MAGNET HIGH SCHOOL
FOR SCIENCE, MATHEMATICS, AND TECHNOLOGY

ACADEMIC PROGRAM GUIDE
2021-2022

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SCHEDULING

Students will complete a course registration form which must be returned to the appropriate school counselor. Students and parents should carefully read over all course descriptions and pre-requisites before selecting classes. Students will only be allowed to request courses for which they meet the pre-requisite requirements.

Every attempt will be made to honor a student's course requests; however, conflicts may occur due to scheduling constraints, in which case, students will be enrolled in the courses selected as alternates. Therefore, alternate choices should be selected carefully when planning a schedule of courses and ranked in order of preference.

ELECTIVE COURSE SCHEDULING

Classes that do not fulfill a specific graduation requirement are considered elective courses. Students may choose elective courses from any of the following three categories:

1. Core Content Courses
    a. Career and Technical Education (CTE), English, Social Studies, Mathematics, Science, World Language
2. Interdisciplinary Courses
3. CTE Courses at another UCVTS School*

*Scheduling priority is given to students in the school where the CTE course is offered. Students wishing to enroll in a CTE course outside of Magnet High School may do so only if space permits and the course is educationally beneficial to the student. CTE courses in other UCVTS schools are available to Magnet High School students on a limited basis. Please keep this in mind when making elective and alternate choices.

SCHEDULING PRIORITY

Scheduling priority for all CTE courses is given based on CTE school relative to the course and then seniority. Students will be scheduled as follows: senior CTE relative to the course, junior CTE relative to the course, sophomore CTE relative to the course, other seniors, other juniors, other sophomores.

Scheduling priority for all other courses, including core-content courses, is given based on seniority. Students will be scheduled as follows: all seniors, all juniors, all sophomores, all freshmen.

Scheduling priority applies only to the development of initial schedules. Once schedules are distributed to students, schedule changes will be made as space permits without regard to priority.

SCHEDULE CHANGES

Schedule changes will **not** be made for reasons of convenience or because of teacher preference. Only changes which are educationally beneficial to the student will be considered**.**

Scheduling changes will **not** be considered for any of the following reasons:

1. Course content or standards differing from student expectations.
2. Inability of a student to relate well to a given teacher.
3. Dropping a course in order to lighten one's load.
4. Participation in extra-curricular activities and/or athletics.

DROP/ADD PERIOD

Students have two weeks from the start of a semester to request a schedule change. All requests must be made in writing to the student's school counselor and will only be made if the change is educationally beneficial to the student.

ADVANCED PLACEMENT (AP) COURSE REQUIREMENTS

Advanced Placement (AP) courses are college-level courses that give students the opportunity to earn college credit or placement while still in high school. Due to the academic rigor of these courses, students and parents/guardians **must** read and sign a contract outlining course policies and expectations.

All AP courses are designed for those wishing to work diligently in order to prepare for the AP Exam administered by the College Board in May.

GRADING POLICY

Grades may be interpreted as follows:

A	90-100
B	80-89
C	70-79
D	65-69
F	64 or below

For full year courses, each marking period grade counts for 20% of the student's final course grade. Midterm and final examinations each count for 10% of the final course grade.

For semester courses, each marking period grade counts for 40% of the student's final course grade. The final semester examination counts for 20% of the final course grade.

QUALITY POINT AVERAGE

A Quality Point Average (QPA) will be calculated for each student. The final course grade is multiplied by the number of credits received for the course. The total credits and the total quality points are then divided to produce the QPA as in the example below:

Subject	Grade	Credits	Quality Points
Career and Technical	95	5	475
English	90	5	450
Social Studies	94	5	470
Math	87	5	435
Science	90	6	540
World Language	90	5	450
Fitness	98	3.75	356.25
Health	99	1.25	123.75
Total		36	3300

3308 / 36 = 91.6667

QPA is calculated for transcripts only when a course has been completed.

The QPA appearing on the high school transcript is **unweighted** and includes all subjects with the exception of repeated coursework. An official QPA can be obtained from the student's school counselor and can be found in Naviance Student. For more details, please see the Student Handbook.

FAILURES

Students that fail a course that is required for graduation must attend summer school and successfully complete the course before the next course in that subject area's sequence can be taken. It is the student's responsibility to find and enroll in an approved equivalent of the failed course. The transcript will show the

student's failing grade in the course, which will be included in the QPA. The transcript will also show that the student repeated the class and the grade that was earned. Grades earned in repeated coursework are not included in the QPA**.**

ACADEMIC PROBATION

Students whose work falls below acceptable standards of achievement (70%) may be placed on academic probation. A conference with a school administrator, counselor, parent(s), and student may be required so that the academic expectations of the Magnet High School may be reviewed. Options to help a student, such as peer tutoring, individualized instructional plans, or extra assistance from the faculty may be implemented. The school administrator may also take action on a case-by-case basis, including limiting a student's co-curricular options and participation in extra- curricular activities.

GRADUATION REQUIREMENTS

Students must earn 120 credits to graduate with a high school diploma endorsed by the New Jersey Department of Education. The **required** coursework for Magnet High School is as follows:

Subject Area	Freshmen Year	Sophomore Year	Junior Year	Senior Year
Career and Technical Education *4 years*	Technology & Design	Introduction to Engineering & Digital Modeling	Introduction to Programming **and** Advanced Manufacturing & Project Management	Intro to Architecture **and** Architectural CAD Design
English *4 years*	World Literature	Early American Literature	Modern American Literature	Additional English Course
Social Studies *3 years*	World History	United States History I	United States History II	
Mathematics* *4 years*	Combined Algebra	Geometry/Trigonometry	Math Analysis	AP Calculus I/AB
Science *4 years*	Biology **and** Scientific Inquiry & Analysis	Chemistry	Physics	Additional Science Course
World Language* *3 years*	Spanish I	Spanish II	Spanish III	
Fitness/Health *4 years*	Fitness I & Health I	Fitness II & Health II	Fitness III & Health III	Fitness IV & Health IV
Visual and Performing Arts *4 years*		Dance Appreciation		
Financial Literacy		Financial Literacy		

*Initial placement determined by UCVTS.

AWARDS AND HONORS

Honor Roll: Awarded each Marking Period to students earning an 80 or above in all subjects.

High Honor Roll: Awarded each Marking Period to students earning a 90 or above in all subjects.

National Honor Society: Open to junior and senior students who meet Society's standards for academics, character, leadership, and service. Students must have a QPA of 92 or above in order to be considered.

Spanish Honor Society: Open to junior and senior students earning a 92 or above in Spanish, and an overall QPA of 85 or above. Students must meet the Society's standards for academics, character, leadership, service.

CAREER AND TECHNICAL EDUCATION

** Courses marked with an asterisk may be available to students from other UCVTS schools based on availability. Magnet High School students are given priority enrollment in these courses.*

Course Title: Technology & Design **Course Number**: 01_1001_040
Grade Level: 9 **Credits**: 5

This course introduces freshmen to the technological essentials applied in the various fields of engineering, science, and technology. Students will focus on the principles and concepts of visual communication through practice and proficiency in manual technical drafting and Computer Aided Drafting (CAD). Additionally, students will study and utilize computer operating systems, word processing, spreadsheets, desktop-publishing, research and information gathering, technical writing, and presentation skills. Students will apply design techniques through the engineering design process and with the use of an engineer's notebook. By the end of this course, students will have the opportunity to take and pass the Autodesk® AutoCAD® certification exam.

