



The High School of Science and Technology

Course Selection Catalog

2009-2011



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ENGLISH LANGUAGE ARTS

Learning Expectation Practiced is Students as Readers and Writers.

Students and their parents, in consultation with their present English teacher and guidance counselor should consider which required English courses are most appropriate for their needs. All students must take four years of English.

ENGLISH 9 (1 Semester=1 credit) Prerequisite: ENGLISH 8

This college preparatory course teaches the necessary skills for critical thinking, reading, writing, editing, and speaking. The reading selections include both informational texts and literature of all genres. Students learn to identify and analyze the elements of nonfiction, fiction, drama, and poetry and how each form is used by the author to accomplish his/her purpose. Writing assignments are designed to develop confident, effective, writers. Students will learn to write well supported and logically constructed essays, including a literary analysis, a persuasive essay, and open response answers. Minimum required readings are: Shakespeare's *Romeo & Juliet*, Steinbeck's *Of Mice and Men*, a short story unit, and a unit with poetry and nonfiction selections from the Harlem Renaissance, as well as, Richard Wright's *Black Boy*. A research project is also part of the curriculum for this course.

ENGLISH 9H (1 Semester=1 credit) Prerequisite: Recommendation of Grade 8 English teacher with at least a "B" in English 8

This challenging course is for students who have an interest in and aptitude for the subject and would welcome a rigorous English course. The course teaches literature and language and focuses on the development of critical, analytical, and creative thinking skills. Students learn to identify and analyze the characteristics of nonfiction, fiction, drama, and poetry and how each form is used by the author to accomplish his/her purpose. The reading selections include both informational texts and literature of all genres. Writing assignments are designed to develop confident, effective, writers. Students will learn to write well supported and logically constructed essays, including a literary analysis, a persuasive essay, and open response answers. Minimum required readings are: Shakespeare's *Romeo & Juliet*, Steinbeck's *Of Mice and Men*, a short story unit, and a unit with poetry and nonfiction selections from the Harlem Renaissance. A research project or paper is also part of the curriculum for this course.

ENGLISH 10 (1 Semester =1 credit) Prerequisite: ENGLISH 9

This college preparatory course teaches the necessary skills for critical thinking, reading, writing, editing, and speaking. Writing assignments are designed to develop confident, effective writers. Students will further develop their writing skills with emphasis on a fully developed, analytical essay employing textual evidence and focusing on correct use of literary references. Open response answers reflecting interpretation of a variety of literary genre is emphasized. Selections might include Shakespeare's *Macbeth*, Bradbury's *Fahrenheit 451*, *Night*, by Elie Wiesel, and a range of poetry. A researched essay with MLA documentation is also required

ENGLISH 10 H (1 Semester=1 credit) Prerequisite: Recommendation of Grade 9 English teacher with at least a "B" in English 9 or English 9H

This challenging course is for students who have an interest in and aptitude for the subject and would welcome a rigorous English course. Writing assignments are designed to develop confident, effective writers. Students will further develop their writing skills with emphasis on the essay with textual evidence, a literary analysis with a focus on the individual elements of poetry and drama, and open response answers interpreting all literary genre. The course includes literature of all genres. Students are taught how the writer's selection of genre shapes the meaning. Minimum required reading selections are: Sophocles' *Antigone*, Wiesel's *Night*, Bradbury's *Fahrenheit 451*, Salinger's *Catcher in the Rye*, Shakespeare's *Macbeth* or *A Midsummer Night's Dream*, and a poetry unit. A research essay with MLA documentation is also required.

ENGLISH 11- (1 Semester=1 credit) Prerequisite: ENGLISH 10

This college preparatory course teaches the necessary skills for critical thinking, reading, writing, editing, and speaking. The development of writing skills focuses on grammar, editing, and revision, and involves the expansion and development of ideas and content into essays written for various purposes and audiences, and a literary analysis, focusing on the novel. Minimum required reading selections are: *The Declaration of Independence*, *King's Letter from Birmingham Jail*, Miller's *The Crucible*, Hurston's *Their Eyes were Watching God*, or Fitzgerald's *The Great Gatsby*, and selected poetry from Emily Dickinson, Walt Whitman, and Robert Frost. A **full** research paper is also required.

ENGLISH 11 AP-English Language and Composition (1 Semester=1 credit) Prerequisite: Recommendation of Grade 10 English teacher.

This course is specifically designed to train students to become skilled readers of prose written in a variety of periods, disciplines, and rhetorical contexts. The course will give students the practice and helpful criticism necessary to make them flexible writers who can compose in a variety of modes and for a variety of purposes. This course is for the strong, motivated student who wishes to complete college-level studies while still in high school (AP Course Catalog Description). Students should already have an excellent command of standard English conventions. Minimum required reading selections are: *The Declaration of Independence*, *King's Letter from Birmingham Jail*, Miller's *The Crucible*, Hurston's *Their Eyes were Watching God*, or Fitzgerald's *The Great Gatsby*, and selected poetry from Emily Dickinson, Walt Whitman, and Robert Frost. A full research paper is also required. It is expected that the student will take the English Language and Composition AP Exam.

ENGLISH 12-(1 Semester=1 credit) Prerequisite: ENGLISH 11

This college preparatory course teaches the skills necessary for critical thinking, reading, writing, editing, and speaking. Students will further develop their writing skills to prepare for college writing. A personal essay; literary analysis, focusing on nonfiction and the novel; and a full research paper is required. Minimum reading requirements include: Shakespeare's *Othello* or *Hamlet*, Golding's *Lord of the Flies*, Hardy's *The Mayor of Casterbridge*, Orwell's *Animal Farm*, or Solzhenitsyn's *A Day in the Life of Ivan Denisovich*. (Two novels must be read.) A nonfiction selection, Wiesel's *Night* and poetry selections are also required.

ENGLISH 12AP-English Literature and Composition (1 Semester=1 credit) Prerequisite: Recommendation of Grade 11 English teacher with an "A" in English 11 or English 11H

This course is specifically designed to train students to become skilled readers of prose written in a variety of periods, disciplines, and rhetorical contexts. The course will give students the practice and helpful criticism necessary to make them flexible writers who can compose in a variety of modes and for a variety of purposes. This course is for the strong, motivated student who wishes to complete college-level studies while still in high school (AP Course Catalog Description). Students will further develop their writing skills to prepare for college writing. A personal essay; literary analysis, focusing on nonfiction and the novel; and a full research paper is required. Minimum reading requirements are: Shakespeare's *Othello or Hamlet*, Golding's *Lord of the Flies*, Bronte's *Jane Eyre*, O'Brien's *In the Lake of the Woods*, short fiction, and Perrine's *Language: Structure, Sound and Senses*. It is expected that the student will take the English Literature AP Exam.

YEARBOOK (Yr = 2 credits) Prerequisite: recommendation by English teacher.

Students become involved in all aspects of production of the yearbook: writing, editing, layout, design, organization, photography and leadership. Students help produce and edit the High School of Science and Technology's yearbook. Course heavily focuses on student leadership, strengthening photojournalism skills and teaching them to others. Some after school and extra time commitments are necessary. Students are ultimately responsible for the final production and editing of the High School of Science and Technology's yearbook.

FOREIGN LANGUAGE

The Learning Expectation is Students as Writers and Critical Thinkers

Instruction for Chinese, French, Spanish, and Italian utilizes a multi-media approach, integrating the use of audio, video, computer technology and the Internet, both in the classroom and in the multi-media laboratories. This method enhances the student's ability to develop his/her language skills (listening, speaking, reading, and writing) and promotes an awareness and understanding of other cultures.

Eighth grade students may continue to study their present foreign language or they may select another foreign language to study for a minimum of 2 years. For eighth graders who wish to continue their study of the same foreign language, placement will be made on the following basis: students who receive a final grade of C- or better will advance to level II. Students who receive a [mal grade less than C- will repeat level I.

It is highly recommended that a student earn at least a C to go to the next level. Students who earn a D or C- may repeat a course for no credit. A course repeated for no credit will not count as part of graduation requirements.

CHINESE I (1 semester = 1 credit)

Chinese 1 course emphasizes listening and speaking skills, within the framework of its grammatical structure. Students learn the inflections of the language, the Chinese characters and acquire knowledge about the culture. Technology is used to enhance learning and to aim both spoken and written Chinese language.

CHINESE II (1 year = 1 credit)

This second course in Chinese continues to develop the skills introduced in Chinese 1 within an ever-increasing framework of grammatical structure. Computer technology is used to supplement learning and reading and writing skills are developed to a greater extent. Chinese culture is also an important aspect of the course.

CHINESE II HONORS (1 semester = 1 credit) Prerequisite: Recommendations of the Chinese instructor and Foreign Language Department Head are required

An intensive course in Chinese 2 for honors level students. Department permission required to enroll. This honors course for highly motivated students covers all of the material taught in Chinese 2 but utilizes more challenging examples of each concept. Students will begin to experience the fine points and subtleties of written and oral expression. The volume and specificity of the work required will establish a solid foundation for advanced study.

CHINESE III (1 semester = 1 credit)

Students in Chinese 3 will continue to develop the skills of listening, speaking, reading, and writing to a more advanced degree. They will refine their writing skills using a Chinese work-processing program. An in-depth understanding of Chinese culture is an important aspect of this course.

