

Springfield High School
Course Catalog – Course Descriptions
2022-2023 School Year
Grade 11 Students

This document contains information about courses available to 11th grade students at Springfield High School. It is an abbreviated version of our comprehensive course catalog which is included with this communication.

Graduation Requirements

In order to graduate and earn a diploma from Springfield HS, all students must meet the following requirements:

1. Successfully complete and earn credit for courses as detailed in the table below.
2. Students that do not demonstrate proficiency on the Algebra I, Biology, and Literature Exams will be scheduled into remediation courses to recover content and retake the corresponding exam.
3. Credits within the 24 for graduation must come from courses taught by SHS teachers with a prescribed curriculum. The following courses do not meet graduation credit requirements:
 - a. Independent Study Courses
 - b. Course Audits
 - c. Online Courses
 - d. Work Study or Internship Credits
 - e. Dual Enrollment

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Graduation Credit Requirements	
Department	Credits
Language Arts (<i>Language Arts I, II, III and IV minimum requirements</i>)	4
Social Studies (<i>United States History and US Government required</i>)	3
Science (<i>Keystone Biology and Chemistry required</i>)	3
Math (<i>Keystone Algebra and Geometry/Math Analysis</i>)	3
World Language (<i>2 years in same language preferred</i>)	2
HE/PE (<i>Mandatory HE/PE in Grades 9 and 11</i>)	1
Finance (<i>640, 958A, 963, 964, 981, 445</i>)	0.5
Core Requirements	16.5
Additional Coursework	
Primary Academy	3
Miscellaneous Courses or Secondary Academy (<i>TO MEET MINIMUM GRADUATION REQUIREMENTS</i>)	4.5
Minimum Credits Required to Graduate with SHS Diploma	<u>24</u>
Miscellaneous Courses or Secondary Academy (<i>ABOVE MINIMUM GRADUATION REQUIREMENTS</i>)	4
Maximum Possible Earned Credits	28

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English and Language Arts

The Language Arts program at Springfield High School integrates all the language arts skills– reading, writing, speaking, listening, thinking, and researching – into the curriculum and helps students apply these skills to meaningful tasks. Our program goal is to have students achieve high academic standards goals in the language arts: reading independently, reading critically, analyzing and responding to literature, writing in various forms for a variety of audiences, producing compositions of high quality, speaking proficiently, and using research skills. Students at all grade levels will be expected to know and meet district and state standards in reading, writing, speaking and listening. Technology is infused into each course in a deliberate and meaningful fashion.

CH 130 Hn Language Arts (III): Global Perspectives /Honors

1.0 credit

Language Arts Credit

Grade: 11

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

Grade of 84% or higher in 120 or

Grade of 94% or higher in 121

In Language Arts (III) Honors, students will build upon their 10th grade literature experience. This course moves students from an American outlook to a global perspective. Through this global exposure to modern world literature, students explore the human condition in light of the cultural implications through reading experiences drawn from throughout the world, including the Middle East, Asia, Africa and Latin America. In addition to the study of literature, this course focuses on college preparation, including an emphasis on the development of college level writing and literary analysis, MLA format, vocabulary development via the Sadlier Vocabulary Workshop program (Level G), and independent reading and writing. Assessment methods vary and include written, multi-media and group presentations. In Honors level classes, students must be self-motivated, possess strong writing skills, and be able to work through challenging texts independently. Students will be required to read and write more extensively and in more depth. Additionally, a greater expectation is placed on outside preparation and work in order to be ready for a more rigorous classroom learning environment.

Language Arts (III) Honors requires the following additions to/variations from the College Preparatory level:

- *A summer reading assignment for a required text.*
- *Two to three additional reading experiences.*
- *Two to three additional writing pieces or projects.*
- *Reading material with more mature subject matter and themes.*

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CH 131 Language Arts (III): Global Perspectives /College Preparatory

1.0 credit

Language Arts Credit

Grade: 11

Language Arts (III) College Preparatory builds upon the 10th grade literature experience. This course moves students from an American outlook on the 20th century to a global perspective. Through this global exposure to modern world literature, students explore the human condition considering the cultural implications found in novels, short stories, poetry, plays, and memoirs from throughout the world, including the Middle East, Asia, Africa and Latin America. In addition to the study of literature, students will employ the writing process in a variety of modes, including narrative, informational, and persuasive. Grammar, usage, mechanics, and vocabulary development via the Sadlier Vocabulary Workshop program (Level F) will be stressed. Assessment methods vary and include oral, written, multi-media and group presentations.

CH 139 Advanced Placement English Language and Composition

1.0 credit

Language Arts Credit

Grade: 11

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

Grade of 90% or higher in 120 or

Grade of 94% or higher in 121

The AP English Language and Composition course is designed to help students become skilled readers of prose written in a variety of rhetorical contexts and to become skilled writers who compose for a variety of purposes. Both their writing and their reading should make students aware of the interactions among a writer's purposes, audience expectations, and subjects as well as the way generic conventions and the resources of language contribute to effectiveness in writing. To this end, grammar instruction is a strong component of the course. Students will have opportunities to write about a variety of subjects and to demonstrate an awareness of audience and purpose. The overarching objective is to enable students to write effectively and confidently across the curriculum and in their professional and personal lives. Another purpose of the AP English Language and Composition course is to enable students to read complex texts from many disciplines and historical periods with understanding and to write prose of sufficient richness and complexity to communicate effectively with mature readers. To reflect the increasing importance of graphics and visual images in texts published in print and electronic media, students are asked to analyze how such images both relate to written texts and serve as alternative forms of texts themselves. Vocabulary development will be addressed via the Sadlier Vocabulary Workshop program (Level G).

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Additional Language Arts Course Offerings

150 News Media and Journalism (Course located in Language Arts Department course listing)

1.0 credit Humanities, Technologies, and Arts Grades: 10, 11, 12

In News Media and Journalism, students will focus on the gathering and dissemination of newsworthy facts and explore multiple modes of news publications like traditional newspapers, online news publications, podcasts and other modern news platforms. Students will study the ethics of student journalism and engage in the interview process, feature and editorial writing, audio and digital reporting, photography, editing, and publishing. A focal point of the course will center on the news gathering process and explore the biases of current news media. This analytical approach will encourage students to craft their views and share events in a responsible and meaningful manner with their school community. All students will submit quarterly articles and help with the development of ideas and topics for the editorial staff of the SPRI HIAN. All students interested in an introduction to news media and journalism should consider taking this course.

151 Literature and Film

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

In teaching both literary and filmmaking techniques, this course will use a variety of carefully chosen films as a medium for understanding the relationship between film and literature. Students will study the language of film and will focus on artistic techniques, such as the use of lighting, camera angles, music and sound, and editing to best evaluate a film's success. Students will submit film reviews and complete presentations based on the techniques and devices studied and interpreted. All Language Arts academic standards will be met in this course with a heavy emphasis on persuasive writing.

152 Philosophy of Pop Culture

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Using the popular television show *The Good Place* as its foundation, this course will explore the philosophical underpinnings of popular movies, television, cartoons, and novels. From *Star Wars* to *The Avengers*, *Stranger Things* to *Game of Thrones*, *The Simpsons* to the *Peanuts*, *The Hunger Games* to Harry Potter, students will be introduced to philosophical concepts found in modern pop culture. Ultimately, students will explore a pop culture topic of their own choosing. Students should expect to read and write as a central component of this course.

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CHE995 AP Seminar – Advanced Placement Seminar

1.0 credit Humanities, Technologies, & Arts Grades: 10, 11

AP Seminar is a foundational course that engages students in cross-curricular conversations that explore the complexities of academic and real-world topics and issues by analyzing divergent perspectives. Using an inquiry framework, students practice reading and analyzing articles, research studies, and foundational literary and philosophical texts; listening to and viewing speeches, broadcasts, and personal accounts; and experiencing artistic works and performances. Students learn to synthesize information from multiple sources, develop their own perspectives in research-based written essays, and design and deliver oral and visual presentations, both individually and as a part of a team. Ultimately, the course aims to equip students with the power to analyze and evaluate information with accuracy and precision in order to craft and communicate evidence-based arguments. AP Seminar is an interdisciplinary course; students may focus their research on topics of their choosing.

Communications Course Offerings (found in the CVP Department Course Listing on HAC)

839 Presenting in a Tech Driven World

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Advancements and innovations in technology and software applications are being integrated into presentations and public speaking to provide for a more robust and interactive experience for the audience and presenter alike. This course will introduce students to a variety of presentation platforms to complement the public speaking skills students will develop as they learn the language of communication, both verbal and nonverbal, when presenting to an audience. Students in this course will participate in a variety of speaking/presentation situations including informative, persuasive, and narrative while integrating technology to enhance the effectiveness of the presentation. Students will also evaluate presentations, express individual opinions, and work on presentation projects with peers.

Presentation technology such as: Adobe InDesign, Adobe Spark, AniMaker, Cute Cut, Cyberlink Power Director, iMovie, PowToons, and Prezi will be explored.

840 Acting Workshop

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11

Students will develop self-confidence in this course, both as performers and as individuals. They will receive a general orientation to the Stanislavski "Method" of acting. Course activities include extensive work in improvisation, characterization, stage movement, monologues, and scene work. Class and teacher viewing of performances and class participation are included in the evaluation of students.

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843

Behind the Curtain: An Introduction to Technical Theater

0.5 credit

Humanities, Technologies, & Arts Grades: 09, 10, 11, 12

In this course, students will explore the backstage world of theater utilizing the technical equipment found in the high school theater. Students will participate in units of study focused on theatrical spaces, scenic design, beginning set construction, lighting design, costume design, sound design, prop design, and stage management. Assessment will consist of a combination of hands-on projects, design simulations, and traditional written assessments. No prior technical experience necessary.

Social Studies

The Social Studies program at Springfield High School is designed to allow the student the option of becoming involved in specific aspects of the social sciences that parallel his/her interest. The program is designed to consider the development of the intellectual capabilities of each student which will in turn lead the student to become a more rational thinking being. Coupled with this is an emphasis on the application of the many higher order thinking processes including the various skills connected with decision making, problem solving, critical and creative thinking. The students will have the necessary knowledge, intellectual and social awareness, and communicative skills to function and develop in the 21st century.