Course Title: Introduction to Engineering & Digital Modeling **Course Number**: 01_2001_040
Grade Level: 10 **Credits**: 5
Pre-Requisite: Successful completion of Technology and Design

This full year sophomore level course is an introduction to several engineering disciplines. Students are provided with basic concepts and requirements one might expect in college or industry for various engineering disciplines such as Mechanical, Electrical, Chemical and Civil. Concepts are reinforced with hands-on projects or activities, with the incorporation of tools in the Makerspace. Students will build on the CAD skills learned in freshman year and begin 3D and parametric modeling.

Course Title: Advanced Manufacturing & Project Management **Course Number**: 01_3001_040
Grade Level: 11 **Credits**: 2.5
Pre-Requisite: Successful completion of Introduction to Engineering & Digital Modeling

In this course, students will execute an engineering project while continuing to learn parametric modeling techniques, as well as modern manufacturing methods. Students will produce and render models in parametric modeling software. Students will utilize the Makerspace to make physical prototypes of their designs through the use of digital fabrication tools such as 3D printers and CNC machining tools, enabling them to better understand the processes by which both prototypes and finished products are created.

Course Title: Introduction to Programming **Course Number**: 01_3002_040
Grade Level: 11 **Credits**: 2.5
Pre-Requisite: Successful completion of Introduction to Engineering & Digital Modeling

This semester course introduces students to the fundamentals of computer programming. Students will use programming as a problem-solving tool in various fields. Through the completion of programming exercises and more open-ended projects, students will learn about programming concepts, object-oriented programming, version control, and graphics techniques as they work towards the final project of designing and programming a video game or other major programming project.

Course Title: Introduction to Architecture **Course Number**: 01_4001_040
Grade Level: 12 **Credits**: 2.5
Pre-Requisite: Successful completion of Advanced Manufacturing & Project Mgmt and Intro to Programming

This semester course introduces students to core concepts in residential architecture. Using CAD and traditional drafting methods, students draft, analyze, and critique technical drawings. Types of drawings include floor

plans, elevations, and room layouts. Class discussions and writing exercises reinforce architectural terminology. Students complete the course as stronger consumers of housing, demonstrating an ability to consider the needs of themselves and others in their communities.

Course Title: Architectural CAD **Course Number**: 01_4002_040
Grade Level: 12 **Credits**: 2.5
Pre-Requisite: Successful completion of Advanced Manufacturing & Project Mgmt and Intro to Programming

In this semester course, students take on the role of architect in a virtual residential design firm. They develop, draft, revise, and present a set of plans, elevations, and schedules for their "Dream House" in an iterative process. This project builds on the knowledge gained from Introduction to Architecture. Students demonstrate mastery of the design process, CAD commands and drafting best practices.

Course Title: Senior Internship **Course Number**: 01_5002_040
Grade Level: 12 **Credits**: 5
Pre-Requisite: Student must secure internship at new or existing partner site by December 1. Student must have transportation to the internship.

The senior internship experience establishes corporate and educational liaisons to provide valuable learning opportunities and bridge the world beyond the campus. Mentorship opportunities have furthered such educational pursuits in the science, technology, or mathematics field. This out-of-school work experience will be offered during the second semester of the senior year. The internship will provide the opportunity for the student to experience "work-based learning" by placing them in a science, technology, or mathematics career setting with local companies. The internship is unpaid.

Placement locations should be identified by the student with assistance of the SLE coordinator. Placements must be found before December 1.

Course Title: Engineering Design Capstone **Course Number**: 01_5018_040
Grade Level: 12 **Credits**: 5
Pre-Requisite: Successful completion of Intro to Computer Programming and Advanced Manufacturing & Project Management

This project based class will challenge students to demonstrate their skills in engineering to solve a real-world problem of their choosing. Students will apply the engineering design process and their acquired engineering, math, and science skills to conduct research, propose ideas, evaluate solutions, build and test a prototype solution, and present their findings. Students will also document the process along the way. Portfolio development, branding and marketing, and presentation will also be a focus of the class. Available resources will include industry guest speakers and mentors, the Makerspace, and career and technical education staff.

Course Title: Electrical Engineering Concepts* **Course Number**: 01_5004_040
Grade Level: 10, 11, 12 **Credits**: 2.5
Pre-Requisite: Successful completion of or current enrollment in Geometry/Trigonometry
Co-Requisite: Course sequenced with Human Factors Engineering for MHS Sophomores; 11th and 12th graders may take course without a co-requisite

This semester course explores the concepts and theories of electronics design. Students will learn the basics of DC circuits, including Ohm's Law in series and parallel circuits. More advanced topics can include semiconductor devices, sensors, digital logic and microprocessors. Hands-on circuit building exercises are used to reinforce concepts learned in class.

Course Title: Human Factors Engineering * **Course Number**: 01_5019_040
Grade Level: 10, 11, 12 **Credits**: 2.5
Pre-Requisite: Successful completion of or current enrollment in Geometry/Trigonometry
Co-Requisite: Course sequenced with Electrical Engineering Concepts for MHS Sophomores; 11th and 12th graders may take course without a co-requisite

Human Factors Engineering is a real world application of engineering principles along with psychology and physiology to design and optimize objects to meet human wants and needs. Students will utilize the engineering design process and apply human factors engineering to successfully complete comprehensive design solutions. Assigned projects will be individual and/or in collaborative teams for finding, analyzing, applying data, creating mockups, models and prototypes for testing, redesigning and retesting design solutions. This course emphasizes strong problem solving skills, hands on prototyping, and using data/statistics to make design decisions.

Course Title: Civil Engineering Design* **Course Number**: 01_5003_040
Grade Level: 11, 12 **Credits**: 2.5

Civil engineers build societies from the landmarks that define who we are, to the hidden infrastructure that is essential to our quality of life. This course will provide a broad understanding of civil engineering design techniques and software practices, along with a working knowledge of the basic components of mapping. Students will work individually and in teams on design problems that are drawn from industry. Projects may include, but are not limited to: components of surveying, map reading and layout, legal descriptions, profiles and cross-section layout, earthwork calculations, and civil engineering detailed drawings.

Course Title: Aerospace Engineering* **Course Number**: 01_5005_040
Grade Level: 11, 12 **Credits**: 2.5
Pre-Requisite: Successful completion of or current enrollment in Physics

This course explores the design and creation of aircrafts including powered and gliding aircrafts, as well as space crafts. Topics of study will include, but are not limited to: the history of flight and space travel, forces that impact flight, control surfaces and how they affect flight, as well as movement of aircraft during flight. Projects may include, but are not limited to: gliders, powered aircraft, rockets, space stations, and hot air balloons..

Course Title: Robotics* **Course Number**: 01_5007_040
Grade Level: 11, 12 **Credits**: 2.5

In this project-based class students will explore engineering and technology as they build, wire, and program a robot. Robots will use sensors and computer programming to interact autonomously with their surroundings. Students will be learning mechanical design, electronics, and programming over the course of the semester. Projects may include line-following robots, wireless communications, and combat robots.

Course Title: Environmental Engineering* **Course Number**: 01_5009_040
Grade Level: 11, 12 **Credits**: 5
Pre-Requisite: Successful completion of Biology and Chemistry; successful completion or current enrollment in Math Analysis
Core Requirement: This course may be used to satisfy a UCVTS science requirement.

As our world-wide environment is changing, the study of environmental engineering is becoming ever more important to our society. This course will provide a broad understanding of environmental engineering and the role this discipline plays in water treatment and water safety, hazardous waste management, world-wide and

local environmental issues, creating sustainable food production, and civil engineering. This course requires a strong command of algebra and chemistry, as well as problem solving and analysis.