CHINESE III HONORS (1 semester = 1 credit) Prerequisite: Recommendations of the Chinese instructor and Foreign Language Department Head are required

An intensive course in Chinese 3 for honors level students. Department permission required to enroll. This honors course includes an in-depth study of grammar with greater emphasis on the development of listening and speaking skills. Discussion materials and written work will be used as tools for expressing ideas in Chinese. Reading material will provide the base for oral expression.

CHINESE IV (1 semester = 1 credit)

This course is designed for students who want to continue their sequential study of Chinese. The course will offer a variety of interesting topics such as literary topics, current events, and popular literature that will serve as a basis for oral discussion and analysis. Computer software will be used to refine students' reading and writing skills.

CHINESE IV HONORS (1 year = 1 credit) Prerequisite: Recommendations of the Chinese instructor and Foreign Language Department Head are required

An intensive course in Chinese 4 for honors level students. Department permission required to enroll. This honors course provides intensive work in the language skill areas of listening, speaking, reading, and writing. Students read full-length selections and shorter works which are representative of the Chinese-speaking world. Writing and speaking activities flow from the reading and class discussions. Grammar review is incorporated as needed for skill development. Students will speak Chinese in class and use a variety of recorded materials for listening practice.

CHINESE V (1 semester = 1 credit)

This course is designed for students to continue to develop their sequential language skills of listening, speaking, reading and writing. In addition, students will enrich their study of Chinese culture. Students will work on a variety of topics, using both current materials and traditional literature. Student will use computer technology to integrate their language experience.

CHINESE V HONORS (1 semester = 1 credit) Prerequisite: Recommendations of Chinese instructor and Foreign Language Department Head are required

This course is designed for students who want to continue to develop their sequential language skills of listening, speaking, reading and writing. To enrich the study of culture, the students will work with a variety of interesting topics, current materials, traditional literature, and popular literature retrieved from the Internet and newspapers for oral discussion and analysis. The students will also use computer technology such as graphic arts, Chinese work processing, and the Internet to integrate their language experiences. For honors level students.

CHINESE V ADVANCED PLACEMENT (Yr = 2 credits) Prerequisite: Approval of Foreign Language Dept. Head

A fifth level course, the Advanced Placement Program in Chinese Language, is designed for highly motivated and academically talented students who are willing to commit themselves to college level course demanding considerable time and effort as well as superior listening, speaking, reading and writing skill. A research project may be required. The course of study is established by the Advanced Placement Program of the College Entrance Examination Board.

CHINESE VI LITERATURE AND CULTURE (1 semester = 1 credit) Prerequisite: Chinese 5 and approval of instructor and department head

This advanced Chinese course is literature-based with an emphasis on culture. Students will study modern Chinese literature as well as classic Chinese literature. To enrich the study of culture, students will work on a variety of interesting topics with source material received from the Internet and Chinese language newspapers.

FRENCH I (1 semester = 1 credit)

This course of French language is designed to develop proficiency in listening, speaking, reading and writing. Audiovisuals and technology are used to reinforce and facilitate the learning process of the language, and the cultures and customs of France and diverse francophone nations.

FRENCH II (1 semester = 1 credit)

French II is a continuing course for those who have successfully completed French I. The listening/speaking skills are again emphasized, and there is greater opportunity to strengthen the reading and writing skills and to increase the vocabulary. The texts, workbook, tapes, and related audio-visual aids are used to enhance the learning process along with the use of computer technology and the Internet.

FRENCH II HONORS (1 semester = 1 credit) Prerequisite: Recommendations of the French instructor and Foreign Language Department Head are required

This honors course for highly motivated students covers all of the material taught in French II but utilizes more challenging examples of each concept. Student will start to experience the fine points and subtleties of written and oral expression. The volume and specificity of the work required will establish a solid foundation for advanced study.

FRENCH III (1 semester = 1 credit)

French III is designed for students who have successfully completed French 2. Students continue to develop the skills of listening, speaking, reading, and writing at a more advanced level. French is used almost exclusively at this level. Students use text, workbook, and computer software and tapes. There is greater emphasis on the culture and literature of French-speaking countries. Students will use authentic French materials obtained from the Internet.

FRENCH III HONORS (1 semester = 1 credit) Prerequisite: Recommendations of the French instructor and the Foreign Language Department Head are required

This honors course includes an in-depth study of grammar with greater emphasis on the development of listening and speaking skills. Discussion materials and written work will be used as tools for expressing ideas in French. Reading material will provide the base for oral expression.

FRENCH IV (1 semester = 1 credit)

French 4 is for students who have successfully completed French 3. The course emphasizes correct usage through grammatical review and vocabulary development. A range of French literature will serve as basis for communication. Since the goal of the course is to develop the language skills of listening, speaking, reading, and writing, French will be used extensively at this level.

FRENCH IV HONORS (1 semester = 1 credit) Prerequisite: Recommendations of the French instructor and the Foreign Language Department Head are required

This honors course provides intensive work in the language skill areas of listening, speaking, reading, and writing. Students read full-length selections and shorter works which are representative of the French-speaking world. Writing and speaking activities flow from the reading and class discussions. Grammar review is incorporated as needed for skill development. Students will speak French in class and use a variety of recorded materials for listening practice.

FRENCH V CP (1 semester = 1 credit)

This course is designed for students to continue to develop their sequential language skills of listening, speaking, reading and writing. In addition, students will enrich their study of culture. Students will work on a variety of interesting topics, using current materials and traditional literature. Students will use computer technology to integrate their language experience.

FRENCH V HONORS (1 semester = 1 credit) Prerequisite: Recommendations of the French instructor and the Foreign Language Department Head are required

This fifth level course reviews the elements of structure with intensive practice in the listening, speaking, reading, and writing skills. The reading materials, including articles from current newspapers and magazines and the Internet, serve as a basis of conversation rather than as basis of literary analysis. Successful completion of French 4H is required.

FRENCH ADVANCED PLACEMENT (1 semester = 1 credit) Prerequisite: Approval of the Foreign Language Department Head and the French Teacher are required

This fifth level course, the Advanced Placement Program in French Language, is designed for highly motivated and committed students who are willing to commit themselves to a college level course demanding considerable time and effort. A research project may be required. Students prepare to take the Advanced Placement French Language Examination administered by the College Entrance Board.

FRENCH VI LITERATURE AND CULTURE (1 semester= 1 credit) Prerequisite: French V and approval of instructor and department head

This advanced French course is literature-based with an emphasis on culture and society. Students will continue to study francophone literature through the supplemental readings from both the Internet and diverse texts. The presentational mode of communication, accentuating speaking, pronunciation, and connections to other disciplines will be highlighted.

SPANISH I (1 semester = 1 credit)

The major objective of the course is to develop proficiency in the speaking, reading, writing and listening comprehension skills of the students on a continuing basis. The culture and customs of the various Hispanic countries are also introduced. Native speakers should not enroll in this class. Please refer to the course offering for native speakers.

SPANISH II (1 semester = 1 credit)

In Spanish II, students who successfully completed Spanish 1 continue to develop their listening and speaking skills with greater opportunity to strengthen their reading and writing skills. During the entire year, the teacher includes daily warm-up and review activities. Students will utilize computer technology in the classroom and in the lab.

SPANISH II HONORS (1 semester = 1 credit) Prerequisite: The recommendation of the Spanish 1 teacher, the approval of the Chair of the Department of Foreign Language, a passing grade in Spanish 1 of B+ and 95% attendance rate to school

This course has been designed for students who want to become fluent in Spanish. Great emphasis on listening and speaking skills and in depth study of the grammar is an essential part of this course. Technology and audiovisuals are used to reinforce listening and speaking Spanish proficiency. Authentic materials will provide the base for the analysis and discussion of diverse topics related to the Spanish speaking world.

SPANISH III (1 semester = 1 credit)

In Spanish 3, students who successfully completed Spanish 2 continue to develop the skills of listening comprehension, speaking, reading, and writing at a more advanced level. Spanish is used extensively at this level. The students learn more about Spanish-speaking countries and read "lectures" which deal with Hispanic traditions and life styles.

SPANISH III HONORS (1 semester = 1 credit) Prerequisite: The recommendation of the Spanish 2 teacher, the approval of the Chair of the Department of Foreign Language, a passing grade in Spanish 2 of B+ and 95% attendance rate to school

This course of Spanish has been designed for academically talented students, who want to become proficient in Spanish. A great emphasis is given to the four areas of communication: listening, speaking, reading and writing. Technology is used to supplement an in depth study of the grammar, and to assess verbal and written communication. Emphasis is given to the analysis of authentic reading materials and cultural topics related to the Spanish speaking world. Spanish language is used almost exclusively at this level.

SPANISH IV (1 semester = 1 credit)

Students in this course have successfully completed Spanish 3. The course consists of the following: listening and speaking practice, the culture of major Spanish-speaking areas, reading of various Hispanic writers and grammar review. The four language skills of listening, speaking, reading, and writing are evaluated regularly.

SPANISH IV HONORS (1 semester = 1 credit)

Prerequisite: The recommendation of the Spanish 3 teacher, the approval of the Chair of the Department of Foreign Language, a passing grade in Spanish 3 of B+ and 95% attendance rate to school

This course of Spanish has been designed for highly motivated and academically successful students. Spanish 4 Honors is a literature based course that emphasizes the analysis of diverse contemporary Spanish literature pieces, on a variety of topics. There is greater emphasis on critical thinking skills, necessary for the analysis of cultural aspects and language variations in Hispanic countries. Students are required to write an essay twice a month. Spanish language is used exclusively at this level.