CH 240

Hn United States Civics and Government/ Honors

1.0 Credit

Social Studies

Grade: 11

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

Grade of 84% or higher in United States History H

Grade of 94% or higher in United States History CP

United States Civics and Government is designed to assist students in developing an understanding of the American political system and an appreciation for the important role that citizens play in our democratic republic. Units of study include the purpose and function of government, historical foundations and significant documents of American government, general processes of government, the interpretation and application of law, and the role of individual citizens and that of groups and organizations in our political system. Students will also compare and contrast the role of the federal government with that of the state of Pennsylvania. Internet research is used for simulations and problem solving projects as well as to provide a consistent awareness of current events in Washington and Harrisburg.

Within the Honors classes students will be expected to challenge themselves to think deeply about the connections between the historical texts they encounter and current events that are unfolding within the United States today. Students will also be expected to take engage in various independent and collaborative research and writing initiatives.

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CH 241 United States Civics and Government/ College Preparatory

1.0 Credit Social Studies Grade: 11

United States Civics and Government is designed to assist students in developing an understanding of the American political system and an appreciation for the important role that citizens play in our democratic republic. Units of study include the purpose and function of government and the historical foundations and significant documents of American government, the general processes of government, the interpretation and application of law, and the role of individual citizens and that of groups and organizations in our political system. Students will also compare and contrast the role of the federal government with that of the state of Pennsylvania. Internet research is used for simulations and problem solving projects as well as to provide a consistent awareness of current events in Washington and Harrisburg.

CH 245 Advanced Placement United States Government & Politics

1.0 Credit Social Studies Grade: 11

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

Grade of 90% or higher in Grade 10 Honors United States History

Grade of 94% or higher in Grade 10 CP United States History

The Advanced Placement American Government and Politics course is an intensive program of instruction and personal study focusing on the national level of government and politics. Students will critically examine five common areas and subjects normally covered in an introductory college political science course: the Constitution; underpinnings of Government, political parties and interest groups; institutions and policy processes of the national government; civil rights and civil liberties. The course uses web resources extensively in addition to textbook and primary source materials. Students with consistently high grades in social studies and teacher recommendations will be considered for the course. This course follows the AP curriculum.

Social Studies – Additional Course Offerings

CH 254 Civil and Criminal Law

0.5 Credit Humanities, Technologies, & Arts Grades: 10, 11, 12

The Civil and Criminal Law course offers the student an exciting hands-on experience in practical law using the Street Law Text and other Street Law materials. The major emphasis will be on practical application through student simulations, mock trials, moot court hearings, and presentations by legal experts. Students will be using the Internet to research past cases, precedents, and legal updates.

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CH 255 Psychology

0.5 Credit Humanities, Technologies, & Arts Grades: 10, 11, 12

The primary goal of this semester course is to expose students to some of the major topics and themes of the field of psychology. The course covers the history of psychology and the four major perspectives of psychology; biological, behavioral, psychodynamic, and humanistic, as well as a study of the brain, self-concept and advertising psychology, and social psychology and abnormal psychology. Students will participate in experiments and demonstrations to reinforce course concepts and as a result, gain a better understanding of the forces behind human behavior; their own and others.

CH 258 Constitutional Civil Rights

0.5 Credit Humanities, Technologies, & Arts Grades: 11, 12

Anyone who has ever watched a cop drama knows that criminal suspects have certain rights, including the right to remain silent and the right to an attorney. People speak their minds freely on television and on the internet knowing that they have a right to free speech. These rights, and many more, are guaranteed and protected under the United States Constitution and the Bill of Rights. In this course, we will explore these rights in real life cases and analyze the Supreme Court's role as protector and defender of the Constitution. Activities will include debates and simulations, as well as participation in an intensive moot Supreme Court hearing.

CH^E261 Sociology

0.5 Credit Humanities, Technologies, & Arts Grades: 11, 12

Sociology is the study of social life, social change, and the social causes and consequences of human behavior. In this one semester course, students will focus on human behavior in families, religious groups, local communities, and in the broader society. Students will examine such topics as cultural conformity, adolescent socialization, racial and ethnic relations, and gender. Class discussions based on assigned readings will be the primary activity during this course, with several short reaction papers and examinations assigned throughout the semester. Students are also required to complete a culminating research project. Students must realize that a regimen of regular study and above average ability in reading and synthesizing skills are required in order to achieve success at this level.

CH 235 Advanced Placement European History

1.0 Credit Humanities, Technologies, & Arts Grades: 11, 12

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

Grade of 90% or higher in Honors United States History, Honors United States Government and Politics, AP Gov, or AP U.S. History

Grade of 94% or higher in CP United States History or CP United States Government and Politics

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Note: This course does not replace the 11th grade requirement of US Government and Politics.

This course is designed as a college level course and students are expected to take the AP test in May. The scope of the course is from the Renaissance to present day and utilizes a college level text plus a variety of primary sources. Students will be expected to complete several research projects plus participate in historic simulations and class discussions. Analysis of material to determine patterns in history is a necessity in the course, as is understanding how to write a complete persuasive historic essay. Students must become comfortable in using the internet for research and contacting other AP sites. This course follows the AP curriculum.

CH 256 Advanced Placement Psychology

1.0 Credit Humanities, Technologies, & Arts Grades: 11, 12

Prerequisite: Grade of 94% or higher in social studies and/or language arts courses

Grade of 89 % or higher in honors level social studies courses

Grade of 84% or higher in AP level social studies courses

This is a rigorous college level course. By design, the course is patterned after a typical undergraduate introductory psychology course. A college-level text is used in the course. The course covers 14 designated topics: 1) History and Approaches; 2) Research Methods; 3) Biological Bases of Behavior; 4) Sensation and Perception; 5) States of Consciousness; 6) Learning; 7) Cognition; 8) Motivation and Emotion; 9) Developmental Psychology; 10) Personality; 11) Testing and Individual Differences; 12) Abnormal Psychology; 13) Treatment of Psychological Disorders; 14) Social Psychology.

CH 265 AP Human Geography

1.0 Credit Humanities, Technologies, & Arts Grades: 10, 11, 12

The AP Human Geography course introduces students to the systematic study of patterns and processes that have shaped human understanding, use, and alteration of Earth's surface. Students learn to employ spatial concepts and landscape analysis to examine human socioeconomic organization and its environmental consequences. They also learn about the methods and tools geographers use in their research and application.

CH 982 Advanced Placement Macroeconomics

1.0 credit Humanities, Technologies, & Arts Grades: 11, 12

Prerequisite: Successful completion of H/CP Algebra II

This college-level course complies with College Board guidelines and is the equivalent of an introductory-level university course in Macroeconomics. AP Macroeconomics provides students a thorough understanding of the principles of economics that apply to an economic system as a whole. Students learn about scarcity, national income,

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solving. The course involves use of calculators, simulations on the computer, and using the computer to produce lab reports.

CH 330	Hn Physics /Honors	
1.0 Credit	Science Credit	Grades: 11, 12

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

Math

Grade of 90% or higher Honors Geometry

Grade of 94% or higher College Prep Geometry

This course focuses on understanding the basics laws of mechanics: motion, forces, momentum, energy, torque, rotation, and electricity. Skills of algebra, geometry, and trigonometry will be integrated freely and extensively in the course, both in the formulation of physical laws and in the solutions of problems. Students are expected to manipulate algebraic expressions involving multiple variables and should have an understanding of basic trigonometric functions. The student will be required to conduct experiments and compile data into lab reports. In addition, students in the honors physics course will be expected to:

- Compile 12-15 formal lab reports throughout the course,
- Conduct independent and group research

This course is ideal for students who have a career interest in the sciences, math, or engineering.

CH 331	Physics /College Prep	
1.0 Credit	Science Credit	Grades: 11, 12

Prerequisite: Teacher recommendation upon successful completion of 320 or 321 (CP or Hn Chemistry)

Students are expected to use mathematics to quantitatively discuss the concepts of physics, as well as be able to solve problems. This course will focus on the laws of mechanics, including motion, forces, momentum, energy, thermodynamics, torque, rotation and electricity. Students taking the course will improve their problem-solving skills and learn to compile laboratory data into a lab report. Throughout the course, students will use lab equipment and computer-interface software to collect data and will be required to report their findings through formal lab reports. Students are expected to use mathematics to quantitatively discuss the concepts of physics, as well as be able to solve problems.

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CH 355 Advanced Placement Physics 1

1.0 Credit Science Credit Grades: 11

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

Math

Grade of 90% or higher in Honors Pre-Calculus

Grade of 94% or higher in College Prep Pre-Calculus

Students who have already completed Honors Physics 330 are not eligible for 354. This course is ideal for students who have a career interest in the sciences, math, or engineering. No prior physics education is required; however this is a rigorous AP course for students who intend to pursue further honors and AP science electives. This course focuses on understanding the basics laws of mechanics and electricity: motion, forces, momentum, energy, torque, rotation. Skills of algebra, geometry, and trigonometry will be integrated freely and extensively in the course, both in the formulation of physical laws and in the solutions of problems. Students are expected to manipulate algebraic expressions involving multiple variables and should have an understanding of basic trigonometric functions. The student will be required to conduct experiments and compile data into lab reports. This course follows the AP curriculum and will prepare students for the AP Physics 1 exam.

Science – Additional Course Offerings

CH 361 Planet Earth

0.5 Credit Humanities and Elective Credit Grades: 10, 11

Planet Earth is an introductory survey course broken into four units: Lithosphere, Hydrosphere, Atmosphere and Biosphere. It is designed to cover the following topics about our planet: the atmosphere, the oceans, its ecosystems, human population dynamics, its agriculture, water resources, biodiversity decline, energy challenges, atmospheric pollution, and climate change.

