables the student to study, construct, test, and evaluate basic industrial control systems, including AC/DC motors, stepper motors, power sources, generators, tachometers, line diagrams and logic functions. Covers safety standards and preventive maintenance.

CE ELT 255 Fluid Power

STEMHS2130

Semester long course 1.0 credit	9th - 12th grade	TBD	Student must enroll at ACC and fill out CE College agreement
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Enables the student to study, construct, test and evaluate circuit diagrams, transmission of force and energy, pumps and motors, actuators, cylinders, valves, and control devices. Incorporates the construction of hydraulic and pneumatic circuits using industrial equipment in the laboratory.

CE ELT 258 Programmable Logic Controllers

STEMHS2131

Semester long course 1.0 credit	9th - 12th grade	TBD	ELT 106, ELT 252 Student must enroll at ACC and fill out CE College agreement
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Covers the fundamentals of programmable logic controllers (PLCs) as they are applied in robotics and automation. Includes history, terminology, typical applications, hardware, and software. Incorporates lab and project activities that address operating, monitoring, programming, troubleshooting, and repairing PLC controlled lab trainers as well as actual industrial equipment.

CE ELT 267 Introduction to Robotics

STEMHS2132

Semester long course 0.5 credit	9th - 12th grade	TBD	ELT 106 Student must enroll at ACC and fill out CE College agreement
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Introduces basic robotics. Enables the student to program a robot in a higher-level language to perform various tasks. Covers building and interfacing of sensor circuits.

Physical Education

Weight Training

STEMHS0812

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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This class will focus on furthering the knowledge base of effectively utilizing the weight room to promote physical fitness and maintain overall wellness. Logs of exercise, workouts, diet, health markers/body measurements, and sleep will provide insight into student's individual health and also enable them to evaluate their daily choices leading to their overall health. Developing techniques in creating workout routines, exploring varying diets, and researching means of exercise will be both uncovered and explored by student learning. We will also engage in various team sports and activities that will teach you about teamwork, sportsmanship, and individual physical fitness. This class may be taken multiple times for credit.

Healthy Decisions

STEMHS0810

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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This course is designed to encompass the ever-expanding range of health and personal health concepts. It is intended to help students learn that good health is a matter of mental, physical, and social well-being. Students will learn the skills necessary to live physically active and healthy lives. The topics covered include Health and Wellness, Making Healthful Choices, Nutrition, Mental and Emotional Health, Managing Stress, Resolving Conflicts and Preventing Violence, Tobacco, ADAP (Alcohol and Drug Awareness Program), Illegal Drugs, Sexual Education, and Social Health.

Physical Education

STEMHS089

Semester long course 0.5 Credit	9th - 12th grade	N/A	N/A
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This course will teach and develop lifelong habits promoting the physical well-being of the individual. Though the primary means of fitness will be resistance/strength training, students will be exposed to and practice many areas of fitness. These areas may include: yoga, flexibility, cardiovascular exercise, crossfit, exercise videos, and fitness testing. Fitness testing is utilized as markers of physical fitness as well as to identify improvements in physical fitness. There are various standards that students are asked to meet, but at varying levels. As individuals we are discovering what it means to be a smart consumer of exercise while also uncovering what it means to be "healthy." This class may be taken multiple times for credit.

World Language

French I

STEMHS069F

Year long course 1.0 Credit	9th - 12th grade	N/A	N/A
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French 1 develops the basic concepts in French Language and culture including French pronunciation, grammar, and vocabulary. Students will learn to develop their use of French in all three modes of communication: Interpersonal, Interpretive and Presentational as defined in the Standards for World Languages. The importance of communication and cultural awareness is stressed through a wide variety of activities (group/pair work/video, audio recordings, computer assignments). At the completion of this course, students are expected to be able to:

- Communicate in French orally and in writing to describe themselves and others, daily routine, family and close environment in the present tense.
- Comprehend both written and spoken language about themselves, and others, daily routine, family and close environment in the present tense.
- Demonstrate a basic understanding of French spelling, pronunciation, and grammar.
- Express knowledge of the Francophone world including geography, history and daily life
- Connect French studies with other content areas studied at STEM School Highlands Ranch and found in the world around them.
- Illustrate similarities and differences between the French and American cultures.