Course Title: Introduction to Chemical Engineering* **Course Number**: 01_5010_040
Grade Level: 11, 12 **Credits**: 2.5
Pre-Requisite: Successful completion of Chemistry and successful completion or current enrollment in Physics
Core Requirement: This course may be used to satisfy a UCVTS science requirement in conjunction with Biochemistry

In this introductory course, we cover mass balances, energy balances, simple one stage equilibrium separations and one business metric of investment, after-tax return on investment. Using these tools in conjunction with an industrial chemical process simulator, teams of "engineering" teams work to create processes with the optimal economics. Some of the chemicals we have "made" in the past include ammonia, monoethanol amine and methanol. Most of the material is considered college-level.

Course Title: Biochemistry* **Course Number**: 01_5011_040
Grade Level: 11, 12 **Credits**: 2.5
Pre-Requisite: Successful completion of Chemistry
Core Requirement: This course may be used to satisfy a UCVTS science requirement in conjunction with Introduction to Chemical Engineering

Biochemistry explores the molecular basis for life. In this course, we focus first on the basics of organic chemistry, which is a prerequisite course in many college majors such as chemistry, chemical engineering, pre-med, etc. The course begins with a brief review of chemical bonding and then moves onto the basics of organic chemistry such as nomenclature, properties of organic molecules, and reactions. After covering the basics of organic chemistry we will move on to biochemistry topics such as carbohydrates, lipids, and proteins, and the role they play in the body. Laboratory experiments and demonstrations are included to illustrate the principles of the course.

Course Title: Fundamentals of Biomedical Engineering* **Course Number**: 01_5014_040
Grade Level: 11, 12 **Credits**: 5
Pre-Requisite: Successful completion of Biology and Chemistry; successful completion of or current enrollment in Physics
Core Requirement: This course may be used to satisfy a UCVTS science requirement.

The field of biomedical engineering encompasses a unique amalgamation of applying engineering principles to modern medicine. The goal of the course is to impart an understanding of different engineering applications in relation to foundational knowledge of biology, chemistry, human anatomy and physiology. Given the vast breadth of the multidisciplinary field of biomedical engineering, this course is designed to introduce students to various sub disciplines rather than gaining mastery in a single topic. Topics of study may include, but are not limited to: genetic engineering, biomaterials, prostheses, artificial organs, tissue engineering and regenerative medicine, diagnostics, health and patient monitoring, medical implants, nanotechnology and drug delivery, bioimaging, radiation and chemotherapy in cancer, and systems biology. Emphasis will be laid on being abreast with the latest research through perusal of peer reviewed journals aimed in understanding the complexities of the human body and applying engineering concepts towards designing solutions to real world problems.

Course Title: Patent Law*/** **Course Number**: 01_5016_040
Grade Level: 11, 12 **Credits**: 2.5

The goal of the course is to introduce students to the law governing the process, the functions of the United

States Patent and Trademark Office, and the roles of the attorneys and agents who assist inventors in applying for and obtaining patents, copyrights, trademarks. Additionally, the course will cover the patent process itself so that students who may one day apply for their own patents are familiar with the requirements. Topics of study may include the concept of intellectual property, the patent laws, what can be patented, copyrighted, and/or trademarked, conditions for obtaining a patent, types of patents, role of patent attorneys and agents, the patent application and its components, the application process, patent rights, infringement of patents, and patent litigation. Students will use a variety of resources in their studies, including intellectual property law, various print and online resources produced by the USPTO, case law, and other relevant materials.

***This course is offered in conjunction with The Academy for Law & Justice. MHS and ALJ students are given priority enrollment in this course.*

ENGLISH

Course Title: World Literature
Course Number: 02_1001_040
Grade Level: 9
Credits: 5

The World Literature course is designed to expose students to a variety of countries and forms of literature. While participating in individual and class assignments, students will have an opportunity to explore a multitude of cultures. This experience is further enhanced by joint projects and activities which occur between the World History and World Literature classes. A large emphasis is placed on common themes to help students understand and appreciate the similar human conditions that exist in all cultures. These themes include the struggle with intolerance, love, coping with death, metamorphoses, and communion with nature. Many of the selections read and discussed in class come from China, India, Africa, Egypt, the Middle East, Greece, Rome, and Europe during the Middle Ages and Renaissance period. Types of literature covered include the novel, epic poem, poetry, critical essays, editorials, short stories, drama/plays, and several classical selections. In addition to reading, students will be required to write several different forms of literature, essays, and one major research paper.

Course Title: Early American Literature
Course Number: 02_2001_040
Grade Level: 10
Credits: 5
Pre-Requisite: Successful completion of World Literature

The Early and Modern American Literature courses are designed to take the students through an in-depth study of the individual writings that shape and document the American literary tradition. Students will have an opportunity to explore primary texts, novels, poems, and other artistic productions through participation in both individual and group assignments. This experience is further developed through an integrated curriculum with United States History I. A major goal of the course is for the student to come to understand the culture and history of expression of our nation and his or her place within that tradition. Writing and language arts skills are stressed throughout the year's course of study. Many of the selections read and discussed in class come from the conventional cannon of American Literature, but extend beyond to art, dance, writings, and other materials gleaned from pop-culture, cultures excluded from traditional studies, and other sources. The outline for the course of study is chronological. Early American Literature begins with the Native American cultures and their initial contact with European explorers and settlers, continues through Colonial and Revolutionary America, all the way through the end of the Nineteenth Century. Specific units also deal with Growth and expansion of the 1820s to 1850s, the Civil War, Reconstruction, Industrialization and Immigration, and the Gilded Age.

Course Title: Modern American Literature
Course Number: 02_3001_040
Grade Level: 11
Credits: 5
Pre-Requisite: Successful completion of Early American Literature

Modern American Literature closely parallels US History II in its chronological, psycho- social, thematic-based approach to the continuation of the American literary experience through intense individual and group readings and analyses of literary works spanning American Literature from 1865 (Twain) through the 20th Century (World Wars I and II, Post-War 1950's, the 1960's, 1970's, 1980's, 1990's) to Contemporary works of the 21st Century. Novels include, but are not limited to, *The Sun Also Rises*, *To Kill a Mockingbird*, *Catcher in the Rye*, *Fahrenheit 451*. The drama *A Streetcar Named Desire* may also be read and the film viewed for additional immersion in the study of play-writing and producing for the student who possesses a penchant for the genre. Independent studies are strongly encouraged and instructor-facilitated. Emphasis is placed upon further developing and mastering of grammatical techniques and continued exposure to the Writing Process Approach employed to enhance student written production (i.e. narrative, persuasive, informational, creative writing), as well as to facilitate successful outcomes on standardized test-taking. Through advanced study and immersion in a myriad of learning environs, the student will independently select a literary research topic, develop a thesis, and produce a research paper following MLA Documentation Style guidelines. Focus is on student integration of the relationship between literacy and the world as an impetus for developing a continuing appreciation for the acquisition of knowledge

Course Title: British Literature **Course Number**: 02_4001_999
Grade Level: 12 **Credits**: 5
Pre-Requisite: Successful completion of Modern American Literature

This course will focus on a chronological study of British Literature from its Anglo-Saxon period to the present. Emphasis will be placed upon reading and interpreting works of the great masters, from Chaucer and Shakespeare to Joyce and Eliot in thematic units which compare and contrast works from various time periods. The student will be exposed to various forms of literature from poetry and short stories to dramas and novels. In addition, students will be expected to demonstrate a strong command of their writing skills through essay writing, critical writing, creative writing, and a research paper, and to focus on clear development of literary analysis. Class participation and public speaking will be essential to the group dynamic of the course and will be used to enhance the information of the texts with personal interpretation and discussion.