SPANISH V (1 semester = 1 credit)

This course is designed for students to continue to develop their sequential language skills of listening, speaking, reading and writing. In addition, students will enrich their study of culture. Students will work on a variety of interesting topics, using current materials and traditional literature. Students will use computer technology to integrate their language experience.

SPANISH V HONORS (1 semester = 1 credit) Prerequisite: Successful completion of Spanish4H is required, along with approval of the Spanish instructor and Foreign Language Department Head

The Spanish language is used exclusively at this honors level. Advanced reading assignments, both literary and cultural, serve as the basis for oral and written activities. This course brings together the student's total language experience. Throughout the course, equal emphasis and time is given to each of the following areas: listening, speaking, reading, and writing.

SPANISH V ADVANCED PLACEMENT (1 semester = 1 credit) Prerequisite: The recommendation of the Spanish 4 teacher, the approval of the Chair of the Department of Foreign Language, a passing grade in Spanish 4 of B+ and a minimum of a 95% attendance rate to school

The AP Spanish V Course is designed to prepare students for a successful completion of the Advanced Placement Spanish Language Test. Advanced organizational and analytical strategies are taught. An array of authentic reading materials and audio visual resources is used to develop language proficiency. Emphasis is placed on the five goal areas outlined in the Standards for Foreign Language: Communication, Connections, Comparisons, Community and Cultures. Evaluation of the student's progress will include the three communicative modes: Interpersonal (interactive), Interpretative (receptive) and Presentational (productive). This course is meant to be equivalent to a second year Spanish language college course. Classes will be conducted completely in Spanish. All students in this course are expected to take the AP test.

AP Spanish Language students must have a strong background in Spanish, as evidence by grades received in previous Spanish courses. They must have a high level of motivation and interest in improving all four areas of communication (speaking, listening, reading and writing). They must devote the time required to complete daily assignments and achieve maximum success in the AP exam

SPANISH VI LITERATURE AND CULTURE (1 semester = 1 credit) Prerequisite: Spanish 5 and approval of instructor and department head

This advanced Spanish course is literature-based with an emphasis on culture and society. Students will continue to study Spanish literature through the supplemental readings from both the Internet and diverse texts. The presentational mode of communication, accentuating speaking, pronunciation and connections to other disciplines will be highlighted.

SPANISH FOR NATIVE SPEAKERS I (1 semester = 1 credit)

This course is designed for students who are fairly fluent orally in Spanish but lack reading and writing skills. Reading and writing skills are developed through a variety of activities such as dictation, simple directed compositions, letter writing, grammar exercises and simple projects.

SPANISH FOR NATIVE SPEAKERS II (1 semester = 1 credit)

Continued emphasis will be placed on the mastery of grammatical structures and focus on the writing process. An anthology of short stories and essays surveying literary themes, important grammar points and vocabulary building will be used. There will also be discussions and composition assignments dealing with culture (relationships, mannerisms and traditions of the Hispanic world). Students are also required to do several projects during the year demonstrating competence in the language.

SPANISH FOR NATIVE SPEAKERS III (1 semester = 1 credit)

Students selecting this advanced level course will be participating in a program of literature, culture, writing, advanced speaking activities and major project (comparable to a research paper) as part of the course. Classics of the Hispanic world will be read as well as selections from literary genres.

SPANISH FOR NATIVE SPEAKERS III HONORS (1 semester = 1 credit)

Prerequisite: Recommendations of the Spanish instructor and the Foreign Language Department Head are required

This honors course includes an in-depth study of grammar with greater emphasis on the development of reading and writing skills. The reading of materials of a more difficult nature will provide the base for oral and written expression.

SPANISH FOR NATIVE SPEAKERS IV (1 semester = 1 credit)

Course work at this level is more intensive and gives equal weight to listening, speaking, reading, and writing. Students will continue to advance and refine their language and thinking skills while increasing their understanding of Hispanic culture and civilization. More emphasis will be placed on research activities; students will access resources in the classroom, the school library and the multi-media laboratories. Students in this course may elect to take the Advanced Placement exam in Spanish Language administered by the College Board.

SPANISH FOR NATIVE SPEAKERS IV HONORS (1 semester = 1 credit)

Prerequisite: Recommendations of the Spanish instructor and the Foreign Language Department Head are required

This honors course provides intensive work on language skills areas: listening, speaking, reading, and writing. Students read full-length selections and shorter works which are representative of the Spanish-speaking world. Writing and speaking activities at an advanced level flow from the reading and class discussions. Students will review grammar, as it is necessary for skill development.

HEALTH AND PHYSICAL EDUCATION

The Learning Expectation is Students as Critical Thinkers

Health is required for one 1/2 semester

HEALTH EDUCATION 1 (1/2 semester = .5 credit)

This required course is designed to meet local and state standards for health education. This course addresses the physical, mental, emotional and social dimensions of health. It is designed to motivate and assist students to maintain and improve their health, prevent disease, and reduce health related risk behaviors. Students will demonstrate health-related knowledge, attitudes and skills. The comprehensive curriculum includes: consumer health, family life, substance use and abuse, growth and development, nutrition, safety and injury prevention, reproduction and sexuality, disease and disorders, violence prevention, personal hygiene, personal/mental health, physical activity and fitness and environmental health.

PHYSICAL EDUCATION

Physical Education is required 1/2 semester each of the four years.

PHYSICAL EDUCATION 9 (1/2 semester = .5 credit) Prerequisite: none

The model and design of the ninth grade program is very different from the Elementary and Middle level. Modules are conceived to allow students the time, practice, and opportunity needed to become competent in the core activity module. The contents within a module are sequential and progressive. Students have the opportunity to master specific sport skills. For the first time, students begin to play with the "real" rules and are held accountable for the knowledge of those rules.

PHYSICAL EDUCATION 10 (1/2 semester = .5 credit) Prerequisite: none

The program includes units of instruction that will develop an interest and desire to participate in lifetime physical activities. The students refine skillful and effective movements through participation in the individual and team sport units. Students are introduced to the decision-making process offered to the grade 11 students.

PHYSICAL EDUCATION 11(1/2 semester = .5 credit) Prerequisite: none

Lifetime and team sports are emphasized throughout the Grade 11 program. Activities are designed which contribute to the development of the individual through physical activity. Emphasis is placed on development, growth and behavior needs of each student.

PHYSICAL EDUCATION 12 (1/2 semester = .5 credit) Prerequisite: none

The grade 12 program attempts to provide students exposure to a variety of lifetime and team sports. The intention is to encourage and assist each student in developing an interest and desire to participate in lifetime activities.

MATHEMATICS

The Learning Expectations is Students as Problem Solvers

ALGEBRA I (1 semester = 1 credit) Prerequisite: none

Students will investigate and communicate mathematically using the concepts of algebra. Emphasis will be placed on conceptual understanding and algebraic methods as a problem-solving tool. Students will explore: number systems including rational and irrational; properties, relations and functions; and equations, inequalities and simple matrices. Students will develop and defend conclusions, explore introductory concepts of probability and statistics, and make connections between algebra and other fields of mathematics using real world problems. In addition, students will study the use of tables and graphs to understand mathematical situations. Instruction and investigations will include the use of resources including graphing calculators and software.

ALGEBRA I SUPPORT (1 semester = 1 credit)

This course is designed for students who are performing below grade level in math an attempt to accelerate their progress. Students will investigate and communicate mathematically using the concepts of algebra. Emphasis will be placed on understanding and algebraic methods as a problem-solving tool. Students will explore number system including rational and irrational; properties, relations and functions; and equations, inequalities and simple matrices. Students will develop and defend conclusions, explore introductory concepts of probability and statistics, and make connections between algebra and other fields of mathematics using real world problems. In addition, students will study the use of tables and graphs to understand mathematical situations. Instruction and investigations will include the use of resources including graphing calculators and software.

ALGEBRA I H (1 semester = 1 credit) Prerequisite: a grade of B or better in Pre-Algebra and recommendation of previous mathematics teacher

Students will investigate and communicate mathematically using the concepts of algebra. Emphasis will be placed on conceptual understanding and algebraic methods as a problem-solving tool. Students will explore: number systems including rational and irrational; properties, relations and functions; equations, inequalities and simple matrices. Students will develop and defend conclusions, explore introductory concepts of probability and statistics, and make connections between algebra and other fields of mathematics using real world problems. In addition, students will study the use of tables and graphs to understand mathematical situations. Instruction and investigations will include the use of resources including graphing calculators and software. Students in Algebra I Honors may cover the material at a more rapid rate and the course will include supplemental themes and projects.

GEOMETRY (1 semester = 1 credit) Prerequisite: Completion of Algebra I

Students will investigate and communicate mathematically using the concepts of geometry. Emphasis will be placed on integrating those topics with other fields of mathematics and real world problems. Students will represent and solve problem situations using geometric models, apply properties of figures, and classify figures in terms of congruence and similarity. Students will deduce properties and relationships between figures from given assumptions and defend those assumptions. Instruction and investigations will include the use of resources including graphing calculators and software.