French II

STEMHS0610F

Year long course 1.0 Credit	9th - 12th grade	N/A	French I
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French 2 continues to develop the basic concepts in French Language and culture including French pronunciation, grammar, and vocabulary. Students will continue to learn to develop their use of French in all three modes of communication: Interpersonal, Interpretive and Presentational as defined in the Standards for World Languages. The importance of communication and cultural awareness is stressed through a wide variety of activities (group/pair work/video, audio recordings, computer assignments). At the completion of this course, students are expected to be able to:

- Communicate in French orally and in writing to describe themselves and others, daily routine, family and close environment in the present tense.
- Comprehend both written and spoken language about themselves, and others, daily routine, family and close environment in the present tense.
- Demonstrate a basic understanding of French spelling, pronunciation, and grammar.
- Express knowledge of the Francophone world including geography, history and daily life
- Connect French studies with other content areas studied at STEM School Highlands Ranch and found in the world around them.
- Illustrate similarities and differences between the French and American cultures.

Year long Course 1.0 credit	10th - 12th grade	N/A	French II
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French 3 continues to approach concepts in the French Language and culture including French pronunciation, grammar, and vocabulary. Students will continue to learn to develop their use of French in all three modes of communication: Interpersonal, Interpretive and Presentational as defined in the Standards for World Languages. The importance of communication and cultural awareness is stressed through a wide variety of activities (group/pair work/video, audio recordings, computer assignments). At the completion of this course, students are expected to be able to:

- Communicate in French orally and in writing to describe themselves and others, daily routine, family and close environment in the present tense.
- Comprehend both written and spoken language about themselves, and others, daily routine, family and close environment in the present tense.
- Demonstrate a basic understanding of French spelling, pronunciation, and grammar.
- Express knowledge of the Francophone world including geography, history and daily life
- Connect French studies with other content areas studied at STEM School Highlands Ranch and found in the world around them.
- Illustrate similarities and differences between the French and American cultures.

French IV

STEMHS0612F

Year long course 1.0 Credit	11th - 12th grade	N/A	French III
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The emphasis in this course is on encouraging spontaneous expression through extensive oral and written practice via authentic documents (newspaper, magazines, advertisements, media) and literature. Extended discussion and personal reactions or opinions serve to increase correctness of expression. As much current cultural material as possible is integrated into the course to reinforce student proficiency and to prepare the student for the AP course or for proficiency tests as required by some colleges.

AP French

STEMHS0613F

Year long course 1.0 Credit	11th - 12th grade	\$95.00 for AP Exam Textbook	French IV
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Advanced Placement foreign language classes offer the students a weighted credit. Students continue building their fluency in the language through oral, written, listening and reading practice. These classes are conducted entirely in the language with both students and teachers communicating only in the target language. Students prepare to take the Language Advanced Placement tests, which are given in May. The AP test must be taken in order to receive the AP designation on the transcript. Students are committed to AP classes for the entire school year and cannot change classes at semester.

Chinese I

STEMHS069C

Year long course 1.0 credit	9th - 11th grade	N/A	N/A
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Mandarin I is an introductory course in the Standard Mandarin language. The yearlong course will prepare students to speak, read, write, and listen to the Mandarin language at a beginning level. They will also study information specific to China including holidays, history, customs, geography, and how culture informs language. Students must be willing and able to commit to the required study time and effort for this intensive course. Vocabulary acquisition is an integral part of language learning and because Mandarin is not an alphabetic language characters must be practiced daily using both characters and Hanyu Pinyin. Mandarin characters, the Romanized Pinyin, and tones are emphasized. Students will study simple grammatical structures for basic communication including correct syntax and word usage. All skills will be practiced and assessed through reading, writing, speaking and listening. A mock test of the Mandarin Language Proficiency Test, the Hanyu Shuiping Kaoshi, will be given at the end of the year.