CH 366A Human Anatomy and Physiology

0.5 Credit Science Elective Credit Grades: 11, 12

Prerequisites: Grade of 74% or higher in 305, 311, 320, 321

Lab Fee: \$10

This course is a study of both human anatomy and physiology with an integral laboratory component. This course is designed to prepare students who are considering entering the medical, nursing, or allied health fields and as such is of a rigorous content level. The course will offer a survey of important anatomical terms as well as an overview of the

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body's major organ systems. Students will have the opportunity to gain insight into various career options and the studies required for them

CH 368 Genetics

0.5 Credit Humanities and Elective Credit Grades: 11, 12

Prerequisites: 80% or higher in Biology and a Score of Proficient or Advanced on the Biology Keystone.
80% or higher in Chemistry

This course provides a study of genetics, most specifically human genetics. This course will specifically cover the biochemistry of DNA and chromosomes, human genetics, genetic diseases and disorders and genetic technologies. The course will include laboratory exercises, statistical analysis, and long-term projects.

CH 369 Zoology

0.5 Credit Humanities and Elective Credit Grades: 11, 12

Prerequisites: 80% or higher in Biology and a Score of Proficient or Advanced on the Biology Keystone.

This course provides an introductory study of all members of the animal kingdom. This course is designed to cover evolution as it applies to the animal kingdom and the taxonomy of the animal kingdom. The course will survey the animal kingdom from the simple invertebrates through mammals. The course will include lab work and cooperative projects.

CH 373A Meteorology

1.0 Credit Humanities and Elective Credit Grades: 10, 11, 12

This course is a study of the earth's atmosphere and weather-related phenomena. Major principles of meteorology will be addressed by long-term study of real time data sources from the Internet. The students will study the structure of the atmosphere, basic meteorological principles, weather maps and severe weather systems. Students will be expected to deliver "on-air" weather forecasts for the high school daily announcements. This is a highly challenging, science course on par with introductory Meteorology courses taught at the college level. The curriculum presupposes students have an understanding of the gas laws, fundamental physics principles and excellent math skills.

CH 374 Exploring the Cosmos

0.5 Credit Humanities and Elective Credit Grades: 10, 11, 12

Prerequisites: Algebra I

This course provides an introduction to the field of astronomy designed to provide an overview of the subject, including basic physical concepts involving planets, stars, galaxies, and cosmological distances. The course is designed to

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emphasize conceptual understanding and an appreciation for the discovery process. Besides project-based classroom work, students will complete an observational experience as well as a current event presentation to the class.

CH 379 Forensic Science

0.5 Credit Humanities and Elective Credit Grades: 10, 11, 12

Prerequisites: 80% or higher in 305 or 311

This course will cover updated techniques, practices and procedures used in forensic science. Students will participate in forensic analysis and the proper procedures for collection and preservation of evidence at crime scenes. Students will investigate new technologies used by forensic scientists. Discussions of probabilities role in interpreting the significance of scientifically evaluated evidence will be incorporated in this course. Students will study actual cases to see the role of forensic science in criminal investigations.

CH 380 The Great Diseases

0.5 Credit Humanities and Elective Credit Grades: 11, 12

Engaging students in the biomedical sciences while they are still in high school is a critical first step toward educating a scientifically literate citizenry. The Great Diseases course is a highly-engaging, inquiry-based curriculum that focuses on biomedical research in the context of four "great diseases" that challenge global health – infectious, neurological, metabolic and cancer. This course uses case-study and innovative, and life-relevant content to improve science engagement and health literacy . The Great Diseases curriculum, in partnership with the Tufts University School of Medicine, presents complex global health issues in ways that are both innovative and personally relevant to high school students. This course is designed for students who successfully completed biology and chemistry.

Science - Advanced Placement Course Offerings

CH 350BI Advanced Placement Biology

1.5 Credits Humanities and Elective Credit Grades: 11, 12

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

Grade of 87% or higher in 305 & 320 (H Biology & H Chemistry)

Grade of 94% or higher in 311 & 321 (CP Biology & CP Chemistry)

Grade of 84% to 93% in 311 or 321 requires teacher recommendations

This course is designed to be the equivalent of a first-year college course in Biology, and has been developed according to the new guidelines of the College Board. In-depth topics of study include molecular genetics and

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evolution, cell structure and energy transformation, population ecology, plants, and animals. The required lab component of the course includes investigations and technologies in areas such as recombinant DNA technology, aquatic productivity, botany and biochemistry, and comparative vertebrate dissections, will help students improve written and oral communication skills. This course follows the AP curriculum. This course will have a summer assignment.

CH 351CH	Advanced Placement Chemistry
1.5 Credits	Humanities and Elective Credit
	Grades: 10, 11, 12

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

Science

Grade of 94% 320 or 321

Grade of 84% to 93% 320 or 321 requires teacher recommendations

Math

Grade of 90% or higher in 430, 420 or 458

This course is designed to be the equivalent of a first-year college course. In AP Chemistry students will master fundamental principles of chemistry and develop competence in problem solving. The areas of study include a highly rigorous treatment of the structure of matter, the status of matter, chemical reactions, and descriptive chemistry. There is also a strong laboratory component for the course. This course will have a summer assignment.

CH 362	Advanced Placement Environmental Science
1.0 Credit	Humanities and Elective Credit
	Grades: 11, 12

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

Grade of 94% or higher in 305/306, 311, 320 or 321

Grade of 84-93% in 305, 306, 311, 320 or 321 requires teacher recommendation

This course will provide scientific principles, concepts, and methodologies required to understand the interrelationship of the natural world, to identify and analyze environmental problems, to evaluate risks associated with these problems and to examine alternative solutions. This class includes a strong lab component. Topics include energy flow, the biosphere, the human population, renewable and nonrenewable resources, environmental quality, and global change. This course follows the AP curriculum. This course will have a summer assignment.

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SHS Course # 370 Introduction to Astronomy

DCCC Course # ESS 102 Introduction to Astronomy

ESS 103 Introduction to Astronomy Laboratory (Optional)

1.0 Credit SHS Humanities, Technologies, & Arts Grades: 11, 12

4.0 Credit DCCC credit awarded for completion with a grade of 70% or higher.

Prerequisites: Satisfactory score on the Accuplacer exam or SAT, 75% average in Chemistry, and Algebra 2.

This college-level course is designed to introduce students to the science of astronomy, its history, and its importance as an influence on our view of humankind. Students will conduct astronomical observations using software, telescopes, and star charts to study objects in the night sky. Practical observational activities are designed to foster a conceptual understanding of how objects from great distances are studied from the earth. This is a rigorous textbook driven course intended for non-science majors to satisfy one of their college science credit requirement. This is a College Academic Learning Goal (CALG) designated course for Scientific Inquiry through DCCC.

This course is designed to introduce students to the science of astronomy, its history, and its importance as an influence on our view of humankind. The course is intended for non-science majors. Upon successful completion of this course, students should be able to: describe the night sky, trace the history of astronomy, describe the important properties of stars, describe the general characteristics of the solar system, discuss the discovery and nature of the Milky Way Galaxy and different types of galaxies, and discuss the possibility of life existing elsewhere in the universe.

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Mathematics

The Springfield High School Mathematics department offers programs that will provide students with mathematics courses appropriate to their future goals. From Algebra I to Advanced Placement (AP) Calculus, the Mathematics curriculum has offerings to meet each student's specific needs. All courses are designed to prepare students to use mathematics effectively in today's world. The critical skills of problem-solving, logical reasoning and decision-making are incorporated and developed in all courses. Recognizing the importance of technology in today's world, the department emphasizes the use of technology in all courses in order to enable students to develop superior skills in this area.

CH 431 Algebra II /College Preparatory

1.0 Credit

Mathematics Credit

Grades: 9, 10, 11, 12

Prerequisite: Successful completion of High School level Algebra I.

Algebra II is a demanding course designed to challenge the student through a more thorough investigation of many topics, including transformations of linear, quadratic, and polynomial functions, modeling with linear, quadratic, polynomial, exponential, and logarithmic functions, solving linear and non-linear systems, operations with polynomial functions, exploring radical functions, working with sequences, and investigating probability. Graphing calculator technology will accompany students throughout the course. Graphing calculator technology is a course requirement. All topics covered in this course will prepare students for successful completion of the Algebra I Keystone exam.

CH 420 Hn Geometry and Math Analysis

1.0 Credit

Mathematics credit

Grades: 10, 11

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

Grade of 84% or higher in 430

Grade of 94% or higher in 431(84% to 93% with teacher recommendation)

This course is recommended for those students who have completed Honors Algebra II or who have completed Algebra II in high school and are looking for a rigorous course. Students are expected to have a solid understanding of algebraic processes. This course provides a well-rounded mathematical experience that exposes students to a variety of rigorous topics across multiple disciplines. Among these, students will explore advanced quantitative concepts connected to algebraic and graphical representations, learn to describe the relationships between variables in linear, quadratic, and exponential models, and empower them to manipulate and analyze advanced mathematical expressions. A survey of data analysis follows including investigations of relationships between two variables, probability calculations, parameter estimation, measures of center, and scrutiny of data collection methods. The

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course culminates with a thorough investigation of Geometry - including, but not limited to properties of polygons, triangles, quadrilaterals, circles, perpendicular and parallel lines, bisectors, congruence transformations, similarity transformations, perimeters, areas, and volumes. Successful completion of the class will leave the students well prepared for advanced pre-calculus and/or statistics coursework.

^{CH} 421 Geometry and Math Analysis

1.0 Credit

Mathematics credit

Grades: 10, 11, 12

Prerequisite: Successful completion of 430 or 431. Students with <84% in 430 (H Alg II) will be recommended for 421

This course provides a well-rounded mathematical experience that exposes students to a variety of rigorous topics across multiple disciplines. Among these, students will explore advanced quantitative concepts connected to algebraic and graphical representations, learn to describe the relationships between variables in linear, quadratic, and exponential models, and empower them to manipulate and analyze advanced mathematical expressions. A survey of data analysis follows including investigations of relationships between two variables, probability calculations, parameter estimation, measures of center, and scrutiny of data collection methods. The course culminates with a thorough investigation of Geometry - including, but not limited to properties of polygons, triangles, quadrilaterals, circles, perpendicular and parallel lines, bisectors, congruence transformations, similarity transformations, perimeters, areas, and volumes. Successful completion of the class will leave the students well prepared for advanced pre-calculus and/or statistics coursework.