GEOMETRY H (1 semester = 1 credit) Prerequisite: a grade of B or better in Algebra I and recommendation of previous mathematics teacher

Students will investigate and communicate mathematically using the concepts of geometry. Emphasis will be placed on integrating those topics with other fields of mathematics and real world problems. Students will represent and solve problem situations using geometric models, apply properties of figures, and classify figures in terms of congruence and similarity. Students will deduce properties and relationships between figures from given assumptions and defend those assumptions. Instruction and investigations will include the use of resources including graphing calculators and software. Students in Geometry Honors may cover the material at a more rapid rate and the course will include supplemental themes and projects.

ALGEBRA II (1 semester = 1 credit) Prerequisite: successful completion of Algebra I and geometry

Students will investigate and communicate mathematically using the concepts of advanced algebra. Students will investigate in more detail: the number systems; linear, rational, quadratic, and exponential equations; inequalities; and solve related real world problems. Students will use trigonometry tables as well as graphs as tools to interpret higher order equations, inequalities, and matrices. In addition, students will investigate variation, logarithmic functions, and sequences and series. Instruction and investigations will include the use of resources including graphing calculators and software.

ALGEBRA II HONORS (1 semester = 1 credit) Prerequisite: a grade of B or better in algebra and geometry and recommendation of previous mathematics teacher

Students will investigate and communicate mathematically using the concepts of Algebra 2. Students will investigate in more detail: the number systems; linear, rational, quadratic, and exponential equations; inequalities; and solve related real world problems. Students will use trigonometry tables as well as graphs as tools to interpret higher order equations, inequalities, and matrices. In addition, students will investigate variation, logarithmic functions, and sequences and series. Instruction and investigations will include the use of resources including graphing calculators and software. Students in Algebra 2 Honors may cover the material at a more rapid rate and the course will include supplemental themes and projects.

PRE-CALCULUS (1 semester = 1 credit) Prerequisite: successful completion of Algebra 2, Geometry and Algebra 2

Students will investigate and communicate mathematically. This course is a further study of the properties of real numbers, functions and relations. Students will investigate the applications of trigonometry. Other areas of study are complex numbers as vectors and the study of slope function. Applications of these principles in real world problems provide the use of these concepts in real life situations. Instruction and investigations will include the use of resources including graphing calculators and software.

PRE-CALCULUS H (1 semester = 1 credit) Prerequisite: a grade of B or better in Algebra 1, Geometry and Algebra 2; recommendation of previous mathematics teacher; approval of the mathematics department chair

Students will investigate and communicate mathematically. This course is a further study of the properties of real numbers, functions and relations. Students will investigate the applications of trigonometry, limits, circular functions, and polar coordinates. Other areas of study are complex numbers as vectors and the study of slope function. Applications of these principles in real world problems provide the use of these concepts in real life situations. Instruction and investigations will include the use of resources including graphing calculators and software. Students in Pre-Calculus Honors may cover the material at a more rapid rate and the course will include supplemental themes and projects.

ADVANCED PLACEMENT CALCULUS (1 semester = 1 credit) Prerequisite: a grade or B or better in Pre-Calculus or Pre- Calculus H; recommendation of previous mathematics teacher; approval of the mathematics department chair.

Students will investigate and communicate mathematically using the current AP Calculus syllabus. Students will work with functions graphically, analytically and verbally. Students will learn the meaning of the derivative and the integral and utilize their applications to solve the "tangent to a curve" and "the area under the curve" problems. Students will use these concepts to solve problems and present oral and written presentations. Students will use an appropriate graphing calculator. Instruction and investigations will include the use of resources including graphing calculators and software. Students are expected to participate in the Advanced Placement exam.

PROBABILITY AND STATISTICS (1 semester = 1 credit) Prerequisite: At least a grade of C in previous mathematics course.

This course includes topics in set theory, permutations and combinations, condition probability, binomial distributions, and measure of central tendencies. Instruction and investigations will include the use of resources including graphing calculators.

MATHEMATICAL APPLICATIONS (1 semester = 1 credit) Prerequisite: successful completion of Algebra 1, and Geometry

This course integrates various subjects within the mathematics curriculum in the form of projects. The connection to other courses enables students to apply mathematical concepts to meaningful real world scenarios. Topics may include formulas used in careers, problem solving strategies used in other courses, or geometric concepts in architecture. Students will study interesting topics through the use of research, independent work, and/or interaction with people in their careers. Instruction and investigations will include the use of resources including graphing calculators and software.

ADVANCED PLACEMENT STATISTICS (1 semester = 1 credit)

This is a college level course in statistics, which covers the traditional topics and prepares students for the Advanced Placement exam. Students are expected to take the Advanced Placement exam in May. This course integrates resources such as software and the graphing calculator. For honors level students.

ADVANCED ALGEBRA and TRIGONOMETRY (1 semester = 1 credit) Prerequisite: Successful completion of Algebra 2 and geometry

Students will investigate and communicate mathematically. This course provides an in-depth look at functions including polynomial, rational, trigonometric, logarithmic, exponential and at conic sections. Instruction and investigations will include the use of resources including graphing calculators and software.

SCIENCE

The Learning Expectation is Students as Problem Solvers/Critical Thinkers.

ANATOMY AND PHYSIOLOGY (1 semester = 1 credit) Prerequisite: Biology

Anatomy and Physiology is a course designed for those students who wish to pursue further study in the health fields or who wish to learn more about the human body. This course stresses the structural and functional features of the human body, from the **molecular level to the whole organism. Laboratory activities are designed to reinforce** ideas, develop concepts and stimulate thinking. Students who elect this course will cover material designated in the MA Science and Technology Curriculum Frameworks.

ANATOMY AND PHYSIOLOGY - HONORS (1 semester = 1 credit)

Prerequisite: grade of B or better in Biology or Chemistry and/or a recommendation from the teacher

Anatomy and Physiology Honors is a course designed for the student who has a strong interest in the field of medicine, health science or biology. The course is a fast-paced in depth study of the structure and function of the human body. This course will cover all of the body systems in both health and disease. Students will also have the opportunity to research new developments in the field of Anatomy and Physiology. Students who elect this course will cover the topics included in the MA Science and Technology Curriculum Frameworks.

ASTRONOMY/SPACE SCIENCE (1 semester = 1 credit) Prerequisite: Introductory Physics, Algebra 1

This course deals with how astronomers gather and interpret information about the universe. The Solar System, stars and their evolution, the constellations, seasonal and daily changes in the sky, galaxies and life in the universe are topics in this course. Weather permitting, some observations of the daytime and night sky are made. The origin and evolution of the universe are outlined in the Massachusetts Curriculum Frameworks are covered.

BIOLOGY (1 semester = 1 credit)

The Biology course is designed for 10th grade high school students, and includes the *Life Science Standards of the Massachusetts Curriculum Frameworks*. The topics in the class include: ecology, biochemistry, cell biology, genetics, evolution, biodiversity and anatomy & physiology. Student laboratory activities that include observation, analysis, investigation problem solving and critical thinking are an integral part of the course.

BIOLOGY HONORS (1 semester = 1 credit) Prerequisite: successful completion of or concurrent with a physical science class. Recommendation of a previous science teacher

This course is designed for 10th grade students and covers the *Life Science Standards of the Massachusetts Curriculum Frameworks*. The topics in this class include: ecology, biochemistry, cell biology, genetics, evolution, biodiversity and anatomy & physiology. But they are covered at a more rapid rate and in greater depth than the college prep biology class. This class also includes more in-depth investigation and inquiry in preparation for AP biology.

ADVANCED PLACEMENT BIOLOGY (1 year = 2 credits) Prerequisite: successful completion of Biology and Chemistry. Recommendation of a previous science teacher

Advanced Placement Biology is designed to present a college level biology course in scope and sequence. The major biological themes presented include science as a process, evolution, energy transfer, continuity and change, relationship of structure to function, regulation, the interdependency in nature, and science and technology in society. Extensive lab work and inquiry are an integral part of the course offering. Students are required to take the Advanced Placement Biology Exam. Students who successfully complete this assessment and receive a satisfactory score on the Advanced Placement Exam may receive college credit at participating colleges.

CHEMISTRY (1 semester = 1 credit)

The chemistry course offering is designed to provide the student with a comprehensive study of matter. The course emphasizes the basic principles of chemistry and applies the concepts to industry as well as living things. Students will investigate matter in the following ways: types of matter, properties of matter, atoms, molecules, elements, compounds mixtures, states of matter, energy transformations, physical and chemical changes. Laboratory activities will support the study of chemistry and reinforce inquiry, and scientific investigation. The topics of the chemistry program cover the material designated in the Massachusetts Science Curriculum Frameworks.

CHEMISTRY / HONORS (1 semester = 1 credit) Prerequisite: successful completion of a course in Introductory Physics and Algebra I. Recommendation from previous science teacher

Honors Chemistry involves a detailed study of matter, energy, metric units, elements, compounds, mixtures, properties, physical and chemical changes, atom, molecules and the states of matter. The theoretical structure of the atom is presented and is closely associated with the periodic table of elements. Extensive laboratory activities are incorporated into the course. Students electing Honors Chemistry will cover topics designated in the Massachusetts Science and Technology Curriculum Frameworks, but may cover the topics at a more rapid rate and may be exposed to supplementary topics, which are not covered in the college preparatory chemistry program.