Chinese II

STEMHS0610C

Year long course 1.0 credit	9th - 12th grade	N/A	Chinese I
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Students will continue to work on tones, Pinyin, and Mandarin characters. Students will begin to learn a variety of vocabulary and more complex grammatical constructions to express themselves in culturally appropriate forms. Vocabulary acquisition is emphasized and an integral part of language learning. Because Mandarin is not an alphabetic language characters must be practiced daily using both Characters and Hanyu Pinyin. All skills will be practiced and assessed through reading, writing, speaking and listening. A mock test of the Mandarin Language Proficiency Test, the Hanyu Shuiping Kaoshi, will be given at the end of the year.

Chinese III

STEMHS0611C

Year long course 1.0 credit	10th - 12th grade	N/A	Chinese II
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Students will continue to fine tune tones, Pinyin, and Mandarin Characters.

Vocabulary acquisition at this level is more rapid. Students move from simple words to a more sophisticated and expressive vocabulary Grammatical structures also become more complex. The student is expected to be able to communicate in a variety of situations. Because Mandarin is not an alphabetic language characters must be practiced daily using both Characters and Hanyu Pinyin. All skills will be practiced and assessed through reading, writing, speaking and listening. A written essay of 100 Mandarin Characters and a mock test of the Mandarin Language Proficiency Test, the Hanyu Shuiping Kaoshi, will be given at the end of the year.

Chinese IV

STEMHS0612C

Year long course 1.0 credit	10th - 12th grade	N/A	Chinese III
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Mandarin IV is conducted entirely in Mandarin. Students will continue improving fluency through reading, writing, listening, and speaking. Intensive use of the Mandarin language will allow students to deepen their understanding of the Mandarin culture and develop a more native-like language usage. Topics related to Mandarin culture will be investigated in depth. Again, because the Mandarin language is not an alphabetic language, characters must be practiced daily using both Characters and Hanyu Pinyin. All skills will be practiced and assessed through reading, writing, speaking and listening. A written essay of 150 Mandarin characters is required. The mock test of the Mandarin Language Proficiency Test, the Hanyu Shuiping Kaoshi,

will be given at the end of the year. It is highly recommended that the student prepare for the SAT II Mandarin Language Subject Test and the Advanced Placement Language and Culture Test.

AP Chinese

STEMHS0613C

Year long course 1.0 credit	11th - 12th grade	\$95.00 for AP Exam Textbook	Chinese IV
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Designed by the College Board to parallel fourth semester college-level courses in Mandarin Chinese language, AP Chinese Language and Culture courses build upon prior knowledge and develop students' ability to express ideas, exchange opinions, and present information in Chinese, both orally and in writing. These courses also help students in understanding and interpreting written and spoken Chinese. In addition, students explore the culture of Chinese-speaking people in historical and contemporary contexts.

Spanish I

STEMHS069S

Year long course 1.0 credit	9th - 11th grade	N/A	N/A
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Students in Level I will learn the basic skills of speaking, listening, reading, and writing as well as cultural information. Students will study present, future, and past tense verb conjugations, vocabulary, gender of nouns, adjective use, and sentence structure. These courses are designed to present students with the solid knowledge base necessary at intermediate and advanced language levels.

Spanish II

STEMHS0610S

Year long course 1.0 credit	9th - 12th grade	N/A	Spanish I
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Some of the finer grammatical points are learned at this level, making language use a little more sophisticated. The students continue learning to express past events and begin learning more complicated grammatical constructions. Vocabulary learning continues to be an important component of language learning. Practice of all grammatical structures and vocabulary continues through speaking, writing, reading, and listening.

Spanish III

STEMHS0611S

Year long course 1.0 credit	10th - 12th grade	N/A	Spanish II
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In Level III students continue to learn vocabulary and increasingly more complicated grammar and syntactical structures. They begin fine tuning their language by learning expressions, constructions, and different verb tenses and moods that are more complicated and are more native-like in quality. The student and teacher's use of the target language in the classroom increases greatly at this level of language learning.