^{CH} 442 Hn Differential Calculus

1.0 Credit

Mathematics Credit

Grades: 11, 12

Prerequisite: Teacher recommendation and consultation with teacher and counselor:

Grade within the 84% to 93% in Honors Pre-Calculus

This course is recommended for those students who have completed Honors Pre-Calc who seek exposure to calculus in a non-AP environment. In this course students will continue their daily experience with graphing calculator technology. Class time will be split between an initial deep review of Pre-Calculus topics and an introduction to Differential Calculus concepts. Pre-Calculus review topics will include: polynomials, the Fundamental Theorem of Algebra, imaginary numbers, polar coordinates, unit circle trigonometry and trigonometric identities, and proofs with trigonometric identities. Calculus topics will include limits and continuity, derivatives, applications of derivatives, chain rule, and mean value theorem.

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CH 445 Hn Probability and Statistics/College Prep

1.0 credit

Mathematics Credit

Grades: 11, 12

Prerequisite: Successful completion of Algebra II.

This course is designed to meet the mathematical and research needs of students who plan to enter such fields as economics, business, education, psychology, sociology, biology and medicine, as well as science and mathematics. It is considered excellent preparation for usual college courses offered in these fields. The topics covered in the course include measurement scales, sampling techniques, study design, measures of center and dispersion, probability, estimation of confidence intervals, normal, binomial, geometric, and poisson distributions, sampling distributions, hypothesis testing, linear regression, chi-square tests of independence and goodness of fit, one-way analysis of variance, and tests of homogeneity of variance.

CH 458 Hn Pre-Calculus/ Honors

1.0 Credit

Mathematics Credit

Grades: 10, 11, 12

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

84% or higher in Honors Algebra II

94% or higher in CP Algebra II, AND

84% or higher in Honors Geometry

94% or higher in CP Geometry

NOTE: Students entering Honors Pre-Calculus from CP Geometry and/or CP Algebra II will be required to meet with the Honors Pre-Calculus teacher and complete summer work before enrolling in the class.

This course is recommended for mathematics students who have completed Honors Algebra II and Honors Geometry. In this course students will have daily experience with graphing calculator technology in the investigation of such topics as functions and models, trigonometric functions and their inverses, trigonometric identities, explicit and recursive formulas of sequences, Pascal's Triangle and the Binomial Theorem, ellipses and hyperbolas, and the logic of solving inequalities.

Due to the nature of this Honors course, in-depth discussions, proofs, and extension of certain topics and additional projects and/or assignments will be evident throughout the course. Upon successful completion of this course, students will be prepared to take AP Calculus.

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function. The derivative has multiple interpretations and applications including those that involve instantaneous rates of change. The Mean Value Theorem connects the behavior of a differentiable function over an interval to the behavior of the derivative of that function at a particular point on the interval.

Big Idea 3 Enduring understanding

Integrals and the Fundamental Theorem of Calculus - Anti-differentiation is the inverse process of differentiation. The definite integral of a function over an interval is the limit of a Riemann sum over that interval and can be calculated using a variety of strategies. The Fundamental Theorem of Calculus, which has two distinct formulations, connects differentiation and integration. The definite integral of a function over an interval is a mathematical tool with many interpretations and applications involving accumulation. Anti-differentiation is an underlying concept involved in solving separable differential equations. Solving separable differential involves determining a function or relation given its rate of change.

Students engaged in the college admission process should understand that prospective colleges want to see high school students enrolled in AP mathematics courses as evidence that the student is taking a challenging, rigorous course load.

^{CH} 461 Advanced Placement Calculus BC

1.0 Credit

Mathematics Credit

Grades: 11, 12

Prerequisite: Teacher recommendation along with recommended standards of academic performance as follows:

Grade of 94% or higher in 442 or 458

This rigorous advanced placement course follows the College Board Advanced Placement (AP) Curriculum Framework.

Big Idea 1 Enduring understanding

Limits - The concept of a limit can be used to understand the behavior of functions.

Big Idea 2 Enduring understanding

Derivatives - The derivative of a function is defined as the limit of a difference quotient and can be determined using a variety of strategies. A function's derivative, which itself is a function, can be used to understand the behavior of the function. The derivative has multiple interpretations and applications including those that involve instantaneous rates of change. The Mean Value Theorem connects the behavior of a differentiable function over an interval to the behavior of the derivative of that function at a particular point on the interval.

Big Idea 3 Enduring understanding

Integrals and the Fundamental Theorem of Calculus; Anti-differentiation is the inverse process of differentiation.

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World Language

The need for all learners to become competent in their ability to communicate with people of other countries is increasingly apparent due to instantaneous worldwide communication networks and an economy that is globally interconnected. Proficiency in languages other than one's own is a definite asset to the workplace, and for personal enrichment, especially when traveling. The World Language Department offers courses in American Sign Language, Latin, Spanish, and German. Students may elect to take Spanish through the Advanced Placement level; German is offered through level 4. With each additional year of study, students improve their linguistic fluency and grammatical accuracy, and continue to gain insight into the culture and literature of the language they are studying.

CH 522 Spanish II

1.0 Credit World Language Grades: 9, 10, 11

Prerequisite: Successful completion of 521

This course is intended for students who have successfully completed Spanish I. In order to continue the development of basic speaking, listening, reading, and writing skills, students will learn to use the vocabulary appropriate to their level in meaningful spoken and written sentences and brief conversations. Through the reading of a short novel and cultural readings from the textbook, discussions, and projects, students will be better able to understand some of the cultural aspects of the various Spanish-speaking peoples. On-line resources, videos, and an audio program are integral parts of this course.

CH 523 Spanish III

1.0 Credit World Language Grades: 10, 11, 12

Prerequisite: Successful completion of 522

The purpose of this course is to enable Spanish students to increase proficiency in conversation and writing. A continued development of fundamental vocabulary, listening comprehension, reading, and writing skills will be stressed. Students will read short stories and cultural selections in Spanish. Special projects will be assigned to promote speaking and writing proficiency. On-line resources and an audio program are integral parts of the course.

CH 525 Honors Spanish IV

1.0 Credit World Language Grades: 11, 12

Prerequisite: Completion of 523 and a grade of 84% or better are recommended

In this course students will work on continuing to develop advanced listening, reading, speaking, and writing skills, with an emphasis on both oral and written communication skills. Gaining fluency in the language through the use of cultural readings, situational vocabulary, and more advanced structures will continue to be the primary focus of the course.

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Students will create multi-media projects and write extensively. A variety of teaching techniques and materials will be used, on-line resources, audio recordings, and video resources will aid in furthering competency in listening comprehension, speaking and cultural awareness.

CH 533 German III

1.0 Credit World Language Grades: 10, 11, 12

Prerequisite: Successful completion of 532

It is strongly recommended that German II was completed with a minimum grade of 84% to be successful in this course.

Students will continue to develop their communicative proficiency through storytelling, role-playing, and interacting with the teacher and their classmates, as well as through use of a strongly integrated audio, video, and software program. Particular emphasis will be placed on practicing real-life situations one might encounter on a trip to a German speaking nation. Students will read traditional folk and fairy tales, as well as more contemporary stories. An additional video series will help students hone their listening and speaking skills, and gain an ever-growing awareness of the culture and customs of the people.

CH 534 German IV

1.0 Credit World Language Grades: 11, 12

Prerequisite: Successful completion of 533

It is strongly recommended that German III was completed with a minimum grade of 84% to be successful in this course.

CH 561 Latin

1.0 Credit World Language Grades: 9, 10, 11, 12

This course is intended to introduce the students to the structure and syntax of the Latin language, and to examine the parallels between Latin and English syntax, structure, and vocabulary. This course will enable students to translate and compose introductory Latin. Students will be guided through the reading of elementary passages, as well as in the preparation of projects. Latin is the foundational language of the sciences, medicine and law; students pursuing these fields after high school should consider Latin a prerequisite. This course will also benefit students taking the SAT and ACT.

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CH 572 American Sign Language II

1.0 Credit World Language Grades: 9, 10, 11

This course is designed as a continuation course for students who successfully completed ASL I and is designed to continue development of ASL expressive and receptive skills, grammar, vocabulary, fingerspelling, cultural awareness and related terminology. Videos and on-line resources will aid in furthering competency. Prerequisite: ASL I

Health and Physical Education

036 Grade 11 11th Grade Health & Wellness

0.5 credit Health/Physical Education Credit

Health and Physical Education is a 2 year requirement. The P.E. component is intended to improve the individual's level of physical fitness, increase enjoyment of physical activity, and encourage more extensive strategies in a variety of sports. Students will develop skills in lifetime, team, and cooperative sports which may include tennis, golf, volleyball, badminton, pickleball, physical conditioning, table tennis, ultimate games, handball, indoor soccer, base games, speedball, and floor hockey. All students are required to wear a regulation gym uniform and sneakers. To receive full credit, students must be prepared with a gym uniform, attend class regularly, and participate in class activities. The Health component is designed to help students make healthy choices throughout their lifetime. Age appropriate topics related to phases of human development will be covered concerning social, emotional and physical well-being of the individual.

042 Live Fit

0.5 Credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Students will be able to identify the major muscles of the body, design and implement a self-created individualized fitness program. All students will receive instruction on proper exercise technique, identification of lifting stations and names of exercises, spotting and safety protocols utilized when working out, fitness terminology, fitness concepts (overload, specificity, cross training, variation), warm up/cool down activities, phases of strength training (endurance, strength, power, sport specific), plyometric exercises, agilities, flexibility, rest and sports nutrition.

044 Advanced Studies in Competitive Sports

0.5 Credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Take your knowledge and skills of a variety of sports to the next level. This co-ed course is designed for those seeking a higher level of competition learning more about rules and regulations while at the same time maintaining fitness and skill levels. Students will learn the rules and regulations associated with school, PIAA and Youth AA related sports

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such as Baseball/Softball, Basketball, Soccer, and Lacrosse, and explore a variety of other sports such as Ultimate Frisbee, Frisbee Golf, Flag Football, Tennis, Badminton, Volleyball, Pickleball, etc. Interested students will have the opportunity to independently explore certifications to officiate Youth AA and PIAA sporting events while refereeing their peers on the field of competition.