ADVANCED PLACEMENT CHEMISTRY (1 year = 2 credits) Prerequisite: successful completion of Chemistry. Enrolled in higher levels of math. Recommendations from previous science teachers

Advanced Placement Chemistry investigates the four major themes of Chemistry: Structure of Matter, States of Matter, Reactions and Descriptive Chemistry. The course is designed for students interested in high levels of science and for students who are interested in pursuing careers in medicine, engineering or other scientific fields. Extensive laboratory work in support of the curriculum and appropriate written reports are included so as to follow all the requirements of the College Board Advanced Placement Syllabus. Students who successfully complete this course and receive a satisfactory score on the required Advanced Placement Exam may receive college credit at participating institutions.

PHYSICS FIRST (1 semester = 1 credit)

The introductory physics course is designed for 9th grade high school students, and includes the Introductory Physics standards of the Massachusetts Science and Technology/Engineering Curriculum Framework. This course provides the skills, and foundations for further studies in Biology, Chemistry, and Physics. The topics covered include: motion and forces, conservation of energy and momentum, heat and heat transfer, waves, electromagnetism, and electromagnetic radiation. Student laboratory activities that include investigation, observation, analysis and problem solving are an integral part of this course.

PHYSICS HONORS (1 semester = 1 credit) Prerequisite: successful completion of a course in Introductory Physics and Algebra I. Recommendation of the previous science teacher.

The honors physics program emphasizes science as a process of inquiry and investigation. This is a more mathematically vigorous program, and time will be devoted to problem solving. The topics covered include: mechanics, heat, kinetic theory and thermodynamics, electricity and magnetism, waves and optics, and modern physics. Laboratory experimentation will be an integral part of the course. Students electing Honors Physics may cover all of the physics concepts included in the Massachusetts Science and Technology Curriculum Frameworks at a more rapid rate and may be exposed to supplementary topics.

ADVANCED PLACEMENT PHYSICS (1 year = 2 credits) Prerequisite: successful completion of Physics. Enrolled in higher levels of mathematics. Recommendations from previous science teachers and counselors

The course in AP physics is a highly theoretical extension of Newtonian-Einsteinian mechanics and the electromagnetic theory. It uses mathematics to clarify definitions, derive formulas, and to solve practical problems concerning the physical world. The course consists of experimentation, analysis, testing and class work, which is designed to follow the requirements of the AP Syllabus. Students who successfully complete this course and receive a satisfactory score on the AP Exam may receive college credit at participating institutions.

SOCIAL STUDIES

Learning Expectations is Students as Presenters.

World History, United States History I, and United States History II are required.

WORLD HISTORY (1 semester = 1 credit)

The World Survey course is designed to foster a common core of historical knowledge that students of the High School of Science and Technology can use to enrich their lives. Students will investigate and analyze major civilizations including the Ancient Greeks, the Roman Empire, and Pre-Columbian civilizations that existed in Central and South America. Students will identify major political, economic, and religious progress, focusing on the global development of democratic, scientific, and secular thought.

This survey course will have students examine the rise of the nation state in Europe emphasizing the economic and political roots of the modern world. Students will study the Industrial Revolution, 19th century political reform in Western Europe, and the implications of European imperialism in Africa, Asia, and South America. The main focus of the course is on global societies and cultures, the rise of nationalism, and the continuing persistence of political, ethnic, and religious conflict in many parts of the world.

WORLD HISTORY HONORS (1 semester = 1 credit)

This challenging honors course is designed to foster a common core of historical knowledge that students of the High School of Science and Technology can use to enrich their lives. Students will investigate and analyze major civilizations including the Ancient Greeks, the Roman Empire, and Pre-Columbian civilizations that existed in Central and South America. Student will identify major political, economic, and religious progress, focusing on the global development of democratic, scientific and secular thought.

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UNITED STATES HISTORY I (1 semester = 1 credit) Prerequisite: World History

This is the second phase of the three-year requirement that started in grade nine. The course focuses on the growth of our nation from the colonial period through the Reconstruction Era. Emphasis is placed on the political, economic, and social developments of that period. Special emphasis will be placed on the Founding Documents: The Declaration of Independence, the Federalist Papers, and the Constitution. Students will continue to develop research techniques including written and oral communication skills.

**UNITED STATES HISTORY I HONORS (1 semester = 1 credit) Prerequisite:
Approval of the Social Studies instructor and completion World History**

This is the second phase of the three-year requirement that started in grade nine. . This challenging honors course is designed to encourage in-depth study of the growth of our nation from the colonial period through the Reconstruction Era. Emphasis is placed on the political, economic and social developments of that period. Special emphasis will be placed on the Founding Documents: The Declaration of Independence, the Federalist Papers and the Constitution. Students will be expected to master basic research techniques such as reading and oral and written communication.

UNITED STATES HISTORY II (1 semester = 1 credit)

This is the final phase of the history sequence, which begins in grade nine. This course focuses on the growth of our nation from the post Reconstruction to the present. Emphasis is placed upon the political, social, economic, and cultural development of our nation. Historical information is studied and analyzed through the use materials such as, primary and secondary sources, graphs, maps, and charts. The impact of geography on our past is also stressed. Writing essays and taking notes are an integral part of this course. In addition, students reading and oral communication skills are further developed. Focus is also given to modern problems confronting America and its role in today's changing world. An attempt is made to instill democratic values in students and the importance of becoming an active American citizen.

**UNITED STATES HISTORY II HONORS (1 semester = 1 credit) Prerequisite:
Approval of the social studies instructor**

This is the final phase of the history sequence, which begins in grade nine. This course focuses on the growth of our nation from the post Reconstruction era to the present. This course covers the same content area as U.S. History1; however, the honors course includes considerable independent study and requires many written assignments. Emphasis will be placed on mastering basic research techniques, as well as reading, and oral and written communication skills.

**UNITED STATES HISTORY ADVANCED PLACEMENT (1 semester = 1 credit)
Grade 11 or 12 Prerequisite: Demonstrated advanced abilities. Student needs approval
of a Social Studies instructor**

This course is designed specifically to prepare students for the Advanced Placement Exam. This history of the United States is reviewed from the age of exploration to the present day. Throughout the year extensive independent reading and writing activities are required. A summer reading project is also included. All students will be required to take the Advanced Placement Exam.

**HISTORY HONORS SEMINAR 12 (1 semester = 1 credit) Prerequisite:
recommendation of a social studies teacher**

This course is an intensive survey of history for mature seniors who have successfully completed the three-year required history cycle. The goal of this course is to examine the great questions, which have perplexed mankind since the beginning of civilization. The writings of great thinkers are examined. Topics include the nature of the relationship of the individual to society, the role of men and women in society, the role of race in history and many more. Independent research, class discussions and analytical essay writing are stressed.

LATIN AMERICAN HISTORY (1 semester A/B = .5 credit) Grades 11, 12

Latin American History is 1 marking period course designed to familiarize students with the background of Latin American history. Focus **will** be on Latin America's rich tapestry of colonial clashes, modern growth, economic challenges and vibrant cultural development.

**INTRODUCTION TO LAW - CRIMINAL AND CIVIL [2009-2010 ONLY] (1semester
A/B = .5 credit) Grades 11, 12**

The semester introduces students to basic themes of legal studies including criminal law, the lawmaking process, federal and state court systems, the adversary system and roles of judges and juries. Students will also be introduced to basic criminal law principles including crimes against the person, crimes against property, and defenses to a criminal charge. Students will learn about the criminal justice process including arrest, search and seizure, the trial process and the juvenile system. Interactive components may include but are not limited to guest speakers, field trips, mock trials and speaking to legal professionals where appropriate.

ECONOMICS (1 semester = 1 credit) Grades 11, 12

This introductory course in Economics is designed to acquaint the student with the various types of economic systems, e.g., capitalism, communism, socialism, and fascism. Special emphasis is placed on the study of the fundamentals and basic principles of the free enterprise system. Students acquire theoretical and factual information that can be used to resolve present and future economic problems. Some of the topics covered are supply and demand, money, and types of business organizations, unions, inflation, recession, regulation, and monetary and fiscal policy. A research paper is required.

**ECONOMICS HONORS (1 semester = 1 credit) Grades 11, 12 Prerequisite:
Department permission required to enroll**

An intensive course in Economics for grades 11 and 12 honors level students.

ADVANCED PLACEMENT ECONOMICS (1 semester = 1 credit)

This one year course is divided into parts:

Microeconomics is taught during the first semester. Microeconomics is designed to give the students insight and understanding of the individual decision makers, both producer and consumer within the larger economic system.

Macroeconomics is the focus of the second semester. Macroeconomics is designed to give students insight and understanding of the principles of economics that apply to economic system as a whole.

The study of economics can be fascinating, fun, confusing, and frustrating, sometimes all at the same time. In order to maximize the learning experience, it is necessary to work with and experience the application of economic principles in addition to reading about them. The class will require you to be an active learner. Emphasis is placed on critical thinking skills through the understanding, application and analysis of fundamental economic concepts. There will be tests, projects, homework assignments and outside readings. Students are required to take both the macro and micro AP Exams.