Spanish IV

STEMHS0612S

Year long course 1.0 credit	10th - 12th grade	N/A	Spanish III
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Level IV classes are conducted entirely in the target language. The students work on improving their fluency speaking, reading, writing and listening to the language they are learning. Vocabulary study continues as does practice and review of the grammatical structures already learned. Classroom discussions are conducted on topics of interest to the students. The reading is from works of native authors.

Year long course 1.0 credit	10th - 12th grade	\$95.00 for AP Exam Textbook	Spanish IV
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Advanced Placement foreign language classes offer the students a weighted credit. Students continue building their fluency in the language through oral, written, listening and reading practice. These classes are conducted entirely in the language with both students and teachers communicating only in the target language. Students in Level 5 classes prepare to take the Language Advanced Placement tests, which are given in May. The AP test must be taken in order to receive the AP designation on the transcript. Students are committed to AP classes for the entire school year and cannot change classes at semester.

Fine Arts

Ceramics I

STEMHS0512

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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Ceramics I is an introduction to design, glazes, basic handbuilding, and wheel throwing skills. The Ceramics I course will provide students with a foundation in the history of ceramics, with an emphasis on critique, aesthetic inquiry, and creative production. This course provides knowledge of ceramic techniques (e.g., kiln firing and glazing) and processes, with a focus on creative design and craftsmanship.

Ceramics II

STEMHS0513

Semester long course 0.5 credit	9th - 12th grade	N/A	Ceramics I
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Ceramics II builds on the skills and concepts learned in Ceramics I and explores clay at an advanced level. This course has an emphasis on skill, technique, form, and design.

Ceramics III

STEMHS0535

Semester long course 0.5 credit	10th - 12th grade	N/A	Ceramics I and II
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Ceramics III builds on the skills and concepts learned in Ceramics II and explores clay at a more advanced level. The course requires the student to have a high production of studio artworks, research, and art criticism skills. It is intended to allow students to further advance study and explore their art skills and work 3 dimensionally through clay.

Drawing & Painting I

STEMHS059

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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Students will explore different approaches to drawing & painting while applying the elements and principles of design to develop skills and sensitivity to line, shape, color, value, texture and composition. A variety of techniques will be explored. Students will be expected to develop technical skills and their own styles of drawing & painting.

Drawing & Painting II

STEMHS---

Semester long course 0.5 credit	9th-12th	N/A	Drawing & Painting I
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Students will explore different approaches to drawing and painting while applying the elements and principles of design to develop skills and sensitivity to line, shape, color, value, texture and composition. A variety of

techniques will be explored. Students will be expected to develop technical skills and their own styles of drawing and painting

Concept Art

STEMHS0516

Semester long course 0.5 credit	9th - 12th grade	N/A	Drawing and Painting I or teacher approval
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Students will study the fundamental artistic skills required to create a video game. Students will create concept art in order to create video game assets using digital drawing software. Students work in teams and individually to create virtual environments, objects and characters.

3D Modeling: Asset Design

STEMHS0546

Semester long course 0.5 credit	9th - 12th grade	N/A	Concept Art
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Students will continue to advance their artistic skills and concepts required to create a video game. Creature/Character design will be the focus. Students will develop 3D models that demonstrate rigging, texturing, animation, in order to create video game assets ready for Unity or other game maker applications.

Digital Photography I

STEMHS0514

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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The purpose of this course is to give students an understanding of photographic imagery. Content includes a study of photography as a visual communication; perception and response to the visual aspects of photography found in prints, slides and published images; the valuing of the photographic image as a visual statement; the production of photographs with particular subject matter, types of lighting and variations in printing; the knowledge of images and styles of major photographers; the criteria for critically analyzing photographs to make judgments concerning quality; the knowledge of basic techniques for proper presentation of photographic works.

Digital Photography II

STEMHS0515

Semester long course 0.5 credit	9th - 12th grade	N/A	Digital Photography I
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The purpose of this course is to give students an understanding of photographic imagery. Students will apply the concepts learned in photo I towards the creations of photographic images based on an idea or concept. Students will use the artform of photography to reflect and comment on larger ideas. Concepts studied may include but are not limited to, how a photo tells a story and the concept of perfection. Digital Image II focuses more heavily on image manipulation, printed images and post production.