Art

801 Studio Art

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11

Lab Fee: \$10

Studio Art provides the opportunity for beginning art students as well as more advanced students to experiment with concepts, methods, and materials in the following areas: design, drawing, print-making, painting and 3-D design. By studying the contributions of artists past and present and participating in studio work and critiques, students will gain a more critical appreciation of the value of art. Students will use the Internet as a research tool for art historical information. Students will be required to enter at least one piece of their artwork in the Celebration of the Arts exhibit. Students are required to supply an artist's sketchbook.

803 Drawing and Design

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Lab Fee: \$10

Focusing on building drawing and observation skills, exploring personal expression and creative problem-solving; this course allows you to grow your skills as an artist. Because we work with students who have varying skill levels/experience, the goal of this course is to take you where you are and grow your individual skills over the semester - even if you have no experience, you can expect success. You will be challenged to stretch your preconceived ideas of what you can do as an artist and to explore the fine art world of drawing & design. Using historical and contemporary artists as inspiration, you will create a series of drawings and paintings that hone your competence with a variety of drawing & design tools and techniques. By participating in self, peer and group critiques and learning to give actionable feedback, you will develop your ability to look at your own artwork in a deeper manner and allow you to write and speak clearly and thoughtfully about others' art. Art school representatives visit throughout the year to discuss career options and college planning. Open Studio sessions are available after school twice a week for advanced instruction opportunities. All students participate in the Celebration of the Arts exhibit. Students are required to supply an artist's sketchbook for the class.

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805 Painting and Drawing

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11

Lab Fee: \$10

Painting and Drawing students learn how to grow their skills as fine artists; honing drawing techniques in pencil, charcoal, pastel, and pen and ink as well as growing their observational skills. Students regularly participate in self, peer, and group critiques. The course provides opportunities for exploring career opportunities in art; familiarization with significant periods in art history; opportunities to exhibit work in local, regional and national competitions; and the opportunity to work from life and imagination. By learning to reach beyond imagined limitations, students explore, develop their craft and grow their observation, painting and drawing skills. Through their artwork, students responsibly utilize online reference materials; using the Internet as a tool for art historical research and familiarizing themselves with contemporary artists. Students are required to supply an artist's sketchbook and are required to enter at least one piece of their artwork in the Celebration of the Arts exhibit.

811 Functional Ceramics

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11

Lab Fee: \$20

Ever look around your home and notice all the functional objects made of clay? Plates, cups, mugs, pitchers, platters, vases, salt and pepper shakers, bowls... Ever wish you could learn to make pottery on the potter's wheel? Here's your chance to create some amazingly beautiful and functional pottery for your own use. Is it easy? Not always. Will you get dirty? Yes. Will it be worth all the effort and the dirt? Absolutely! You'll have the opportunity to create original designs for your own functional pottery, while learning about contemporary ceramic artists and cultural artistic heritage. In this professional ceramic studio you will learn a variety of hand building techniques and the potter's wheel in a supportive community atmosphere. Digital portfolios are used to document your progress, processes and problem-solving strategies. All students are required to enter at least one piece in the Celebration of the Arts exhibit.

813 Sculptural Ceramics

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11

Lab Fee: \$20

At the core of this course are the basic questions of any artist: How does your sculpture reflect who you are, what you think and what you feel? As a sculptor, how do I communicate meaning? You will have the unique opportunity to explore the world of sculptural ceramics – by studying contemporary ceramic sculptors such as Victor Spinski, Beth Syliva Hyman, John Brickels and Cristina Cordova. This project-based course links studio work and critiques to the exciting world of contemporary ceramic artists and their historic predecessors. Students will focus on meaning and

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symbolism in art as it relates to their artwork and to the artwork of professional artists; continually asking themselves how their in-class learning connects with their lives and to the larger world of art. Students will work in a professional ceramic studio and actively participate in this unique artistic community. The Internet is used as a research tool. Using a digital portfolio, students will document their progress and problem-solving strategies. Students are required to enter at least one piece in the Celebration of the Arts exhibit.

815 Tile Making: Impression and Expression

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11

Lab Fee: \$20

A unique combination of drawing and ceramics, the tile artwork at Celebration of the Arts never fails to delight and inspire viewers. Students learn several techniques for creating tiles, including stamping, mold making, picture mosaics and traditional mosaics. All the phases of tile making, including creating an original design, working with clay, glazing, gluing and grouting, will be experienced firsthand. This exciting course focuses on personal expression as it is linked to contemporary art and artistic and cultural heritage – specifically Pennsylvania tile artists - and on participation in studio work and critiques. Students will work in a professional ceramic studio and actively participate in this unique artistic community. The Internet is used as a research tool. Using a digital portfolio, students will document their progress and problem-solving strategies. Students are required to enter at least one piece in the Celebration of the Arts exhibit.

817 Primitive Ceramics: Earth, Air, Fire and Water

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Lab Fee: \$20

We go seriously old school in Primitive Ceramics. By experimenting with primitive techniques including: creating your own clay bodies (meaning we will walk to the creek and dig up and process our own clay), burnishing, smoke-firing, traditional and horsehair raku, and alternative finishes (we often use fire as a tool in this course). The results are often unpredictable and always beautiful. Focusing on independent research and design; students meet indigenous people's both historic and contemporary and their hand-constructed ceramic techniques. Students will work in a professional ceramic studio and actively participate in this unique artistic community. The Internet is used as a research tool. Using a digital portfolio, students will document their progress and problem-solving strategies. Students are required to enter at least one piece in the Celebration of the Arts exhibit.

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819

Sculpture

0.5 credit

Humanities, Technologies, & Arts

Grades: 10, 11, 12

Lab Fee: \$20

How often in your lifetime are you going to get the opportunity to carve stone?! Here's your chance to take on an unusual challenge. This rigorous and exciting course provides the opportunity for students to explore the fine art of sculpture. Areas of study include sculptural aesthetics, history, contemporary art, criticism and production. Students will explore major principles, concepts, techniques, materials, and tools of the sculptor. While the main project in this course is a stone carving using alabaster or soapstone, we also use a variety of other materials such as plaster, Pariscraft, found objects, clay, paper and wood on smaller projects. In this project-based course, students do independent online research and create original designs for their sculptures. Students will work in a professional sculpture studio and actively participate in this unique artistic community. Using a digital portfolio, students will document their progress and problem-solving strategies. Students are required to enter at least one piece in the Celebration of the Arts exhibit. **There is an \$18 lab fee for this course.

820

Digital Art & Animation

0.5 credit

Humanities, Technologies, & Arts

Grades: 9, 10, 11, 12

Lab Fee: \$15

Drawing technology and digital art have changed drastically to fit the speed of the 21st century artist and this course will give students the opportunity and training needed to push their creative potential without limitations. Digital Sketchbook's curriculum allows students the opportunity to create dynamic, thought-provoking images using current professional tools such as the Wacom's Mobile Studio Pro pen and touch interface, Autodesk's Sketchbook Pro "user friendly" drawing and painting software, and Sketchup's 3D modeling capabilities. Tools that will allow art to be created directly on a computer screen with speed and precision. Wacom and Sketchbook pro are considered the creative industry's standard digital art software and hardware combination that is used by creative professionals around the world in 2D/3D animation studios, visual effects departments, comics, and photography. Companies such as Pixar, Disney, Ford, Blue Sky, Dreamworks, BMW, and countless other industries utilize these tools in some capacity. Students will draw, compose images correctly, explore animation techniques, manipulate perspective tools, create in a 3D space, develop narrative drawings such as comics and children's book illustrations, and modify their own drawings instantly just as the leading professionals.

- Time management of deadlines, utilizing on screen note taking with Microsoft OneNote, creative problem solving, managing a digital workflow are also a dedicated part of the curriculum.

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824 Special Effects Photography

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Lab Fee: \$25

Special Effects allows students to experiment with specialized photography techniques not taught in the Digital or Portrait Photography courses. Techniques such as; Bokeh, Double Exposure, Long Exposure, Composite, and High Dynamic Range photography. Students will have the opportunity to use Canon DSLR cameras with a variety of detachable lens at their disposal. Along with photographing with professional grade equipment students will work directly on screen with Wacom Mobile Studio Pro 13 tablet computers while editing in the industry standard digital imagery editing suites Adobe Photoshop and Lightroom.

- Time management of deadlines, utilizing on screen note taking with Microsoft OneNote, creative problem solving, managing a digital workflow are also a dedicated part of the curriculum.
- Students may sign out equipment from the photography department while enrolled in the course.
- Please visit Mr. Mann's class page for information and examples of photography projects.
- Similar to all art courses student work will be proudly displayed at Celebration of the Arts.
- This course utilizes Google Classroom and other Google applications

826 Portrait Photography

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Lab Fee:: \$25

Portrait photography is a course designed to teach students how to take photographs of people. Students will photograph their classmates, friends, family, and themselves to practice basic techniques involving depth of field, flash photography, managing a group, candid portraits, posing, working with telephoto lens to capture athletes in live athletic events, and learn how to photograph pets for extra credit. Utilize the most basic concepts of photography even the more advanced students will take on a series of challenges that utilize their creativity and prior experiences. Students will have the opportunity to use Canon DSLR cameras with a variety of detachable lens and pivot external flashes at their disposal. Along with photographing with professional grade equipment students will work directly on screen with Wacom Mobile Studio Pro 13 tablet computers while editing in the industry standard digital imagery editing suites Adobe Photoshop and Lightroom.

- Time management of deadlines, utilizing on screen note taking with Microsoft OneNote, creative problem solving, managing a digital workflow are also a dedicated part of the curriculum.
- Students may sign out equipment from the photography department while enrolled in the course.
- Please visit Mr. Mann's class page for information and examples of photography projects.
- Similar to all art courses student work will be proudly displayed at Celebration of the Arts.