EUROPEAN HISTORY ADVANCED PLACEMENT (1 semester = 1 credit)

Prerequisite: recommendation of Social Studies instructor

AP European History is a course designed for the 11th or 12th grade student who wishes to obtain college credit in European history. The Advanced Placement examination is a test of your knowledge of European history from the Renaissance to the end of the Cold War. The themes of this course will stress intellectual and cultural history, political and diplomatic history; and social and economic history. The format focuses on the analysis of documentary evidence, research projects and class presentations. The goal of this course is to prepare students to take the European History Advanced Placement test, which is given annually in May.

AFRICAN-AMERICAN HISTORY (1 semester A/B = 1/2 credit) Grades 11, 12

Prerequisite: recommendation of U.S. History teacher

African-American History is a one marking period course designed to acquaint students with that part of American history that deals with the heritage of African-Americans. **It** stresses their African roots and civilizations and their role in the development of the United States.

AMERICAN GOVERNMENT (1 semester = 1 credit) Grades 11, 12

This course is an introduction to the study of the world's political institutions in general and American Government in particular. By the end of this course all students will demonstrate an ability to understand the meaning of basic political terms and be able to compare the basic theories of government. In addition, they will demonstrate an understanding of the historical development and present functions of our government system.

PSYCHOLOGY (1 semester A/B =1/2 credit) Grades 11, 12

This course is an introduction to the study of Psychology. By the end of this course, all students will demonstrate their ability to compare the various theories, of psychology, which have been reviewed during this course. Basic psychological concepts will be studied to further the student's ability to analyze the reasons for a person's behavior/actions. This presentation includes an investigation into the origins of personality and a view into the intricacies and differences in human behavior.

By the end of this course, all students will demonstrate that they have mastered basic research techniques such as reading, oral and written communication, the interpretation of charts, graphs and tables in order to gather, classify, interpret, evaluate and present data. Students should be able to demonstrate a working understanding of such topics as perception, learning, thinking, intelligence and the cycle of life (infancy to death and dying) upon completion of the course.

AP PSYCHOLOGY (Year long = 2 credit) Grade 12 Prerequisite: recommendation of a social studies teacher.

Advanced Placement Psychology is a college-level course in a field of science that is constantly changing our view and understanding of human behavior and thought through questioning, investigation, and evaluation. AP classes accelerate a student's academic performance and dramatically improve their writing skills, problem solving abilities, and develop rigorous study habits. An extensive research project is required. Students who have the opportunity to take the AP exam to earn college credit for work completed while still in high school. Students are required to have a teacher recommendation and parental permission to participate in the AP Psychology course.

SOCIOLOGY (1 semester A/B = 1/2 credit) Grades 11, 12

Students study the basic concepts of sociology, including culture, social structure, communities, socialization and social problems. Students are expected to work independently on outside projects as well as projects within the classroom setting, which will allow them to perfect their critical thinking skills. They will learn how to synthesize and apply data, work within a cooperative learning setting, and in general, learn to respect the values and opinions of others in order to become productive and effective citizens in our society.

COMMUNITY SERVICE LEARNING (1/2 semester = 1/2 credit) Grade 12 Prerequisite: permission of the instructor

The Community Service Learning course provides students with an understanding of the community and the responsibilities associated with citizenship with the community. Learning will take place in the classroom as well as in carefully designed seminars, student interviews with community leaders, and on-site volunteer experiences.

INTERNSHIP (1 semester A/B = 1credit)

This course is designed to take place at an appropriate off-campus worksite. It teaches and tests student's classroom knowledge and skills as they are applied to the workplace. Students will develop transferable academic, technical, and employability skills. They will also acquire social and critical thinking skills necessary to be successful in the world of work and to participate in the life-long learning process. The Massachusetts Work Based Learning Plan, weekly journals and employer feedback are the tools used to measure/evaluate the internship.

CAREER DEVELOPMENT (1 semester A/B = 1/2 credit) Recommended for Grade 10 students

This course is designed for students to develop and practice the skills necessary to help them to make successful career choices. Students will explore career options, develop knowledge of the workplace, and expose students to "all aspects of industry" in specific clusters, and foster strategies for success and lifelong learning in a rapidly changing

NAVAL JUNIOR RESERVE OFFICER TRAINING CORPS

NAVAL SCIENCE I (1 semester = 1 credit) Prerequisite: freshman, sophomore, and juniors must have a "c" average or higher overall. Approval of naval science instructor. Class is not available to seniors.

Includes introduction to the NJROTC program; introduction to leadership, basic seamanship, history of the world's early navies, foundations of government, citizenship, military etiquette, naval ships, naval aviation, health, first aid, survival, land navigation, military drill, and physical fitness. Students are required to wear an NJROTC uniform weekly and conform to NJROTC grooming requirements.

NAVAL SCIENCE II (1 semester = 1 credit) Prerequisite: Completion of Naval Science I with a "c" average or higher. A "c" average or higher overall GPA. Approval of naval science instructor. Completion of naval science i with a "c" or higher.

The purpose of this course is to build upon the general information provided in Naval Science I. Includes continued leadership training, citizenship, naval history American Revolution to the Civil War, naval weaponry, meteorology and weather, navigation, physical fitness and military drill. Students are required to wear an NJROTC uniform weekly and conform to NJROTC grooming requirements.

NAVAL SCIENCE III (1 year = 2 credits (Naval Science III credit) Prerequisite: Completion of Naval Science I and II with a "c" or higher. Overall OP A of a "c" or higher. Approval of naval science instructor. Class is not available to freshman.

The purpose of this course is to build upon the lesson learned in Naval Science I and II. Includes continued advanced leadership training, military justice, naval history American Civil War to Bosnia, and the sea, navigation, communications and intelligence, physical fitness and military drill. Students are required to wear an NJROTC uniform weekly and conform to NJROTC grooming requirements.

NAVAL SCIENCE IV (1 year = 2 credits) (Naval Science IV Credit) Approval of naval science instructor. Class is not available to freshman or sophomores.

Purpose of this course is to provide an in-school internship learning experience in leadership. Students must have successfully completed Naval Science I, II, and III and be recommended by the Naval Science Instructor. All classes are conducted as leadership labs and students are expected to fill positions as assigned within the school. Case studies and research papers constitute the bulk of academic work. May be repeated.

SPECIAL EDUCATION

The Learning Expectations is Students as Problem Solvers.

The Organizational Study Skills class instructs individuals and small groups of students in specific strategies to compensate for processing difficulties in receptive and expressive language, decoding skills and organization. Strategies and modifications are developed to meet the student's needs as stated in his/her Individual Educational Plan.

Inclusion classes

Student Learning Support Classes

Alternative Learning Program

Life skills

Developmental Life skills

SPECIAL EDUCATION SERVICES

Students enrolled in general education classes with special education support staff. This includes study skill class which instructs individuals and small groups of students in specific strategies to compensate for processing difficulties in receptive and expressive language, decoding skills, and organization.

Individual and small group instruction in English, math, and reading in small class settings are taught by special education instructor. Individual and small group instruction focusing on academic and behavioral accommodations. Small class setting taught by special education instructor.

Small, self-contained class in which student learns basic life skills. Services provided by a special education instructor.

Small, self-contained class for students with severe special needs. Services provided by a special education instructor.

Accommodations and modifications are developed to meet the student's needs as stated in his/her Individual Education Plan (IEP)

FINE ARTS

The Learning Expectations is Students as Critical Thinkers

FUNDAMENTALS OF ART I (1 semester = .5 credit) Sketchbooks are required.

This is an introductory course for students planning to take additional courses in the Art department. The course provides students with the basic foundation of the elements and principles of Art. Students are introduced to a variety of two-dimensional media.

FUNDAMENTALS OF ART II (1 semester = .5 credit) Pre-requisite: Foundations I C or better Sketchbooks are required.

This course is designed to reinforce and expand the content in Foundations of Art I, as well as to help the student develop a more unique approach to solving problems. Greater emphasis is placed on design fundamentals related to drawing, painting, design, sculpture, and printmaking. Exposure to a range of artists and styles will provide insight into the development of a personal style. Students explore new media and begin to develop a portfolio.

STUDIO ART AP (Yr = 2 credits) Pre-requisites: Foundations of Art I and II, Drawing and Painting

This course is for highly motivated students who are serious about pursuing art and developing a portfolio of their work. Students must be committed to a great deal of out of class work. The portfolios created by students are evaluated by the advanced placement program of the College Entrance Examination Board.

ADVANCED PAINTING (1 semester =1 credit) Pre-requisite: Foundations of Art I/II, Drawing and Painting (C or better)

This advanced course is designed for serious art students with proven ability in painting. Many styles of painting, media, and relevant terminology are explored, as students develop a deeper understanding of the elements of art and the principles of design. Students will incorporate their knowledge of art history and directed technical experience into personal portfolio studies.

SCULPTURE (1 semester = 1 credit)

The course is devoted to the exploration and development of three-dimensional art forms. A variety of materials will be used, including stone, paper, wood, and plaster. Subtractive and additive techniques will be studied. Students will examine the work of artists associated with the medium their place in the history of art. Pre-requisites: Foundations of Art I and II.

CERAMICS I (1 semester = .5 credit)

This course is designed to introduce students to the basic forming techniques: coil, slab, pinch and molds. Students will gain familiarity with a variety of ceramic materials and processes. Emphasis will be on good construction, creativity and exploring surface design. Specific projects will allow creative problem-solving while students explore various hand building and wheel throwing skills and both traditional and experimental finishing techniques.