Video Production I

STEMHS0517

Semester long course 0.5 credit	9th - 12th grade	N/A	Digital Photography I
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Cinematography/Video Production courses emphasize the application of the elements of art and principles of design relative to the history and development of cinema, television, and video production. Students experience a variety of media, techniques, and processes as they study production values and various styles of cinematography. Students engage in the creation of a variety of video projects. It is recommended that students have a working understanding of photography or have taken Photo I.

Video Production II

STEMHS0518

Semester long course 0.5 credit	9th - 12th grade	N/A	Video Production I
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Cinematography/Video Production courses emphasize the application of the elements of art and principles of design relative to the history and development of cinema, television, and video production. Students engage collaboratively in the creation of a variety of video projects. Production value is emphasized. Students write, film and edit video shorts on a variety of themes. Video II projects are longer and more involved than Video I.

Video Production III

STEMHS0536

Semester long course 0.5 credit	10th - 12th grade	N/A	Video Production I & II
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This level III visual art course is designed to hone students' aesthetic skills. Students apply advanced cinematography concepts, lighting, sound and editing techniques to a finished product. Students work together to create a polished finished product in preparation for submission to a film festival. Students are encouraged to specialize in the area of cinematography(camera work and lighting), writing and directing, sound engineering or editing. Successful video production III students will specialize, collaborate and work well as part of a team.

Graphic Design I

STEMHS0537

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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Graphic Design I will introduce students to various tools, techniques and concepts employed by the graphic artist. Students will learn design and layout while completing professional products with typeface, packaging, lettering, illustration and advertising. Students will develop design skills using the Adobe suite as tools to design striking digital art. This introductory class is designed for students interested in graphic art, digital art, animation, advertising, or web design.

Graphic Design II

STEMHS0538

Semester long course 0.5 credit	9th - 12th grade	N/A	Graphic Design I
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This course continues the creative and technical experiences introduced in Graphic Design I along with illustrations, lettering, advertising methods, and publication layout and design. It will challenge students to expand their creativity and they will learn more extensive and advanced creation skills.

Art III

STEMHS0519

Semester long course 0.5 credit	10th - 12th grade	N/A	A or B in a level II Visual art course
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This course is a preparatory course for AP Art and offered only to upper level art students interested in pursuing art studies beyond which the current high school art curriculum offers. The course requires the student to have a high production of studio artworks, research, and art criticism skills. It is intended to allow students of advanced study to further explore their art skills independently, meaning there will be no direct teaching from the course facilitator and students must perform daily tasks and time-management to produce finalized projects over a reasonable period of time to be agreed-upon between course facilitator and student. Various media and disciplines may be studied, including but not limited to, painting, drawing, ceramics, and digital photography.

AP Studio Art: Drawing

STEMHS0521

Year long course 1.0 credit	10th - 12th grade	\$95.00 for AP Exam	Drawing & Painting I & II
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Designed for students with a serious interest in art, AP Studio Art—Drawing focuses on a variety of concepts and approaches in drawing, enabling students to demonstrate in-depth knowledge of the processes, range of abilities, and versatile uses of media, technique, problem solving, and scope. They can demonstrate such conceptual variety through the use of one or several media. These courses enable students to refine their skills and create artistic works to submit via portfolio to the College Board for evaluation.

AP Studio Art: 2D Design: Photography

STEMHS0539

Year long course 1.0 credit	10th - 12th grade	\$95.00 for AP Exam	Digital Photo I & II
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Designed for students with a serious interest in art, AP Studio Art—Two-Dimensional: Photography focuses on a variety of concepts and approaches in photo, enabling students to demonstrate a range of abilities and versatility with media, technique, problem solving, and scope. Such conceptual variety can be demonstrated through the use of one or several media. These courses enable students to refine their skills and create artistic works to submit via a portfolio to the College Board for evaluation.