Course Title: AP English Literature & Composition **Course Number**: 02_4002_999
Grade Level: 12 **Credits**: 5
Pre-Requisite: 85 or higher recommended in Modern American Literature

The AP English Literature and Composition class will be a combination of preparation for the AP English Literature and Composition Exam to be taken in May as well as a collegiate level study of literature and writing. Through a curriculum outlined by the College Board, the class will enable students to read and understand complex texts and demonstrate this understanding through mature and effective writing. The literature of the course can be broken down into three genres: poetry, drama, and fiction (novel and short story). Close reading will revolve around the experience, interpretation, and evaluation of literature. Students will be expected to read deliberately and thoroughly, taking time to understand a work's complexity, to absorb its richness of meaning, and to analyze how that meaning is embodied in literary form. Concurrently, students will be expected to have a strong background in grammar in order to focus intense concentration on enhancing their abilities in analytical and critical writing. Various forms of writing will be emphasized and frequent writing assignments of varying lengths with several drafts should be expected.

Course Title: AP English Language & Composition **Course Number**: 02_5001_999
Grade Level: 12 **Credits**: 5
Pre-Requisite: 85 or higher recommended in Modern American Literature

The AP English Language & Composition provides students the opportunity to learn the principles of argument and rhetoric with frequent opportunities to analyze a variety of nonfiction texts, including essays,

speeches, letters, and narratives. Students will learn how to develop an effective argument, analyze the arguments of others, and recognize logical fallacies. Research papers are required.

Course Title: Writers of the African Diaspora **Course Number**: 02_5002_999
Grade Level: 12 **Credits**: 5

Students in this course will be introduced to the works of African American individuals from the periods of slavery to the great Harlem Renaissance to the contemporary era. Through close readings of selected literary works, students will enhance and increase their development of literary and analytical skills. Reading selections will include fiction, nonfiction, drama, and poetry. The writing assignments will consist of the modes of exposition, literary analysis, narration, and description.

Course Title: Dramatic Literature: Modern Drama **Course Number**: 02_5003_999
Grade Level: 12 **Credits**: 5
Core Requirement: This course may *not* be used to satisfy the MHS fourth year English requirement and is offered as an elective opportunity only.

Students will read and analyze a variety of dramatic works, from classical to contemporary (origins of drama, Elizabethan drama, Restoration: 18th to 19th century drama, 20th century drama, contemporary drama). Major plays and playwrights from world theaters will be discussed. Texts will be studied in chronological order. Through close readings of selected literary works, students will enhance and increase their development of literary and analytical skills. In addition to discussion and essay writing, students will be required to engage in staged performances and scenes from the works in question.

This is a proposed new course for the 2021-2022 school year. The availability of the course is not guaranteed. Please keep this in mind when making course selections.

SOCIAL STUDIES

Course Title: World History **Course Number**: 03_1001_040
Grade Level: 9 **Credits**: 5

This course explores the world history, economics, and geography from 1450 C.E. to the present. Geographic influences on history will be explored, as will political boundaries that developed with the evolution of nations. Significant attention will be given to the ways in which scientific and technological revolutions created new economic conditions that in turn produced social and political changes. Noteworthy people and events of the nineteenth and twentieth centuries will be emphasized for their strong connections to contemporary issues. The course utilizes various elements of technology and interdisciplinary philosophies to meet the needs of the students as well as the goals of the instructor.

Course Title: United States History I **Course Number**: 03_2001_040
Grade Level: 10 **Credits**: 5
Pre-Requisite: Successful completion of World History

This course involves the study of the development of the North American continent from the late 16th century through the late 19th century. The course analyzes the political, economic, and social factors that led to the creation of modern democracy and the struggle to keep this grand experiment alive. Specific topics that are discussed start with the arrival of the British, Spanish, and French in the 1500's, their interaction with the native populations, Colonial America, the Revolutionary War, the writing of the United States Constitution, the Civil War, Slavery, and Industrial Growth in America. The course utilizes various elements of technology and interdisciplinary philosophies to meet the needs of the students as well as the goals of the instructor.

Course Title: United States History II **Course Number**: 03_3001_040
Grade Level: 11 **Credits**: 5
Pre-Requisite: Successful completion of United States History I

In this course, students will study the social, political, and economic characteristics of the United States from 1880 to the present. Topics will include American Imperialism, Progressivism, the United States at War, the Great Depression, the Sixties, and the Vietnam Conflict, among others. Students will take part in a variety of activities geared to accommodate different learning styles. These activities include simulations, writing exercises, cooperative learning, and visual and audible expression.

Course Title: AP United States History **Course Number**: 03_5001_999
Grade Level: 12 **Credits**: 5
Pre-Requisite: 85 or higher recommended in US History II

The AP United States History course is designed to provide students with the analytic skills and factual knowledge necessary to deal critically with the problems and materials in U.S. history. The course prepares students for intermediate and advanced college courses by making demands upon them equivalent to those made by full year introductory college courses. Students should learn to assess historical materials – their relevance to a given interpretive problem, reliability, and importance – and to weigh the evidence and interpretations presented in historical scholarship. An AP U.S. History course should thus develop the skills necessary to arrive at conclusions on the basis of an informed judgment and to present reasons and evidence clearly and persuasively in essay format. Topics covered will include: American diversity, American identity, culture, demographic changes, economic transformations, environment, globalization, politics and citizenship, reform, religion, slavery and its legacies in North America, and war and diplomacy.

Course Title: AP U.S. Government & Politics **Course Number**: 03_5002_999
Grade Level: 12 **Credits**: 5
Pre-Requisite: 85 or higher recommended in US History II

This course will give students an analytical perspective on government and politics in the United States. The course includes both the study of general concepts used to interpret U.S. politics and the analysis of specific examples. It also requires familiarity with the various institutions, groups, beliefs, and ideas that constitute U.S. politics. Topics of discussion include: The U.S. Constitution, political parties, interest groups, mass media, public policy, civil rights, and civil liberties. Students are expected to be up-to-date on current events in order to facilitate discussion.

Course Title: AP European History **Course Number**: 03_5003_999
Grade Level: 12 **Credits**: 5
Pre-Requisite: 85 or higher recommended in US History II

The goals of the AP European History course are for students to gain knowledge of basic chronology of major events and trends from approximately 1450 to the present. Also, students will develop an understanding of some of the principal themes in modern European history including intellectual and cultural history, political and diplomatic history as well as social and economic history. Finally, the students will gain an ability to analyze historical evidence, as well as express historical understanding in writing. This is a demanding course for students with a serious interest in history. Students will be expected to interpret and analyze historical documents as well as identify trends over time.

Course Title: Genocide Studies & The Holocaust **Course Number**: 03_5004_999
Grade Level: 11, 12 **Credits**: 5

This course will be an examination of the history of genocide, including the causes and consequences of genocides. The students will examine the psychological and sociological aspects of genocides, including hate

and prejudice, de facto and de jure discrimination, and organized violence towards specific groups. The course will specifically analyze genocides and compare and contrast the unique settings of each, including the genocides within Africa, Asia, and Europe. Topics will include possible genocides in the Ottoman Empire, Soviet Union, Germany, China, Cambodia, Bosnia, Rwanda, and the Sudan. Studies will be done utilizing primary and secondary sources, literature, and film. The class will help students attain a detailed understanding of human rights, international policy, and the social studies. Furthermore, students will gain a deeper appreciation for different cultures and religions around the world. Students will learn the complex interactions between different groups of people and the consequences of prejudice and discrimination between these groups. The course will challenge the students to utilize critical thinking skills to improve the world.