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- This course utilizes Google Classroom and other Google application

827 Digital Photography

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11

Lab Fee: \$25

Digital Photography is a course dedicated to the ever-changing technological advances in the world of photography and design. Students will have the opportunity to learn the benefits of digital imagery, how to manipulate their cell phone's camera, and why photography has become so popular. Macro, Still Life, Panoramic, Architectural, and Lowlight photographic techniques are the foundation of digital photography. They provide anyone with an excellent intro experience to camera and tripod techniques while providing knowledge for future course in the SHS photography program. Students will have the opportunity to use Canon DSLR cameras with a variety of detachable lens at their disposal. Along with photographing with professional grade equipment students will work directly on screen with Wacom Mobile Studio Pro 13 tablet computers while editing in the industry standard digital imagery editing suites Adobe Photoshop and Lightroom.

- Time management of deadlines, utilizing on screen note taking with Microsoft OneNote, creative problem solving, managing a digital workflow are also a dedicated part of the curriculum.
- Students may sign out equipment from the photography department while enrolled in the course.
- Please visit Mr. Mann's class page for information and examples of photography projects.
- Similar to all art courses student work will be proudly displayed at Celebration of the Arts.
- This course utilizes Google Classroom and other Google applications

Honors Level Courses

CHE 807 Honors Art

1.0 credit Humanities, Technologies, & Art Grades: 11, 12

Prerequisite: Successful completion of two of the following courses: 801, 803, or 805

*****Students express interest through HAC Course Request with teacher review and final approval.**

Considering a career in the arts? This class is for you. You will experience a variety of formal, technical, and expressive means available to the professional artist. Exploring career opportunities in art, you will have the opportunity to talk with art school representatives. You will highly refine your observation skills, learn to work independently as you research art historical movements and artists - and become familiar with contemporary artists. Hanging your work at Celebration of the Arts is the culmination of a year of intense work. Open Studio sessions are available for advanced instruction opportunities. Students planning to take Advanced Placement Art Senior year will use this class to begin developing the Breadth sections of their Advanced Placement Portfolio.

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**There is no Lab Fee for this course; students are expected to purchase the following items for the course: A large portfolio (at least 18" X 24"), an 18" X 24" drawing pad and a small sketchbook (9" x 12") are used for the purpose of required independent homework projects.

CH^E 829H Honors Photography – *Photography, Design and Graphics*

1.0 credit Humanities, Technologies, & Arts Grades: 11, 12

Teacher Recommendation Only

Prerequisite: Successful completion of the following courses: 829, 824, 826, and 827

Lab Fee: \$65

This course is for the highly motivated photography, animation, digital illustration, and/or graphic design student who wants to perform at a college level while still in high school. This course requires independent work, goal setting, planning skills, constructive evaluation, and ongoing communication with the 2D design instructor. The 15 images created will fill the College Board Advanced Placement 2D Design Portfolio requirements while building a professional portfolio for college reviews and possible internship opportunities. The portfolio will be based on their chosen medium and personal concept. During the creation of the portfolio students will develop increased skills in various artistic methods; including comprehensive technical knowledge of their media, professional use of Adobe software, printing output methods, creative problem solving, thematic design, personal evaluation, and the creation of a "Visual Idea." The course culminates with a presentation of the student's portfolio on a visual installation called a "Wall" at Celebration of the Arts.

This course provides the opportunity for students to earn honors weight by fulfilling additional requirements outside of the school day. See director for more information.

- Students must have their own photography equipment, unless focus is non-photography driven.
- Please visit Mr. Mann's class page for information and examples of photography projects.
- Students that complete the work in this course receive a "wall" at Celebration of the Arts.
- \$90 dollar Advance Placement testing fee

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Advanced Placement Courses

CHE 829 Advanced Placement 2D Design Portfolio: Photography & Design

1.0 credit Humanities, Technologies, & Arts Grades: 11, 12

Teacher Recommendation Only

Prerequisite: Successful completion of the following courses: 829, 824, 826, and 827

Lab Fee: \$65

This course is for the highly motivated 2D design (photography, animation, character design, & graphic artist) student who wants to perform at a college level while still in high school. This will require independent work, goal setting, planning skills, and ongoing communication with the teacher. The 29 images created will fill the required "Quality," "Concentration," and "Breadth" sections of the College Board Advanced Placement 2D Design Portfolio. Students will strengthen their design and photographic skills, including comprehensive technical knowledge of their chosen 2D media, professional use of software such as Adobe Photoshop and Lightroom, Autodesk Sketchbook Pro, Illustrator, and/or Sketch-up. They will also explore printing output options, as well as solving creative problems via design principles. Much of the thematic design of their portfolio will be self-assigned, based on their proposed "Visual Idea". The course culminates with presentation of the student's portfolio on a visual installation called a "Wall" at Celebration of the Arts.

This course provides the opportunity for students to earn honors weight by fulfilling additional requirements outside of the school day. See director for more information.

- Students must have their own photography equipment, unless focus is non-photography driven.
- Please visit Mr. Mann's class page for information and examples of photography projects.
- Students that complete the work in this course receive a "wall" at Celebration of the Arts.
- \$90 dollar Advance Placement testing fee

CHE 831 Advanced Placement Studio Art: Drawing

1.0 credit Humanities, Technologies, & Arts Grades: 11, 12

Teacher Recommendation Only

Prerequisite: Successful completion of two of the following courses (801 803, 805) and 807

Are you a highly motivated student? Are you headed to art school and a career in the arts? This course allows you to perform at the college level while still in high school. AP students work all year and in-depth exploring a personal artistic theme. These works will represent the required Quality and Concentration sections in the Advanced Placement Portfolio submitted in early May. Through the intense study of the human figure, you will strengthen your drawing skills. Various media will be explored in black & white and color based upon your thematic series. Work ranges from

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photo-realism to imaginative compositions; small oilstick paintings to larger-than-life drawings. You will practice and develop the ability to document and explain your thinking, creative processes, research arc, and your developing understandings of how all of these areas work together towards your own personal and artistic growth. This practice will further develop your artistic voice and your ability to explain what has influenced and changed it. In addition to learning how to appreciate and evaluate your own work and that of others, all AP students will be encouraged to stretch and explore their own work and share it with an audience through mandatory weekly Peer Critical Review sessions. All course participants will need to submit an AP portfolio in May and exhibit their work in Celebration of the Arts. Open Studio sessions are available for advanced instruction opportunities.

**There is no Lab Fee for this course. Students will need to purchase the following items for the course: a large portfolio (at least 18" x 24"), an 18" X 24" sketchbook, a small sketchbook used for the purpose of required independent homework projects and any materials needed outside of what is available in the studio to complete their portfolio pieces.

Business and Administrative Technology Education

The Business and Administrative Technology Department at Springfield High School is designed to provide students the option of becoming involved in specific aspects of the business and technology world that parallels their personal and career interests. Students have the opportunity to develop the knowledge and skills needed to succeed in business and to function more efficiently in the technologically driven 21st Century. The program develops lifelong learning skills that foster flexible career paths and confidence in adapting to a workplace that demands constant retooling.

630 Introduction to Web Design

0.5 credit

Humanities, Technologies, & Arts Grade: 9, 10, 11

This course assumes no previous experience in web design. Students learn to identify the components and characteristics of high-quality sites and how to create them. The class covers file structure and organization, basic graphic editing as well as color and design strategies. We also explore some creative and fun features including Flash animation, sound and interaction. The class culminates with the creation of an all-inclusive web site displaying all their work in this class.

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CHE 631 Web Design II

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Prerequisite: Successful completion of 630

Web Design 2 takes students to the next level in web design. Students have the opportunity to explore their different areas of interest and develop skills in those areas. While the first few classes are review and refresher exercises, we then move onto lessons on problem solving, team building and design. Later lessons are specific to the group's interests. Some topics you might want to explore include: editing HTML5 code, Dreamweaver, CSS, Flash websites, Flash animation, Flash Games and debugging JavaScripts.

650 Elements of Graphic Design

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11

This course explores graphic communication through the understanding of the elements and principles of design as well as the design process from idea development through the final execution of a document. Professionals use the concepts explored in this course in the following commercial based disciplines: advertising, graphic design, web design, illustration, broadcast design, photography and game design and many others. Software training includes use of Adobe Illustrator and Photoshop.

651 Applications of Graphic Design

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Prerequisite: Teacher recommendation or approval based on prior course experience. Interested students should first inform their guidance counselor.

This course effectively pairs the basics of graphic design with real world projects and applications. Through a project-based production approach, students learn to research and analyze all components of the design process and set the stage for independent design projects. Students are exposed to more advanced digital techniques using Adobe Illustrator and Photoshop including but not limited to: image manipulation through masking and layers, multiple selection methods, saving and exporting, scanning, retouching, pen tool, and cutting-edge techniques used in industry today.

945 Fundamentals of Computer Programming

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11

Prerequisite: Eligible students will have demonstrated standards of academic performance as follows:
≥94% in CP Algebra II
≥84% in Hn Algebra II

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This course is designed to build foundational skills in programming to prepare students for AP Computer Science A. Students will learn to design and implement computer programs that solve relevant, real-world problems. This course will emphasize problem-solving and the development of algorithms. The use of hands-on experiences and examples for students to apply programming tools and solve complex problems will be utilized as students learn Java programming language.

951 Emerging Technologies/Tech Support

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11, 12

Prerequisite: Students will indicate interest through HAC and teacher will grant final approval.

This class is for those individuals who have a serious interest in computers and technology and are considering a career in IT. This class will focus on troubleshooting hardware/software issues throughout the building while working in conjunction with the High School and District Tech Departments. When students are not troubleshooting or assisting others in the building, they will have an opportunity to complete self-guided certification programs (Google, Cisco, Microsoft, etc.).

CHE 956 Marketing

0.5 credit Humanities, Technologies, & Arts Grades: 11, 12

This course presents marketing as a set of skills and knowledge combined with economics, finance, and career planning to create strategic plans. Students learn the foundations and functions needed to successfully market goods, services, and ideas to consumers. Professional development, customer service, and technology are presented as keys to students' success. While students study business, economics, selling, human relations, communications, distribution, promotion, product planning, and pricing, they also see marketing as a career choice. Marketing is recommended for students considering a university major in Business Administration, Marketing and Communications.