AP Studio Art: 2D Design: Painting

STEMHS0522

Year long course 1.0 credit	10th - 12th grade	\$95.00 for AP Exam	Drawing & Painting I & II
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AP Studio Art—Two-Dimensional courses focus on a variety of concepts and approaches in drawing, painting and 2-D design, enabling students to demonstrate a range of abilities and versatility with media, technique, problem solving, and scope. Such conceptual variety can be demonstrated through the use of one or several media. These courses enable students to refine their skills and create artistic works to submit via a portfolio to the College Board for evaluation.

AP Studio Art: 3D Design: Ceramics

STEMHS0523

Year long course 1.0 credit	10th - 12th grade	\$95.00 for AP Exam	Ceramics I & II
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AP Studio Art—Three-Dimensional courses focus on a variety of concepts and approaches in 3-D design and creation, enabling students to demonstrate a range of abilities and versatility with media, technique, problem solving, and scope. They can demonstrate such conceptual variety through the use of one or several media. These courses enable students to refine their skills and create artistic works to submit via portfolio to the College Board for evaluation.

Gaming Studio

STEMHS1025

Year long course 1.0 credit	10th - 12th grade	Course fee TBD	Concept Art and 3D Modeling or demonstration of equivalent knowledge.
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Design, build, and collaborate to create a singular game using a variety of tools (Sculptris, Unity Game Engine, Blender, Krita, etc.). Students will experience how a game studio functions and learn to work in large teams effectively. Students will learn Git and LFS Git repositories. Students will be expected to fill multiple roles, such as: 2D Concept Artist, 3D Modeler/Sculpture, 3D Rigger, Level Designer, Art Director, Sound Director, Composer, Character Designer, Software Engineer, Lead Game Designer, Story Director, Scrum Leader, and Networking and Database Engineer. Students are expected to pursue a certification in their Respective field of study, Depending on the area of work, **this course can count as a STEM Elective or a Fine Arts credit.**

Music Fundamentals

STEMHS0532

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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This semester-long non-repeatable class is an introduction to music for students with no formal musical training. We explore what it means to enjoy music better; how to identify and demonstrate the fundamental aspects of music such as rhythm, pitch, dynamics, and tone; how to compose simple rhythms, melodies, and lyrics. We play percussion, sing melodies and harmonies, listen to your favorite songs, and perform along with the other music classes in the end-of-semester concert.

Music Production

STEMHS0531

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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The STEM Music Production program is unique for developing students' guitar technique and ensemble musicianship, alongside the music fundamentals of theory, technology skills and creativity. In Music Fundamentals, students learn the "math of music" and instrumental skills in the keys of A and D while using Ableton Software and Sibelius software and writing original songs over tried and tested chord progressions. After fall/spring break, students choose from guitar, piano, songwriting, music technology assignments and choose from the keys of G,C, F, or E . Music Fundamentals class presents "open house" events for parents and guests as well as occasional public performances.

HS Beginner Band

STEMHS0543

Year long course 1.0 credit	9th - 12th grade	N/A	N/A
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This year-long, non-repeatable course is an introduction to performing music in the concert band setting for students with limited or no musical experience. This is a great follow-up course to the Fundamentals of Music class. Instruments taught in this course are flute, clarinet, trumpet, trombone, baritone, and percussion, which can be expanded on in subsequent intermediate and advanced instrumental ensembles. STEM does not supply instruments but our instructor will help you determine the best option for obtaining the required materials before the year begins. Instrument maintenance, playing technique, and musical theory are all taught as you perform a variety of music with a group. We will perform as a band during concerts throughout the year.

HS Intermediate Concert Ensemble

STEMHS0544

Year long course 1.0 credit	9th - 12th grade	N/A	Placement/ Role by audition, signature from music instructor
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This year-long repeatable course is the intermediary between STEM's Beginner Band/Orchestra courses and the Advanced Symphonic Ensemble. We will perform classical transcriptions and arrangements of popular music for multiple concerts and school events. Members must be able to perform a major scale of their choice with characteristic tone, a portion of the chromatic scale, and sightread notated music that feature rhythms such as half notes, quarter notes, quarter rests, and eighth notes. Instrumentation is for standard symphonic orchestra, including all winds, strings, and orchestral percussion.