Course Title: War & Conflict in Modern America
Course Number: 03_5005_999
Grade Level: 11, 12
Credits: 5

This course will examine wars and conflicts throughout recent American history, beginning with World War I. Events will be compared and contrasted through a case study approach. Students will attempt to answer big idea or essential questions using primary and secondary sources as evidence. In particular, students will explore what factors cause wars to become unpopular, when a war is likely to be supported by the American people, and how different groups (racial, gender, or ethic) treated during American wars. The course will target student growth in interdisciplinary skills including reading and analyzing information texts, forming and writing independent views, using data and statistics to analyze the costs/benefits of war, and looking at how science and technology have impacted war through the years.

Course Title: United States History Through Crime**
Course Number: 03_5006_999
Grade Level: 11, 12
Credits: 5

This course is an examination of the modern history of the United States through the crimes that were committed during the time period. Beginning in September, students will engage in a thorough analysis of the psychology of criminals, the establishment of criminal law in the United States, and an evaluation of the justice system for crimes committed in each time period. The course will specifically analyze how mass crimes are a representation of the major issues within a time period, and how learning about these crimes can help one understand that time period. Topics will include mass resistance after the U.S. Civil War, political corruption in the Gilded Age, domestic terrorism during the First Red Scare, bootlegging and gangsters of the 1920s, bank robberies of the Great Depression, treason and espionage during the Cold War, the crimes of the rebellious 1960s (serial killers, cults, and drugs), and the gang wars of the late 20th century. Studies will be done utilizing primary and secondary sources, literature, and film. The culmination of the course will be a thorough analysis of mass domestic terrorism in the 21st century to create hypotheses of why these crimes are occurring presently and how society and/or the government can solve these issues.

***This course is offered in conjunction with The Academy for Law & Justice. ALJ students are given priority enrollment in this course.*

MATHEMATICS

Course Title: Combined Algebra
Course Number: 04_1001_040
Grade Level: as determined by UCVTS Placement Test
Credits: 5

Combined Algebra is an in-depth coverage of all topics in a traditional Algebra I course and most topics in a traditional Algebra II course. These topics include the study of linear equations, absolute value equations, quadratic equations and parabolas, functions, basic matrix operations, linear inequalities, systems of equations and inequalities, polynomial and rational equations, and powers, exponents, and radicals. This is a rigorous course with an emphasis on problem solving, working collaboratively, and communicating mathematically in both written and oral form.

Course Title: Geometry/Trigonometry **Course Number**: 04_2001_040
Grade Level: as determined by UCVTS Placement Test **Credits**: 5
Pre-Requisite: Successful completion of Combined Algebra or placement test results

Geometry/Trigonometry is an in-depth coverage of plane and solid geometry with additional study of selected topics from plane trigonometry and discrete mathematics. Geometry topics include the study of reasoning and logic, proofs, constructions, lines, triangles, polygons, circles, similarity, congruence, transformations, planar and space measurements. Trigonometry topics include trigonometric ratios as defined for the right triangle and unit circle, reciprocal, quotient and Pythagorean identities, inverse trigonometric functions, Law of Sines and Law of Cosines. Discrete mathematics topics include basic principles of iteration, recursion, and mathematical induction, which are used to solve combinatorial and algorithmic problems. Geometry/Trigonometry is a rigorous course with an emphasis on problem solving, working collaboratively, and communicating mathematically in both written and oral form. Appropriate computer software as well as educational media is used to introduce and reinforce concepts visually.

Course Title: Math Analysis **Course Number**: 04_3001_040
Grade Level: as determined by UCVTS Placement Test **Credits**: 5
Pre-Requisite: Successful completion of Geometry/Trigonometry or placement test results

Math Analysis is an in-depth coverage of advanced algebra as well as the rigorous study of pre-calculus. Topics include real numbers, exponents and radicals, polynomials and factoring, fractional expressions, solving equations and inequalities, functions and their graphs, polynomial and rational functions, complex numbers, exponential and logarithmic functions, trigonometric functions, analytic trigonometry, analytic geometry/conic sections, series and sequences, probability, statistics and data analysis, linear algebra and matrix mathematics and determinants. Connections between algebra, geometry, and trigonometry will be made. These topics form the foundation for the successful study of calculus. Math Analysis is a rigorous course with an emphasis on developing problem-solving and reasoning abilities, the use of graphing calculators, communicating mathematically in both written and oral form, and solving real life problems.

Course Title: AP Calculus I/AB **Course Number**: 04_4002_999
Grade Level: as determined by UCVTS Placement Test **Credits**: 5
Pre-Requisite: Successful completion of Math Analysis

AP Calculus I/AB is a rigorous college-level course which emphasizes a multi- representational approach to calculus, with concepts, results, and problems being expressed geometrically, numerically, analytically, and verbally. Topics covered include the initial review of pre- calculus topics, limits, differentiation and its applications, and integration and its applications. There is an emphasis on problem solving, working collaboratively, and communicating mathematically in both written and oral form. Applications relating to the field of engineering will be regularly emphasized and integrated through instruction, activities, and evaluations. Since this is an Advanced Placement college-level course, students are expected to spend a considerable amount of time outside of class in homework preparation and daily studying.

Course Title: AP Calculus II/BC **Course Number**: 04_5001_999
Grade Level: as determined by UCVTS Placement Test **Credits**: 5
Pre-Requisite: Successful completion of AP Calculus I/AB

AP Calculus II/BC is a rigorous college level course that emphasizes a multi-representational approach to calculus. Students learn to express mathematical concepts geometrically, numerically, analytically, and verbally. As a continuation of Calculus I, topics covered in this class include applications and techniques of integration, L'Hopitals' Rule, improper integrals, an introduction to differential equations, infinite series and sequences, conic sections, parametric and polar equations. Students will be expected to participate in a

collaborative learning environment. As in Calculus I/AB, problem solving and mathematical communication in written and oral form are an essential component of this course. All students are expected to spend considerable time outside of class in homework preparation and daily study.

Course Title: Multivariable Calculus **Course Number**: 04_5002_999
Grade Level: as determined by UCVTS Placement Test **Credits**: 2.5
Pre-Requisite: Successful completion of AP Calculus II/BC
Co-Requisite: Course Sequenced with Linear Algebra

Multivariable Calculus, also known as Calculus III, is part of the core college math curriculum for science, engineering, math, computer science, and other disciplines which is typically taken by students during the first half of their sophomore year in college. As a continuation from AP Calculus II/BC, students will need a strong working knowledge of differentiation and integration techniques. Topics include vector functions and the geometry of space, differentiation and integration of functions with several variables, multiple integrals, partial derivatives, directional derivatives, optimization, line integrals, Green's Theorem, vector analysis, and related applications. Problem solving and mathematical communication in written and verbal forms are an essential component of this course, as well as working in a collaborative learning environment. Students are expected to spend a considerable amount of time outside the class of homework and daily preparation. High expectation of student performance will be maintained.

Course Title: Linear Algebra **Course Number**: 04_5008_999
Grade Level: as determined by UCVTS Placement Test **Credits**: 2.5
Pre-Requisite: Successful completion of AP Calculus II/BC
Co-Requisite: Course Sequenced with Multivariable Calculus

An introductory Linear Algebra is part of the core college math curriculum for science, engineering, math, computer science, and other disciplines which is typically taken by students during the second half of their sophomore year in college. The course covers the fundamentals of vector spaces and linear transformations on an axiomatic basis. Topics include: solutions of linear systems, matrix algebra over the real numbers, linear independence, bases and dimension, eigenvalues/eigenvectors, and determinants. As a prominent real-world application, the course will include an introduction to Linear Programming (LP) and the fundamental concepts behind the Simplex Algorithm for solving LPs. Students will be expected to model, solve, and interpret the solutions of LPs. Students are expected to spend a considerable amount of time outside the class on homework and daily preparation. High expectation of student performance will be maintained.