MUSIC

MADRIGAL SINGERS (1 year A/B = 1 credit) Prerequisite: Concert Chorale/Choir: audition: vocal

Membership is by audition only and is limited to juniors and seniors. This course introduces the art of contrapuntal singing in three and four voice parts, and teaches the students the form of A cappella singing and stylistic interpretation in highly selective vocal literature.

CHORALE (1 year A/B = 1 credit) Prerequisite: Chorus, or the equivalent experience

This large mixed-voice choral group prepares both accompanied and unaccompanied choral literature from all major periods and styles. Both medium to early advanced levels of literature will be rehearsed. Though prior chorale experience is desirable, it is not necessary, and enrollment is open to any student who is recommended for this group. A major portion of class time will be devoted to choral rehearsal and more advanced vocal techniques some attention will be focused on analysis and structure of the literature performed. The Chorale participates in several performances a year, both in school and around the community. Some out of school hours is generally required.

MUSIC THEORY (1 semester = 1 credit)

A course in music theory and traditional harmony for the music student who wants to improve his or her instrumental or vocal performance, and/or wishes to take more advanced music theory classes. Topics include major and minor scales and keys, intervals, triads, and four-part harmony.

BEGINNING CHOIR (1 year A/B = 1 credit) All grades

This course is continuing sequence to choral development. The choir prepares both A-cappella and accompanied scholar literatures of all major periods and styles. Public performances include at least three major concerts and numerous community functions. Participation in choir frequently leads to acceptance into more advanced choral groups such as Concert Choir, The Massachusetts Music Educators Association, Western District Chorus and the Massachusetts Music Educators All State Chorus.

JAZZ ROCK SINGERS (1 year A/B = 1 credit) Grades 10, 11, 12 Prerequisite: Concert Chorale/Choir: audition

This group of voices (maximum 20) is selected by auditions. Students must have had previous vocal experience either in a large ensemble or a small jazz group. Part of the audition will require a small movement routine judged by an accredited dance teacher. This group will also perform with the Stage Band and at many school and community functions as well as in competitions.

JAZZ -ROCK WORKSHOP/ENSEMBLE (1 year A/B = 1 credit) Prerequisite: audition and consent of instructor

A jazz-rock oriented group, which performs at concerts, competitions, and many other functions. Jazz styles and improvisations are studied. Superior ability and time outside of school hours are required.

CONCERT BAND (1 year A/B = 1 credit) All grades

Membership is by audition only. Concert Band is a full year performing ensemble emphasizing the development of individual and group instrumental skills. This course is audition-based and is open to advanced-level woodwind, brass and percussion players. Concert Band provides an opportunity for students to further study the language of music through reading musical notation and playing musical instruments. The Concert Band represents both the school and the City of Springfield in numerous functions throughout the year including concerts, athletic events and civic functions.

BAND I (Intro to Band) (1 year A/B = 1 credit) All Grades Prerequisite: None

Band I is a full year performing ensemble. This course provides an opportunity for students to study the language of music through reading musical notation and playing musical instruments. Beginning instruction is offered on all wind and percussion instruments including flute, bassoon, oboe, clarinet, saxophone, trumpet, French horn, trombone, baritone, tuba, snare drum, bass drum, etc. Band I represents both the school and the City of Springfield in numerous functions throughout the year including concerts, athletic events and civic functions. Students prepare for full participation in Concert Band. Instruments are either rented or borrowed from the school. No previous experience necessary.

BAND TEACHING ASSISTANT (1 semester = .5 credit) Prerequisite: Concert Band Consent of Instructor

This course provides opportunities for advanced music students to further develop their musicianship and leadership skills by being peer instructors. Students will serve as teaching assistants in beginning band (Band I) ensembles. Students will prepare and teach lesson plans, organize and lead group sectionals and perform with the beginning ensembles under the supervision of the instructor.

PERCUSSION ENSEMBLE (1 year A/B = 1 credit) Prerequisite: None

Percussion class is a comprehensive course in playing the instruments of the percussion family. Traditional drumming and sticking skills, notation, percussion ensemble literature, mallet techniques and hand drumming will be emphasized. Instruction is group oriented and student's work cooperatively to prepare ensemble music for public performance.

ADVANCED PERCUSSION ENSEMBLE (1 year A/B= 1 credit) Prerequisite: permission of instructor

A continuation of first year study, with emphasis on preparing percussion music for public performance. Students study traditional and non-traditional techniques, and improve their skills in sticking, notation, mallet techniques and hand drumming.

ELL Program

The Learning Expectations is Students as Readers and Writers

The English Language Learning Program in Springfield High School of Science and Technology is built on the premise that all children can learn best in a language mode that is comprehensible. As a result, students are assigned to a Sheltered English Immersion instructional setting based on their language dominance as well as their academic proficiency to enable them to succeed. The curriculum within the English Language Learning Program is parallel to the curriculum in the monolingual English speaking program and follows the city wide scope and sequence and Massachusetts Frameworks.

The following courses follow the guidelines for each of their counterparts in the mainstream program:

Algebra I, Conceptual Physics, World and American History, Algebra II, Chemistry, Health, Geometry, Biology, and Applications of Technology I & II

ENGLISH for SPEAKERS OF OTHER LANGUAGES:

English for Speaker of Other Language (ESOL) is a sequential arts/reading class series developed especially to meet the linguistic needs of English Language Learners (ELL). It follows the new English Language Proficiency Benchmarks and Outcomes developed by the DOE. ESOL plays a crucial role in any instructional setting developed to help students who are in the process of acquiring English. Its purpose is to provide ELL basic information about the language, similar to the language already acquired by native English speaking students through natural exposure and interaction in a structured setting.

ESOL I (1 year = 1 credit)

Students will learn English to communicate in social settings and to achieve academically in content areas. A strong emphasis will be placed upon the development of the listening, speaking, reading, writing, and critical thinking skills which are essential for academic and personal expression. Vocabulary and strategies for progress in content-areas classes will be priority. Students will develop fundamental reading strategies by analyzing authentic short stories and essays.

ESOL II (1 year = 1 credit)

Students will learn the English necessary to interact in all content-areas in the classrooms in which they are integrated. Students will use English to obtain, process, and provide subject matter information in spoken and written form. They will continue improving academic reading, writing, and critical thinking skills by analyzing more complex reading materials. Students will understand how to transfer their knowledge to other areas of the curriculum and to real life.

ESOL III (1 year = 1 credit)

Students will have integrated into the monolingual English academic program for a majority of their classes. Students will continue to develop the English linguistic skills necessary for critical thinking, reading, writing, editing, speaking, and listening in academic contexts. In addition, the ESOL class will be a vehicle to explore interests, values, abilities, and goals such as possible future vocations and or higher educational opportunities.

STEM 21 COURSES

Beginning with the Class of 2012 all students will choose a STEM Academy. Students will complete a minimum of four courses (a pathway) within their Academy. All students will have the opportunity to complete an internship, earn college credit and complete necessary college and work-place readiness skills in the chosen Academy field.

STEM 21 Academy Pathways

Biomedical/Biotechnology and Forensic Science Academy

Biomedical Pathway

- Biomedical Science I
- Anatomy and Physiology
- Medical Interventions
- Senior Project in Biomedical Science

Biotechnology Pathway

- Introduction to Biotechnology
- Biotechnology II
- Biotechnology III
- Dual Enrollment College Course

Engineering Academy

- Introduction to Engineering Design (.5 credit)
(Robotics and Automation, Environmental Technology, Architectural Design)
- Engineering II
(Transportation Technology, Alternative Energy, Digital Electronics, Manufacturing)
- Engineering III
(Advanced Manufacturing & Materials, Advanced Alternative Energy & the Environment)
- Engineering IV
(Advanced Architecture & Construction, Advanced Robotics)
- Senior Project

Finance Academy

- Principles of Finance
- Entrepreneurship **or** The Finance of Sports Management
- Global Economics **or** Financial Services **or** Business Economics
- Financial Planning (.5 credit) **or** Business Ethics (.5 credit) **or** Insurance (15 credit) **or** Accounting (.5 credit)

IT/Film & Media Academy

Computer Systems (Maintenance & Networking) Pathway

- Applications of Technology I (.5 credit) – (10010462)
- Applications of Technology II (.5 credit) – (10020472)
- A+ Computer Maintenance /Repair - (14010421)
- Network I (.5 credit) – (14320462)
- Network II (.5 credit) – (14330472)

Digital Design Pathway

- Applications of Technology I (.5 credit) - (10010462)
- Applications of Technology II (.5 credit) – (10020472)
- Computer Graphics I (.5 credit) – (10050462)
- Computer Graphics II (.5 credit) – (10050472)
- Desktop Publishing I (.5 credit) – (10070462)
- Desktop Publishing II (.5 credit) – (10080472)
- Introduction to Computer Aided Design (CAD) (.5 credit) – (14100462)
- Advanced Computer Aided Design (CAD) (.5 credit) – (14120477)
- Web Page Design – (10150451)

Film & Media Pathway

- Applications of Technology I (.5 credit) - (10010462)
- Applications of Technology II (.5 credit) - (10020472)
- Introduction to Film & TV in Society – (10230452)
- Video Production I (.5 credit) – (00550461)
- Video Production II – (00560471)
- Video Production III
- Drama I – (00120461)
- Drama II

Programming Pathway

- Applications of Technology I (.5 credit) - (10010462)
- Applications of Technology ii (.5 credit) - (10020472)
- Introduction to Object Orientation (.5 credit) – (10230452)
- Visual Basic (.5 credit) – (10140251)
- Computer Science Advanced Placement – (10226851)

Please note: An Internship (.5 credit) Course can be taken as a second semester junior or a first/second semester senior in each pathway.