Choir

STEMHS0526S1/S2

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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- Students learn proper breath support and vocal production
- Students perform at concerts and events
- Students will learn a variety of vocal genres
- Students learn to read music as it applies to vocal scores
- Students write, produce and perform original music

HS Theater I

STEMHS0123

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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A comprehensive beginning theater class. the purpose of the course is to give students an overview of Theater in general. We learn the tools of theater in mind. body. and voice which include the following: Scene work, monologues, improvisation, and pantomime. Major emphasis of the class is on developing beginning acting skills, teamwork and self esteem.

HS Theater II

STEMHS0125

Semester long course 0.5 credit	9th - 12th grade	N/A	Theater I
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Theater II helps students develop experience and skill in one or more aspects of theatrical production. Advanced courses concentrate on extending and refining dramatic technique, by expanding students' exposure to different types of theatrical techniques and traditions and increasing their participation in public productions. Theater II helps students develop experience and skill in one or more aspects of theatrical production. Advanced courses concentrate on extending and refining dramatic technique, by expanding students' exposure to different types of theatrical techniques and traditions and increasing their participation in public productions. Theater II Curriculum is performance based. It has been developed to expand and deepen the students' skills as an artist. They will do so by building on material covered in Theater I curriculum, with units in: Character Analysis, Monologue Analysis, and writing, Shakespeare Performance, and Design. The curriculum will culminate in a performance.

HS Theater Performance

STEMHS0126

Semester long course 0.5 credit	10th - 12th grade	N/A	Theater I and II
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Theater Performance courses provide students with experience and skill development in one or more aspects of theatrical production, by allowing them to concentrate on acting and performance skills. Introductory courses explore fundamentals, while advanced courses extend and refine technique, expand students' exposure to different types of theatrical craft and traditions, and increase their participation in public productions.

General Electives

Principles of Finance

STEMHS1211

Semester long course 0.5 credit	9th - 12th grade	N/A	BUS 115
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Course furthers student understanding of two specific business activities—accounting and finance—that were introduced in an earlier High School Business course, BUS 115. Through team activities and a semester-long corporate investment project, students make connections between accounting and finance. Students acquire an understanding of financial statements, calculate financial ratios, and make corporate financial management decisions based on their analysis of that financial data. In addition, students apply the concepts of operating and overhead costs, internal accounting controls, and budgets to their class business. Lastly, cost/benefit analysis is introduced as an element of financial planning and decision-making.

Accounting I

STEMHS---

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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This course prepares the accounting student in the theory and techniques of accounting necessary for the advanced courses and provides a basic introduction to accounting for those students pursuing an accounting degree. Students will be introduced to financial statements and the accounting cycle for a service and merchandise business.

*This course counts as a general elective; it does not count as a Math or STEM elective.

School-Based Enterprise

STEMHS---

Year long course 1.0 credit	9th - 12th grade	N/A	N/A
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Students enrolled in this course will work in the student store where they will gain valuable work experience, customer service skills, merchandising and basic money handling skills. This course also includes classroom instruction on the fundamentals of retail marketing. Students are automatically enrolled in DECA or FBLA, which are the Business Career and Technical Student Organizations. Opportunities available through DECA and FBLA include leadership development, field trips, travel, and competition. Students who successfully complete this course will be prepared for entry-level positions in retail.

The School-Based Enterprise (SBE) is an entrepreneurial operation in a school setting that provides goods/services to meet the needs of the market. SBE's are managed and operated by students as hands-on learning laboratories that integrate National Curriculum standards in Marketing, Finance, Hospitality or Management. SBE's provide realistic and practical learning experiences that reinforce classroom instruction.

*This course counts as a general elective; it does not count as a Math or STEM elective.