Course Title: Mathematical Statistics and Data Sciences **Course Number**: 04_5006_999
Grade Level: 12 **Credits**: 5
Pre-Requisite: Successful completion of or current enrollment in Multivariable Calculus/Linear Algebra

This course can qualify as a junior/senior-level college subject that provides a strong core foundation in graduate level statistics and data sciences, which are heavily used throughout industry. Coursework will include a calculus-based approach to probability and statistics, beginning with probability axioms, which will be used to derive and discuss various discrete and continuous probability distributions, along with their applications to statistical analysis. Major topics will include: random variables, distribution functions and expectation, special parametric families of univariate distributions, joint and conditional distributions, stochastic independence, sampling and sampling distributions, parametric point and interval estimation, and testing of hypotheses. Students will use R-Programming Language to acquire and analyze (reduction, visualization, summarizations, correlating, etc) raw data to prepare for formal analyses (e.g. modeling, linear regression, estimation, testing, etc.). Students will use single and multiple-variable regression techniques to model and validate data as part of a capstone project to close out the course.

Course Title: Probability & Statistics **Course Number**: 04_5004_999

Grade Level: 12 **Credits**: 5
Pre-Requisite: Successful completion of Math Analysis
Core Requirement: This course may *not* be used to satisfy the MHS mathematics requirement and is offered as an elective opportunity only.

Probability and Statistics is an introductory course in descriptive statistics and statistical inference including the study of probability. Topics of study include summary statistics, graphical displays of data, sampling, probability distributions, confidence intervals and significance testing. Practical problems involving correlation, linear regression, surveys, experiments and hypothesis testing are also included. There will be an emphasis on developing a critical perspective of data and statistical analyses as they are presented in popular culture. Problem-solving and reasoning abilities will be enhanced. Graphing calculator, written and oral communication and collaboration skills will be employed in solving real-life problems.

Course Title: AP Statistics **Course Number**: 04_5005_999
Grade Level: 12 **Credits**: 5
Pre-Requisite: 85 or higher recommended in Math Analysis
Core Requirement: This course may *not* be used to satisfy the MHS mathematics requirement and is offered as an elective opportunity only.

AP Statistics is an intensive course that introduces students to the major concepts and tools for drawing conclusions from data. Areas of study include data analysis, regression analysis, probability, sampling and experimentation, and statistical inference. Theory and practice involve summary statistics and graphical displays of data, correlation, linear regression, survey design and implementation, design of experiments, probability distributions, confidence intervals and hypothesis testing. Graphing calculator, statistical software, and written and oral communication skills will be developed by solving real-life problems and interpreting the results using actual data.

SCIENCE

Course Title: Biology **Course Number**: 05_1001_040
Grade Level: 9 **Credits**: 6

Biology I is a laboratory based course which will emphasize the scientific method and current biological techniques that will challenge students to think creatively, make critical evaluations of their own work, and provide them with a model for interpreting the world around them. Students will develop the fundamental skills of problem-solving, concise writing, expressing original ideas, reading critically, and public speaking. The course is designed as an introductory course for first year students. However, it will delve into the more complex details by examining biology at a molecular, cellular, organismal and ecological level. Therefore, not only should it complement their previous experience with the life sciences, but also intrigue and entice those students interested in a biology-related career to pursue further studies in the field of Biological Sciences.

Course Title: Scientific Inquiry & Analysis **Course Number**: 05_1002_040
Grade Level: 9 **Credits**: 5

Scientific Inquiry and Analysis is an interdisciplinary full year course. The course emphasizes development of skills that are common to the various disciplines of science. Students will obtain proficiency in the use of graphing calculators and computers within scientific contexts. In particular, students will utilize technology for scientific data acquisition, mathematical analysis of data, and presentation of data obtained from a wide array of physical, biological, and social science contexts. Skills and procedures that are common to all laboratory sciences will be highlighted such as the scientific method, systems of measurement, unit conversions, significant figures, error analysis, laboratory reports, measurement tools and techniques, and experimental design. Additionally, the course will provide an introduction to the core concepts of physics and chemistry.

Students will practice and apply a variety of methods for the collection, organization, description, and presentation of scientific data. In particular, students will use various mathematical models and techniques such as iteration, recursion, and the application of probability and statistics, to solve and analyze problems arising within the context of the sciences. The course will culminate in a student-designed, independent research project, through which students will apply skills and techniques learned in this course to analyze a real-world question.

Course Title: Chemistry **Course Number**: 05_5002_040
Grade Level: 10 **Credits**: 6
Pre-Requisite: Successful completion of Biology and Scientific Inquiry and Analysis

Chemistry is a rigorous course intended to give the serious science student a well-rounded background in general chemistry. The student will be exposed to a variety of experiences both individually and in groups. It is designed on the principle that observation, experimentation, problem solving and reliance on mathematics is central to the development of an understanding of the subject. Hands-on activities emphasize safe laboratory practices and the aspects of applied chemistry. Topics covered include the scientific method, atomic structure, and molecular architecture, physical and chemical behavior of matter, quantitative and qualitative analysis, periodicity, laboratory technique, right-to- know and industrial chemistry. Since an accommodation to a variety of learning styles is stressed, students will be evaluated with a variety of criteria as well. Written homework, reports, class presentations, teacher-designed and standardized tests, class participation and observation of laboratory skills will be used to evaluate the student's general knowledge and academic success.

Course Title: Physics **Course Number**: 05_3001_040
Grade Level: 10**, 11 **Credits**: 6
Pre-Requisite: Successful completion of Geometry/Trigonometry; successful completion of or current enrollment in Chemistry

Physics is an in-depth, rigorous course in which students study the behavior of the physical world. The course is designed to help students develop a broad background in general physics. Students will learn about Mechanics (motion, forces, and energy), Thermodynamics, Electricity and Magnetism, Waves, and Optics. Additional topics will be investigated as time permits. Physics emphasizes the development of reasoning and problem-solving abilities. Students will routinely utilize technology such as graphing calculators and computers for data collection and analysis, both in the classroom and in the laboratory. Hands-on laboratory experience is a fundamental part of the course, with algebra and trigonometry used extensively to analyze data. Students will learn to communicate scientifically and mathematically, in both written and oral forms, while investigating real-life phenomena.

**10th grade students enrolled in Physics are required to enroll in AP Physics C: Mechanics as their junior science course.

Course Title: AP Biology **Course Number**: 05_5001_999
Grade Level: 11, 12 **Credits**: 6
Pre-Requisite: 85 or higher recommended in Biology and Chemistry

AP Biology is designed to be the equivalent of a college introductory biology course. Three general areas of biology, molecules and cells, heredity and evolution, and organisms and populations, will be covered in detail. The two main goals of AP Biology are to help students develop a conceptual framework for modern biology and to help students gain an appreciation for science as a process. To gain conceptual understanding students must participate in scientific inquiry, recognize unifying themes that integrate the many parts of biology, and apply biological knowledge and critical thinking to environmental and social issues.

Course Title: AP Chemistry **Course Number**: 05_5002_999
Grade Level: 11, 12 **Credits**: 6
Pre-Requisite: Successful completion of or current enrollment in Math Analysis; 85 or higher recommended in Chemistry

Chemistry is a rigorous course intended to give the serious science student a well-rounded background in general chemistry. The student will be exposed to a variety of experiences both individually and in groups. It is designed on the principle that observation, experimentation, problem solving and reliance on mathematics is central to the development of an understanding of the subject. Hands-on activities emphasize safe laboratory practices and the aspects of applied chemistry. Topics covered include the scientific method, atomic structure, and molecular architecture, physical and chemical behavior of matter, quantitative and qualitative analysis, periodicity, laboratory technique, right-to- know and industrial chemistry. Since an accommodation to a variety of learning styles is stressed, students will be evaluated with a variety of criteria as well. Written homework, reports, class presentations, teacher-designed and standardized tests, class participation and observation of laboratory skills will be used to evaluate the student's general knowledge and academic success.