CHE 958A Money Management – *Meets District Finance Credit Requirement*

0.5 credit Humanities, Technologies, & Arts Grades: 11, 12

Students will discover how career choices affect future income. They will explore income sources as well as purchasing power. They will manage money by using a checking account and keeping good financial records. Students will create a financial plan and review the steps of an effective buying plan. They will look at sources, benefits, and costs of credit. At the completion of the course, students should be able to make wise financial choices.

This course fulfills the Personal Finance & Money Management credit requirement.

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955A Introduction to Business

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11

This course introduces students to the world of business: how they are planned, organized, created, and make or lose money in our economic system. Students learn about the different fields of study within business and the career opportunities that exist in each field. In addition to the textbook, students discuss real business issues and current events directly related to business the economy and consumers.

CHE 963 Accounting I

1.0 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Students will learn to maintain financial records using basic accounting procedures. Included is instruction in the full accounting cycle of a sole proprietorship, as well as a corporation, with the significance of accounting on management decisions. Students will explore accounting as a career and adapt accounting procedures to personal finances. Accounting is recommended for those who are considering a university major in business or accounting.

This course fulfills the Personal Finance & Money Management credit requirement.

CHE 964 Honors Accounting II

0.5 credit Humanities, Technologies, & Arts Grades: 11, 12

Prerequisite: Successful completion of 963

This course offers proficiency in basic and complex accounting procedures for corporations. Principles of a merchandising business and corporation structures will be approached realistically. This course is designed for students who hope to own a business or follow a career in accounting.

CHE 965 Honors Business II

0.5 credit Humanities, Technologies, & Arts Grades: 11, 12

This course continues our exploration of business, different fields of study within business and careers possible for young people with an understanding of business. In addition to the textbook, students discuss real business issues and current events directly related to business the economy and consumers. To add a little more fun to the class, students buy and sell stocks in the online Simulated Stock Market game where the winners walk away with small prizes and big bragging rights.

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CHE 983

Advanced Placement Computer Science Principles (CSP)

1.0 credit

Humanities, Technologies & Arts Grades: 10, 11, 12

Prerequisite: Eligible students will have demonstrated standards of academic performance as follows:

≥84% in CP Algebra II

≥74% in Hn Algebra II

Computer Science Principles is a course that exposes students to the core concepts of computer science. Students will gain a broad base of knowledge and skill from a framework encompassing the big ideas of computing, creativity, abstraction, data and information, algorithms, programming, the internet, and global impact. Students also learn computer programming with an emphasis on problem-solving and logic development using computational tools in data analysis. Most projects are open-ended, and students will be working individually and collaboratively in pairs. Students create projects requiring written reflection reports and narration of design specification.

Communications and TV, Film and Video Production

760

Introduction to Mass Media

0.5 credit

Humanities, Technologies, & Arts Grades: 9, 10, 11

From the oldest cave paintings made thousands of years ago to the technologically advanced Information Age in which we currently reside, we see evidence of humans working to develop new, more sophisticated, and broader means of communication. This course will provide students with an overview of the wide range of mass communications methods used in modern society. They will examine the history and evolution of mass communication as a whole. In addition, the students will explore the current and future career paths in the field of mass communication. Students in this course will research the various forms and functions of mass communication, sample and critique content from each of those formats, discuss and evaluate the role and impact media has on our society, and will map various career paths in the field of mass communication. Students will learn how to become more discerning consumers of media, practice safe and responsible digital citizenship, and have a better understanding of how to produce and distribute their own content. This class would be beneficial for students who have a general interest in media and communications, but want to gain a deeper understanding of the various opportunities in the field so they can make more informed decisions regarding their future academic and career plans.

770

Television Production: Basic Video Production

0.5 credit

Humanities, Technologies, & Arts Grades: 10, 11

This course is the recommended entry-level video production course. It will cover the fundamentals of video production and will work in both the studio/multi-camera format, as well as the film-style/single-camera format. Students will

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develop the skills needed to function in all aspects of the Production Cycle, and will learn how to produce live multi-camera segments, as well as how to use Adobe Premiere Pro for non-linear video editing. Over the course of the semester, students will work in large and small groups to produce a series of videos. As their skills develop, some projects may be produced for broadcast on our morning announcement programs or SETV.

771 Television Production: Film-Style Production

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Much of today's video production equipment is portable; therefore, many productions are shot on location. The course teaches students to create videos that are shot on location and edited in the studio. Emphasis is placed on the writing of treatments, scripts, and storyboards, single camera shooting, and non-linear editing techniques. Students will work in small teams and produce a series of videos including (but not limited to) a stop-motion animation, a Public Service Announcement, a music video, and a short film. Students who have taken this class will have the opportunity to participate in the recording and broadcast of special televised events such as COTA and the Dance Marathon.

***** Students will need to provide their own 16GB or 32GB card. More details will be provided through the course syllabus.**

773 Broadcast Journalism

1.0 credit Humanities, Technologies, & Arts Grade: 11

Students may request this course in HAC. However, it does require:

Successful completion of 770 or 771 along with teacher recommendation.

In Broadcast Journalism, students will be taught the skills of story selection, news writing and delivery, along with basic and advanced TV Production skills. The class will produce both daily announcements (The Cougar Pause), and a monthly thematic news magazine program (The Growl) for the high school delivered via the web. In addition, students will produce a series of news reports on various subjects that will be shown in the high school, and on SETv. Students in this class will be assigned a specific job or leadership role based on their abilities and experience and will treat their time in the class like a workday in a television news studio. Students who have taken this class will have the opportunity to participate in the recording and broadcast of special televised events such as COTA and the Dance Marathon.

***** Students will need to provide their own 16GB or 32GB card. More details will be provided through the course syllabus.**

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776 Documentary Video Production

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Prerequisite: **Successful completion of 770 or 771 or 773**

Documentary Video Production is an advanced-level video production course that allows students to work individually on three documentary videos of increasing length. The choice of subject matter is completely the prerogative of the student. Students will work through the entire process of developing an idea, doing research, collecting interviews, storyboarding, writing, shooting, and editing. All completed videos will be considered for broadcast on SETv, and eligible for available contests. This is a perfect class for a creative, tech-savvy student who wants the opportunity to work individually, and produce projects that could be used as a portfolio piece or demo reel in the future.

***** Students will need to provide their own 16GB or 32GB card. More details will be provided through the course syllabus.**

150 News Media and Journalism (Course located in Language Arts Department course listing)

1.0 credit Humanities, Technologies, and Arts Grades: 10, 11, 12

In News Media and Journalism, students will focus on the gathering and dissemination of newsworthy facts and explore multiple modes of news publications like traditional newspapers, online news publications, podcasts and other modern news platforms. Students will study the ethics of student journalism and engage in the interview process, feature and editorial writing, audio and digital reporting, photography, editing, and publishing. A focal point of the course will center on the news gathering process and explore the biases of current news media. This analytical approach will encourage students to craft their views and share events in a responsible and meaningful manner with their school community. All students will submit quarterly articles and help with the development of ideas and topics for the editorial staff of the SPRI HIAN. All students interested in an introduction to news media and journalism should consider taking this course.

839 Presenting in a Tech Driven World

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Advancements and innovations in technology and software applications are being integrated into presentations and public speaking to provide for a more robust and interactive experience for the audience and presenter alike. This course will introduce students to a variety of presentation platforms to complement the public speaking skills students will develop as they learn the language of communication, both verbal and nonverbal, when presenting to an audience. Students in this course will participate in a variety of speaking/presentation situations including informative, persuasive, and narrative while integrating technology to enhance the effectiveness of the presentation. Students will also evaluate presentations, express individual opinions, and work on presentation projects with peers.

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Presentation technology such as: Adobe InDesign, Adobe Spark, AniMaker, Cute Cut, Cyberlink Power Director, iMovie, PowToons, and Prezi will be explored.

840 Acting Workshop

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11

Students will develop self-confidence in this course, both as performers and as individuals. They will receive a general orientation to the Stanislavski "Method" of acting. Course activities include extensive work in improvisation, characterization, stage movement, monologues, and scene work. Class and teacher viewing of performances and class participation are included in the evaluation of students.

843 Behind the Curtain: An Introduction to Technical Theater

0.5 credit Humanities, Technologies, & Arts Grades: 09, 10, 11, 12

In this course, students will explore the backstage world of theater utilizing the technical equipment found in the high school theater. Students will participate in units of study focused on theatrical spaces, scenic design, beginning set construction, lighting design, costume design, sound design, prop design, and stage management. Assessment will consist of a combination of hands-on projects, design simulations, and traditional written assessments. No prior technical experience necessary.

Family and Consumer Sciences

601 Fundamentals of Foods and Nutrition

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11

Lab Fee: \$25

This course introduces students to the art and science of cooking. Students will learn how to prepare foods focusing on the areas of dairy, vegetable, meats and grains as well as foods from many different cultures. Students will also be participating in the original recipe competition at Celebration of the Arts. The final exam will help focus on how current food choices will affect their health today as well as in the future. Students have the opportunity to explore careers in the foods and nutrition industry.

602 Focus on Foods and Nutrition

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Lab Fee: \$25

In this course, students use up-to-date technologies such as the food processor, microwave and convection oven to prepare both familiar and new dishes. Culinary principles will be applied to foods including eggs, chicken and Fruit.

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620 Child Development

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11

This course deals with the development of a child and the issues s/he may face as they grow up. The influence of the family and the impact of the way basic needs are met early in life are examined. Differences between boys and girls will be observed and analyzed as well as each facet of how a child development. Developmental milestones (skills/abilities that should be achieved by a certain age) will be identified and discussed. Special relevant issues such as pregnancy, labor and childbirth, the impact of technology and the building of good self-esteem will be examined. This is a valuable course for those interested in career areas such as early childhood/elementary or secondary education, special education, day care supervision, social work, child psychology, pediatric medicine and parenting.

625 Methods of Teaching: Elementary and Secondary Education

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Prerequisite: Successful completion of Child Development is beneficial but not required.