CE MAR 216 Principles of Marketing

STEMHS1212

Semester long course 1.0 credit	9th - 12th grade	N/A	Student must enroll at ACC and fill out CE College agreement
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Presents the analysis of theoretical marketing processes and the strategies of product development, pricing, promotion and distribution, and their applications to businesses and the individual consumer.

CE ENP 105 Introduction to Entrepreneurship

STEMHS1213

Semester long course 1.0 credit	9th - 12th grade	N/A	Student must enroll at ACC and fill out CE College agreement
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Explores the business skills, personality traits, and commitment necessary to successfully plan, launch, and grow an entrepreneurial venture. This course will cover the challenges and rewards of entrepreneurship. This course will cover the role of entrepreneurial businesses in the United States and the world and their impact on our national and global economy.

CE BUS 115 Intro to Business

STEMHS128

Semester long course 1.0 credit	9th - 12th grade	Textbook fee	Student must enroll at ACC and fill out CE agreement
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Focuses on the operation of the American business system. Covers fundamentals of the economy, careers and opportunities, marketing, management, production, governmental regulations, tools of business and social responsibilities.

Introduction to Scrum, Agile, and Project Management

STEMHS1210

Year long course 1.0 credit	9th - 12th grade	N/A	N/A
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This program is designed for students to expand their knowledge of scrum, agile and project management in a wide range of industries including software development, information technology infrastructure, commercial products, healthcare, financial services, government, and high technology. Students will be working on cross-functional projects and teams managing prioritized tasks. We will utilize the best mix of agile, traditional, and hybrid techniques to meet specific project requirements, recognize and avoid pitfalls, and improve quality.

Yearbook

STEMHS0113

Year long course 1.0 credit	9th - 12th grade	N/A	N/A
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This is an experiential course in which students will write, edit, design, and layout the school yearbook. Leadership, cooperation and high standards of achievement are essential to success in this class. Students will be assigned roles such as a reporter, editor, copywriter, design editor and photographer. Students will work together as a team to produce a high quality yearbook highlighting the achievements of STEM School students, faculty and staff. This is an English elective course and does not meet graduation requirements for English.

Introduction to Creative Writing

STEMHS0127

Semester long course 0.5 credit	9th - 12th grade	N/A	N/A
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Introduction to Creative Writing offers students the opportunity to develop and improve their technique and individual style in poetry, short story, drama, essays, and other forms of prose. The emphasis of the course is on writing; however, students may study exemplary representations and authors to obtain a fuller appreciation of the form and craft. This course will allow students to transfer literacy skills obtained in their main English courses and apply them in a real-world context by learning about publication.

HS Study Hall

STEMHS221

Semester long course 0.0 credit	9th - 12th grade Required for 9th grade	N/A	N/A
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Supervised class period devoted to completing assigned class work or projects.

Professional Internship (Fall/Spring)

STEMHS2124

Semester long course 0.5 credit	11th - 12th grade	N/A	Required enrollment with CareerWise OR approval from career discovery team.
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Students will work in a professional setting in an industry that aligns with their career interests or goals. Students will have an onsite supervisor, as well as report to a STEM School supervisor for periodic reporting. Students will only be placed in Internships that are approved by The STEM School and Academy for this credit. Actual content and specific industry will vary according to student interest, and availability of industry partners. Students will be evaluated regularly, and if they do not meet identified expectations, they will be removed from the program, and will not receive credit. Student evaluations will be based on: Attendance, Attitude and Accomplishments

Teacher/ Office Assistant

STEMHS224

Semester long course 0.25 credit	11th - 12th grade	N/A	Administrative approval and maintain "C"s or better
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Teacher/Office assistants provide needed support to classroom teachers, office staff, and students. They are instrumental in providing instructional support to enrich teaching by providing individual support to students as needed. Teacher/Office assistants help staff with various duties including clerical support by distributing materials, photocopying, and filing.

Classroom teacher may require a teacher assistant to check and grade assignments and collect various materials for the upcoming lessons. Office staff may require an office assistant to work on special projects that require attention to make the school run smoothly. As an assistant, you should be able to work independently to complete responsibilities with minimal supervision.

Courses Not Currently Offered - [click here](#)