Course Title: AP Physics C: Mechanics **Course Number**: 05_5003_040
Grade Level: 11**, 12 **Credits**: 6
Pre-Requisite: Successful completion of or current enrollment in AP Calculus I/AB; 85 or higher recommended in Physics

This is a calculus-based college-level continuation of the Physics course. The course is designed to be equivalent to the first semester of a typical college sequence in physics for science and engineering majors. Major areas of study include kinematics, forces and motion, work and energy, systems of particles, rotational dynamics and statics, gravitation, and oscillations. The main goal of the course is to further develop students' problem solving and critical thinking skills through in-depth investigation of classical mechanics. This course emphasizes problem solving, working collaboratively, and communicating scientifically in both written and oral form. Calculus is used extensively, both in developing and unifying concepts and in problem solving. The laboratory component of this course focuses on the design of experiments, with students developing skill in measuring, organizing, and analyzing data.

**11th grade students who have completed Physics as 10th graders must enroll in AP Physics C: Mechanics as their required junior science course.

Course Title: AP Physics C: Electricity & Magnetism **Course Number**: 05_5004_999
Grade Level: 12 **Credits**: 6
Pre-Requisite: Successful completion of AP Calculus I/AB; 85 or higher recommended in Physics C: Mechanics

Electricity & Magnetism is a calculus-based college-level continuation of the Physics I course. The course is designed to be equivalent to the second semester of a typical college sequence in physics for science and engineering majors. Major areas of study include electric forces and fields, Gauss' Law, electric potential, capacitance, DC circuits, magnetic forces and fields, and induction. The main goal of the course is to further develop students' problem solving and critical thinking skills through in-depth investigation of classical mechanics and electricity & magnetism. This course emphasizes problem solving, working collaboratively, and communicating scientifically in both written and oral form. Calculus is used extensively, both in developing and unifying concepts and in problem solving. The laboratory component of this course focuses on the design of experiments, with students developing skill in measuring, organizing, and analyzing data.

Course Title: AP Environmental Science **Course Number**: 05_5012_999
Grade Level: 12 **Credits**: 5

The goal of the AP Environmental Science course is to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving or preventing them.

In addition to the courses above, the following Career and Technical courses satisfy the MHS science requirement:

- Fundamentals of Biomedical Engineering
- Environmental Engineering
- Introduction to Chemical Engineering[+]
- Biochemistry[+]

WORLD LANGUAGE

Course Title: Spanish I
Course Number: 06_1001_999
Grade Level: 9
Credits: 5

This course serves as an introduction to formal language study. Because language learning is a cumulative and cultural experience, the focus of the first level language course is to assist the student in establishing a foundation that he or she may build upon as language study continues. Interest in Hispanic culture will be stimulated by the study of culture, which provides a better understanding of the life, customs and speech of the people.

Course Title: Spanish II
Course Number: 06_2001_999
Grade Level: as determined by UCVTS Placement Test
Credits: 5
Pre-Requisite: Successful completion of Spanish I or placement test results

This intermediate course expands upon the foundations of Spanish 1 continuing the same communicative approach to further develop skills in listening, understanding, speaking, reading and writing of the Spanish language. Activities are used to expand interpersonal communication as well as interpretation and presentation skills. The course includes cultural experiences that allow students to expand their understanding of the Spanish culture through its products and practices.

Course Title: Spanish for Heritage & Native Speakers
Course Number: 06_2002_999
Grade Level: 9
Credits: 5
Pre-Requisite: Placement test results

This course is designed for incoming freshmen students for whom Spanish is a native or heritage language. This course provides those students with the opportunity to expand their existing proficiency and to develop their reading and writing skills. Orthography, diacritics, and vocabulary development are stressed. Emphasis will be placed on usage appropriate to academic and professional settings. This course will provide students with the opportunity to improve strategic speaking, reading, and writing skills, to master grammar points of particular concern to native and heritage speakers, and to enhance their understanding and appreciation of Hispanic cultures and sociopolitical realities. The course also aims to strengthen students' sociolinguistic awareness and critical thinking skills. Students will be expected to enter Spanish 3 upon successful completion of this course.

Course Title: Spanish III
Course Number: 06_3001_999
Grade Level: as determined by UCVTS Placement Test
Credits: 5

Pre-Requisite: Successful completion of Spanish II or placement test results

This course is designed to continue the communicative approach and objectives of levels I and II, as well as provide for a more in depth study of the structure of the Spanish language. Students will become more proficient in interpersonal communication, interpretation and presentation skills. Cultural experiences are expanded to include more reading of authentic realia.

Course Title: Spanish IV **Course Number**: 06_5001_999
Grade Level: as determined by UCVTS Placement Test **Credits**: 5
Pre-Requisite: Successful completion of Spanish III

This course is designed to provide the student with a more in depth study of the Spanish language and culture. It will continue the same communicative approach but will focus on the more difficult nuances of the language and will include more reading than previous levels. Cultural experiences will be expanded to include a more in-depth study of the history, literature, art, economics and social issues of the culture. Students will use the language to make connections on topics they have learned in other core content areas. Instruction, as well as student participation, is exclusively in the Spanish language.

Course Title: AP Spanish Language & Culture **Course Number**: 06_5001_999
Grade Level: as determined by UCVTS Placement Test **Credits**: 5
Pre-Requisite: 85 or higher recommended in Spanish IV

The AP Spanish Language course is a rigorous course of study that is equivalent to a college level course. The fundamental objective of this course is for students to achieve a high level of capability in speaking, writing, reading, and listening. Since language and culture are inextricably bound together, cultural understanding should be developed along with these four language skills. Through the year different methods and strategies will be used to practice and develop the four skills. This class is conducted entirely in Spanish and students are encouraged to participate in all classroom activities using Spanish. Students will be exposed to all kinds of materials that will help them to reinforce and expand their knowledge of Spanish. This course offers a large variety of performance options such as dialogues, debates, presentations, and interviews in which students will demonstrate their abilities to communicate proficiently on topics of personal, academic or social nature.

Course Title: AP Spanish Literature and Culture **Course Number**: 06_5002_999
Grade Level: as determined by UCVTS Placement Test **Credits**: 5
Pre-Requisite: 85 or higher recommended in Spanish IV

The AP Spanish Literature and Culture course uses a thematic approach to introduce students to representative texts (short stories, novels, poetry, and essays) from Peninsular Spanish, Latin American, and United States Hispanic literature. Students continue to develop proficiencies across the full range of the modes of communication (interpersonal, presentational, and interpretive), honing their critical reading and analytical writing skills. Literature is examined within the context of its time and place, as students reflect on the many voices and cultures present in the required readings. The course also includes a strong focus on cultural connections and comparisons, including exploration of various media (e.g., art, film, articles, and literary criticism).

Course Title: Linguistics **Course Number**: 06_5003_999
Grade Level: 11, 12 **Credits**: 5
Core Requirement: This course may *not* be used to satisfy the MHS third year World Language requirement and is offered as an elective opportunity only.