This course is designed for students who are considering a career in teaching or early childhood education, or simply want to learn more about the field of education. The course content will explore various aspects of teaching including lesson design elements, an overview of learning style differences and learning disabilities, learning differences between age groups and grade levels, establishing a positive learning environment, and instructional strategies including the use of technology. Students will have the opportunity to design and create hands-on projects and lessons to teach specific concepts. The course will cover Pre-K through Grade 12 teaching methods with the main focus on elementary age children to equip students with various skill sets to serve as teaching assistants in elementary classrooms or Pre-K programs.

^{CH} 640 Personal Finance

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

This course fulfills the Personal Finance or Money Management requirement.

Life on your own will be the focus of this course. Managing your own checkbook, establishing good credit, determining costs for major life events (wedding, buying a house, having a baby) will all be examined as well as learning to handle paying monthly bills while balancing personal and family life. The psychology of relationships and higher level communication skills are the focus while integrating all parts of financial matters during the life cycle. Practical, hands-on methods are applied for successful learning. Research strategies are developed and curriculum directed projects are worked on in cooperative groups.

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Industrial Technologies

701A Industrial Materials I

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11

Lab Fee: \$35

The Industrial Materials program is described as “Creativity through Problem Solving.” Students have every opportunity to design and create amazing pieces of decorative and functional art from beautiful woods. Students will develop an appreciation for fine quality and attention to detail through their creations. Industrial Materials I is just the first of four levels that students can experience in the program – many families have a house full of beautiful furniture built entirely by hand from these courses. Take this first-level course to gain the expertise and hopefully have your creations published nationally as many students have already achieved. Design examples include detailed jewelry boxes, clocks, small pieces of furniture, or anything that your mind can create! Even if you have absolutely no experience, you should expect success and be prepared to take home pieces you will be extremely proud to display. Evaluation is based on safe lab procedures and work habits. Emphasis is placed on meeting individual needs, working safely, and preparing for “**Celebration of the Arts**” to showcase student work. Please view over 100 student creations at www.ssdcougars.org/webpage/gtrout and be amazed!

702 Industrial Materials II

1.0 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Prerequisite: Successful completion of 701A

In Industrial Materials II, students will refine their problem-solving and creative skills practiced in Industrial Materials I and work on advanced techniques such as creating intricate moldings, carvings, or any design their minds can create as part of their artistic masterpiece. Students have virtually no limitations in their designs and have the opportunity to receive advanced instruction through open lab work sessions after school and in the evenings. Our students have designed nearly every piece of furniture imaginable over the past 28 years and have been featured in 33 national and international publications, as well as displayed at the Philadelphia Furniture Show. Projects include complete bedroom and dining room sets, pool tables, sideboards, armoires, pianos, harpsichords, Victorian desks, and even a Model –T truck. Course activities will require students to design and create a major piece of furniture...or more! Evaluation is based on lab procedures, safe work habits, and preparation for the “**Celebration of the Arts**” to showcase student work to the public. Please view over 100 student creations at www.ssdcougars.org/webpages/gtrout and be amazed! These advanced students are responsible for their chosen materials.

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CHE 703 Honors Industrial Materials III

1.0 credit Humanities, Technologies, & Arts Grades: 11, 12

Prerequisite: Successful completion of 702 and teacher approval

Industrial Materials III is designed to provide the opportunity for students who truly wish to make the most incredible artistic creations possible! View www.ssdcougars.org/webpages/gtrout highly motivated students may exceed 1.0 credits per year if their schedule permits. These advanced students are responsible for their chosen materials.

CHE 704 Honors Industrial Materials IV

1.0 credit Humanities, Technologies, & Arts Grades: 11, 12

This course is available only by teacher recommendation.

700 Principles of Engineering and Construction – Process and Design

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11, 12

Are you interested in the fields of Engineering, Architecture or Robotics but it seems too intimidating? This course is designed to introduce and expose students to the possibilities of each of these STEM related fields. The Engineering Design Process will help guide the project-based learning in our fully functioning design lab, giving students hands-on experience in each field. Creativity in design will be emphasized and students will be exposed to industry standard equipment and software like 3D printers, laser engraver, AutoCAD, Revit, Google SketchUp, 3D Modeling and Robotics. This course is the foundation for exploring and developing your technical skills.

CHE 710 Architectural Design

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11, 12

In this course, students will focus on Architectural and Engineering Design concepts. Students will 3D model their "Dream House" using Revit, AutoCAD and Google SketchUp to bring theory to reality, as students construct their ¼ inch scale balsa wood model. Industry standard software and equipment will allow students to build a home from the ground up. From the floor plan configurations, traffic flow patterns, electrical plans, all the way to elevation drawings, landscape design, site plans and renderings. Technical sketches will allow practice in measurement and accuracy of their drawings. Models and Technical Sketches will be put on display and judged at the annual Celebration of the Arts.

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715 Engineering: Structural Design

0.5 Credit Humanities, Technologies, & Arts Grades: 9, 10, 11, 12

Lab Fee: \$35

This course offers students opportunities to explore pre-engineering and design concepts. The Engineering Design Process, Design Challenges and Engineering Notebooks will aid students in documenting their work and developing many iterations of their designs, through both models and prototypes. The project-based curriculum will expose students to different fields of study in Engineering. Areas of study include technical drawing by hand and AutoCAD, 3D modeling/printing, structural bridge design, ergonomic designs and the ethics of the engineering profession. This class would be beneficial for students who have a general interest in engineering but want to gain a deeper understanding of the various opportunities in the field so they can make more informed decisions regarding their future academic and career plans.

CHE 716 Robotics

0.5 Credit Humanities, Technologies, & Arts Grades: 10, 11, 12

Lab Fee: \$35

This course offers students opportunities to explore pre-engineering concepts in robotics. Using Lego Mindstormer EV3s and VEX Virtual Reality Robots, students will develop computational thinking skills and will transition from block coding to Python programming. Design briefs and challenges are used to describe real life situations and to provide an authentic learning experience. VEXcode VR and engaging robotics-based activities will be used to learn about project flow, loops, conditionals, algorithms, and more. Learning coding will help students develop 21st-century job skills. Most of today's professional math and science fields have a computational component. Additionally, skills such as the ability to analyze and solve unstructured problems and to work with new information are extremely valuable in today's knowledge economy. This course will help students become creators, not just consumers, of technology.

Music

845 Music: Film and Media

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11

Course Fee: \$5

This course explores how music works and the ways in which it can be combined with other forms of media. Through this course, students will have the opportunity to learn, discuss, and create music as it is found in: Film, Television, Broadcasting, Video Games, Podcasts, Commercials, Advertising, and much more. No prior musical experience necessary, just an interest in music.

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847 Digital Music Production

0.5 Credit Humanities, Technologies, & Arts Grades: 9, 10, 11, 12

Course Fee: \$5

With today's technology, anyone can create and produce music! This course will teach you the skills needed to use what is readily available to get your song "out there." You need no prior musical experience, just the love of learning in a new way and being creative. We will explore the features of GarageBand and learn about sound production, mixing tracks and beats, creating your own songs, basic recording, using FX, and creating music for video. This project-based class is designed to get students engaged in the technology used for music and to inspire them to continue to develop their skills beyond the classroom door on their way to the Grammys!

849 Guitar and Ukulele

0.5 credit Humanities, Technologies, & Arts Grades: 9, 10, 11, 12

Course Fee: \$10

This beginner course is designed to allow students the opportunity to pick up an instrument and learn to play. Basic technique, note reading, and musical interpretation are at the center of this course. Students will learn songs and techniques for both guitar and ukulele. No prior instrumental background needed.

851 Introduction to Music Theory

0.5 credit Humanities, Technologies, & Arts Grades: 10, 11

This introductory course is designed to help understand the fundamental concepts of music. All music is created from the same elements: pitch, rhythm, time, and expression. With these elements in mind, the course takes you from basic music reading through to analyzing the chords of famous pieces of music to allow us to understand the music better.

Performance Ensembles

855 Symphonic Band

1.0 Credit Humanities, Technologies, & Arts Grades: 9, 10, 11, 12

Symphonic Band is a performance, academic, and co-curricular ensemble open to Woodwind, Brass, and Percussion students in Grades 9 through 12. Students study and rehearse Band literature of various styles and difficulty in this class. Students refine performance technique and ensemble playing. Performances, concerts, and rehearsals outside of the school day are required. Students are encouraged to study privately on their individual instruments. As a co-curricular class, students enrolled in Symphonic Band participate in marching band at football games and parades. Participation fees are required to cover uniform and activity expenses.

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857 Orchestra

1.0 Credit Humanities, Technologies, & Arts Grades: 9, 10, 11, 12

Orchestra is an ensemble of performers who play stringed instruments. String players are eligible for inclusion by participation in the middle school program or by audition with the instructor. Standard orchestral literature and lighter selections are rehearsed and performed to gain an understanding of various periods and styles of music. Required concerts and performances are presented in the evenings throughout the school year. There is a uniform cleaning fee.

860 Concert Choir

1.0 Credit Humanities or Music Credit Grades: 9, 10, 11, 12

Every student will be given the opportunity, encouragement, and assistance to develop the fundamental skills essential for achieving a high standard of vocal performance: good tone quality, accurate intonation, correct breathing, clear diction, and an awareness and sensitivity for artistic interpretation. Required concerts and performances are the Winter Concert, Spring Concert and one other concert each year. In addition to regular class time, every student will be required to attend evening rehearsals prior to each concert as listed on the yearly Choral Department Calendar and in the Choral Department Handbook.

861 Springfield Singers

1.0 Credit Humanities, Technologies, & Arts Grades: 9, 10, 11, 12

This course is available to students through **Audition Only and Teacher Recommendation.**

The Springfield Singers is a select group whose membership is by audition only. The fundamental skills essential in achieving a high standard of vocal performance will be stressed. Emphasis will be on ear training, sight singing and application of basic music theory. A higher level of difficulty of choral literature will be learned. Required concerts and performances are listed on the yearly Choral Department Calendar and in the Choral Department Handbook (including: Winter Concert, Spring Concert, Graduation). In addition to regular class time, every student will be required to attend evening rehearsals prior to each concert. There is a nominal uniform cleaning fee.

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