The knowledge of a World Language is a universal tool that opens gateways to human understanding and

presents a new approach to dealing with the everyday realities of life. Linguistics is at the base of every World Language. Student will be introduced to the history of a language, the core of a language, the people who speak different languages and the future of language to enhance those skills honed in World Language studies. Language study enhances understandings in other disciplines: history, geography, sociology, literature, and the arts. Linguistics takes these features, recognizes the connection between each branch of learning and language, and analyzes them further. Linguistics is the bridge between language and culture. An effective World Language program recognizes individual differences in learning patterns and abilities and offers options to students with diverse needs and interests. The study of Linguistics will harness these differences. Students will use their knowledge from previous language courses to build upon different skills. They will reflect on their own language experiences. They will consider the many influences of languages. They will appreciate the entire language-learning experience.

HEALTH AND PHYSICAL EDUCATION

Students will take four years of Health and Fitness. Each year, they will take three marking periods of fitness and one marking period of health education.

Course Title: Fitness I - IV
Course Number: 07_1001_999; 07_2001_999; 07_3001_999; 07_4001_999
Grade Level: 9, 10, 11, 12 **Credits**: 3.75

The physical fitness course is designed to assist the student in attaining optimal wellness physically, mentally, emotionally, and socially. The program offers activities, which incorporate the give components of fitness: cardiovascular endurance, muscle strength, muscle endurance, flexibility, and body composition. The course is designed to educate the mind as well as the body with an emphasis on lifetime fitness.

Course Title: Health I **Course Number**: 07_1002_999
Grade Level: 9 **Credits**: 1.25

The freshmen health education course is designed to assist the student in attaining optimal wellness physically, mentally, emotionally, and socially. Through discussion and research, the students will become better prepared to make responsible, health-enhancing decisions, communicate effectively, and adopt health practices to reduce preventable health problems for themselves, their families, and their communities. Topics will include nutrition, weight management and eating disorders, human sexuality, conception and birth, contraception, and STDs

Course Title: Health II **Course Number**: 07_2002_999
Grade Level: 10 **Credits**: 1.25
Pre-Requisite: Successful completion of Health I

The sophomore health education course is designed to expose the students to character education. Character education consists of the six pillars of character: trust, respect, responsibility, caring, fairness and citizenship. This will help the students make better choices and decisions in regards to health and personal well-being. Topics covered include healthy relationships, self-esteem and tolerance. Video clips, short reading excerpts and role playing will be used in the class room along with class discussions.

Course Title: Health III **Course Number**: 07_3002_999
Grade Level: 11 **Credits**: 1.25
Pre-Requisite: Successful completion of Health II

The Junior Health course consists of CPR and First Aid training and certification. It is designed to prepare students to recognize signs and symptoms of cardiac and respiratory distress and provide care for the victims of choking, respiratory arrest and cardiac arrest. It will enable students to provide care for victims suffering from severe bleeding, musculoskeletal injuries, sudden illness, soft tissue injuries and poisoning. Principles of

anatomy and physiology are integrated to enhance students' understanding of how the human body systems interact and depend on each other. Knowledge of how the human body functions normally will help students identify appropriate care to give to an ill or injured person.

Course Title: Health IV
Course Number: 07_4002_999
Grade Level: 12
Credits: 1.25
Pre-Requisite: Successful completion of Health III

Senior Health will consist of substance use/abuse, mental illness, disabilities and health care. Students will be responsible for explaining the importance of mental and emotional health and determining the emotional, social and financial impact of mental illness on the family, community and state. Students will also determine the effects of accessibility and affordability of healthcare on family, community and the global health. Also, responsible choices will be emphasized as well as a review of sex education.

INTERDISCIPLINARY STUDIES

Course Title: Financial Literacy
Course Number: 08_1001_999
Grade Level: 10
Credits: 5
Required Sophomore Course

The Financial Literacy online course is designed to meet the high school graduation requirement for personal financial literacy as set forth by the Department of Education for the State of New Jersey. Aside from mandated standards, however, financial education is critically important for our young adults. This course will focus on teaching students the skills they need to reach financial independence, maximize their net worth, and maintain a strong credit score. Credit card usage, appropriate debt, banking services, investments, budgeting, insurance, and prevention of identity theft will be explored and discussed. Students will be engaged in learning about finances in an online environment under the direction and supervision of a teacher. The online approach incorporates a variety of techniques and interactive experiences to accommodate different learning styles. Students will have the opportunity to choose, at their own discretion, to explore more deeply into a topic, repeat a lesson, or seek personal attention from the teacher. Providing students with a sound, practical financial education will benefit them as they venture to college and work where they will be faced with managing money on their own.

Course Title: Dance Appreciation
Course Number: 08_1002_999
Grade Level: 10
Credits: 5
Required Sophomore Course

The Dance Appreciation mini-course is designed to provide UCVTS students with an appreciation of world dance forms, social dance, musical theatre, and more specifically how and why dances are created. The course has a total of 10 classes. Students have 6 online classes which delve into basic terms used in choreography for in all dance forms. The online classes will also examine ritual dance and folk dance in several cultures, and include contemporary social dance. Students are given an opportunity to share any part dance has taken in their lives. Students also have 4 in-person classes which give them the tools to create choreography in any style of their choosing. Students will break into groups to create a short dance, 12 counts of 8, which will be performed in front of their class. All classes both online and practical are aligned with the NJ Core Curriculum Content Standards in Performing Arts-Dance, to fulfill the State Requirement in Visual and Performing Arts.

Course Title: Film & Genre Studies
Course Number: 08_1003_999
Grade Level: 11, 12
Credits: 5

Film & Genre is designed for the student as a comprehensive guide to studying the language of film as a visual art form. The student examines and explores cinema through a chronological/historical approach, the introduction of terminology and techniques, the study of genres, selected classics (from the silent era to the

digital age), themes, and critical analysis of film in order to attain visual literacy. Coursework focuses on acquiring and honing technical knowledge as well as developing an appreciation of the art by exploring objective and subjective aesthetics, experiences, emotions, and alternative worlds created by filmmakers. Film and Genre is not a filmmaking class per se – rather a critical exploration of visual text. However, the film student does have the opportunity to elect to create, write, direct, and produce a film, as an end-of-the-year performance assessment.

The availability of the course is not guaranteed. Please keep this in mind when making course selections.

Course Title: Introduction to Humanities **Course Number**: 08_1004_999
Grade Level: 11, 12 **Credits**: 5

The Humanities are those branches of learning concerned with human thought and relations. These branches incorporate the study of the central expressions of human values: fine arts, literature, philosophy, history, culture, and the social sciences. Knowledge of the humanities enables students to understand the present and the future from a historical perspective. Students will also develop skills in critical reading and interpretation, analytical thinking, researching, and writing. This will be accomplished by initiating activities that promote a variety of learning styles, interdisciplinary problem solving, cooperative learning, public speaking, and technological application. These insights and skills provide a foundation for careers in many different professions and for productive and rewarding lives as educated citizens.

The availability of the course is not guaranteed. Please keep this in mind when making course selections.

Course Title: Communications Media **Course Number**: 08_1005_999
Grade Level: 11, 12 **Credits**: 5

This course will allow students to become acquainted with contemporary media and its effects on their society. They will be given an opportunity to develop the skills and command the information necessary to function in a high-profile job market. Today, journalists are "in the field" researching and capturing illustrative images. The news media is recreating itself into a features-driven service, and storytelling is valued as highly as straight reporting. News stories are no longer destined only for the metropolitan news editors and television/cable news anchors, but for newswires, blogs, and the Internet at large. By offering a challenging and innovative course such as Communications Media, the students also are learning the skills necessary to work behind and beyond a variety of media outlets. One of the most important real-life skills that the Communications Media class enforces is the need for teamwork.

The availability of the course is not guaranteed. Please keep this in mind when making course selections.