STEM 21 ACADEMY COURSE DESCRIPTIONS

BIOTECHNOLOGY, BIOMEDICAL SCIENCE, FORENSIC SCIENCES ACADEMY

Biomedical Science I (1 semester = 1 credit)

This is the 1st level course in the Biomedical Science Academy Career Pathway.

Students explore the concepts of human medicine and are introduced to research processes and bioinformatics. The course is designed to provide an overview of all the courses in the Biomedical Sciences program and to lay the scientific foundation necessary for student success in the subsequent courses.

Medical Interventions (1semester = 1 credit)

This is the 3rd level course in the Biomedical Science Academy Career Pathway.

Students investigate the variety of interventions involved in the prevention, diagnosis and treatment of disease as they follow the lives of a fictitious family. These interventions are showcased across the generations of the family and provide a look at the past, present and future of biomedical science.

Biotechnology I (1 semester = 1 credit)

This introductory course serves as the foundation of the Biotechnology pathway. Careers in the field of biotechnology are investigated throughout the course. The major topics studied are lab skills, bioethics, and applications of biotechnology in medicine, forensic science, engineering, and agriculture.

Biotechnology II (1semester = 1 credit)

This second level course in the biotechnology pathway continues the work of the introductory courses. Students, having taken the required biology course, are able to gain a deeper understanding of DNA structure and function as it relates to biotechnology. Topics in research and development in the biotechnology industry, specifically the use of electrophoresis techniques are studied. A forensic science component continues to thread throughout this pathway including the use of DNA fingerprinting. Career exploration is an underlying theme of the course.

Biotechnology III (1 semester = 1 credit)

This third level course in the biotechnology pathway incorporates the concepts students learned or are learning in chemistry as it relates to the qualities of different types of solutions used in the biotechnology industry. They will be able to create solutions with specified molarity. DNA extractions and mini-prep protocol will also be practiced. A focus on laws, policies, and politics surrounding the fields and applications of biotechnology will also be studied. The underlying themes of forensic science and career exploration will continue through this course.

ENGINEERING ACADEMY

Engineering I (1 semester A/B = .5 credit)

This is the first course in the Paxton Patterson CareerPlus Engineering Curriculum. This course covers technical content as well as the social and political consequences of technological change. Topics include Robotics and Automation, Environmental Engineering, and Architectural Design. Content delivery is via modular interactive multimedia. The interface is dynamic, attractive, and compelling, motivating students to interact intellectually. Students use industrial-quality laboratory equipment to perform tasks in each of the three engineering fields while being exposed to a multitude of possible career opportunities and a variety of filtered web sites for enrichment in the areas of specialty. They perform independent lab tests and experiments based on observation and research using CD-based encyclopedias, lab manuals and Internet restricted websites. Students construct and assemble major projects to culminate in open-ended design challenges substantiated by performance and verbal defense.

Engineering II (1 semester = 1 credit)

This is the second course in the Paxton Patterson CareerPlus Engineering Curriculum. This course covers technical content as well as the social and political consequences of technological change. Topics include Transportation Technology, Alternative Energy Engineering, Digital Electronics, and Manufacturing Engineering. Content delivery is via modular interactive multimedia. The interface is dynamic, attractive, and compelling, motivating students to interact intellectually. Students use industrial-quality laboratory equipment to perform tasks in each of the four engineering fields while being exposed to a multitude of possible career opportunities and a variety of filtered web sites for enrichment in the areas of specialty. They perform independent lab tests and experiments based on observation and research using CD-based encyclopedias, lab manuals and Internet restricted websites. Students construct and assemble major projects to culminate in open-ended design challenges substantiated by performance and verbal defense.

Engineering III (1 semester = 1 credit)

This is the first course in the Paxton Patterson CareerPlus2 Engineering Curriculum. This course covers technical content as well as the social and political consequences of technological change. Topics include a more in-depth and rigorous study of Robotics and Alternative Energy. Content delivery is via modular interactive multimedia. The interface is dynamic, attractive, and compelling, motivating students to interact intellectually. Students use industrial-quality laboratory equipment to perform tasks in each of the two engineering fields while being exposed to a multitude of possible career opportunities and a variety of filtered web sites for enrichment in the areas of specialty. They perform independent lab tests and experiments based on observation and research using CD-based encyclopedias, lab manuals, textbooks, SolidWorks engineering software, and Internet restricted websites. Students construct and assemble major projects to culminate in open-ended design challenges substantiated by performance and verbal defense.

Engineering IV

This is the second course in the Paxton Patterson CareerPlus2 Engineering Curriculum. This course covers technical content as well as the social and political consequences of technological change. Topics include a more in-depth and rigorous study of Architectural Design and Manufacturing Engineering. Content delivery is via modular interactive multimedia. The interface is dynamic, attractive, and compelling, motivating students to interact intellectually. Students use industrial-quality laboratory equipment to perform tasks in each of the two engineering fields while being exposed to a multitude of possible career opportunities and a variety of filtered web sites for enrichment in the areas of specialty. They perform independent lab tests and experiments based on observation and research using CD-based encyclopedias, lab manuals, textbooks, SolidWorks engineering software, and Internet restricted websites. Students construct and assemble major projects to culminate in open-ended design challenges substantiated by performance and verbal defense.

FINANCE ACADEMY

Applied Finance (1 semester A/B = .5 credit)

This course delves into the financial concepts introduced in Principles of Finance. Students learn to identify the legal forms of business organization and continue to develop an understanding of profit. They learn about various financial analysis strategies and the methods by which businesses raise capital. Students also have the chance to explore, in depth, topics of high interest in the field of finance, and explore the types of careers that exist in finance today.

Business Economics (1 semester = 1 credit)

This course introduces students to the key concepts of economics as they pertain to business. This course also discusses the American economy and the factors that influence the success of businesses and products. It describes forms of business ownership, discusses the relationship of labor and business, and provides a broad overview of the global economy. Students also examine careers in business, both as employees and as business owners.

Business in a Global Economy (1 semester = 1 credit)

This course provides student with an understanding of how and why businesses choose to expand their operations into other countries. This course exposes students to the unique challenges facing firms doing business internationally, and to the potential opportunities available to those businesses. Building on concepts introduced in Principles of Finance, Business in a Global Economy broadens students' understanding of how businesses operate, grow, and thrive in our ever-changing world.

Ethics in Business (1 semester A/B = .5 credit)

This course introduces the importance of ethics in business. Students focus on the significance of ethics to stakeholders; examine who bears responsibility for monitoring ethics; and explore ethical situations common in organizations. Students examine how ethics affects various business disciplines and consider the impact on organizational culture. Students also explore ethics as social responsibility, the evolution of ethics in international business, and how the free market and ethics can coexist.

Financial Planning (1 semester A/B = .5 credit)

This course provides students with an overview of the job of a financial planner. Students learn to consider how all aspects of financial planning might affect a potential client, and learn about the importance of financial planning in helping people reach their life goals. This course includes lessons on saving, borrowing, credit, and all types of insurance, and covers various types of investments. Students also examine careers in financial planning. .

Financial Services (1 semester = 1 credit)

This course gives students an overview of banks and other financial services companies. It introduces students to the origins of money and banking and examines the early history of banking in the United States. Students study the financial services industry and the types of companies it includes in depth. They learn about the services offered by such companies and analyze the ways these companies earn profits. Finally, students examine careers in financial services.

Insurance (1 semester A/B = .5 credit)

This course introduces students to the insurance industry and to its critical role in the financial services sector and in society. It covers common types of insurance, including life, health and disability, property, liability, and forms of commercial insurance. Students examine the business model underlying the industry and how underwriting, actuarial science and investment practices affect an insurance company's financial success. Finally, the explore career opportunities including broker, underwriter, actuary, and claims adjuster.

Managerial Accounting (1 semester A/B = .5 credit)

This course introduces the fundamentals of management accounting, including manufacturing and cost accounting, budgeting, accounting for managerial decision-making, and financial statement analysis. Students learn how to use accounting information for internal decision-making and planning and control. Regardless of the career path they choose, this course gives students the financial acumen necessary to make informed personal and business decisions..

The Finance of Sports Management (1 semester = 1 credit)

Students learn about the process of professional sports management, with special emphasis on the finance behind planning sports events. Students are introduced to all aspects of event planning, including facility selection and management, personnel management and contracts, audience management (emergency planning, security measures, etc.), budgeting, revenue, ticket sales and box office management, marketing, fund-raising, and sponsorships. This course focuses on the nature and concerns of sport and recreation professionals as they prepare and defend operating and capital budgets. Topics will include the preparation of financial plans, strategic budgeting, organizational structure, collaborative efforts, and other methods used to fund and support facility operations. By learning about these areas and practicing these skills, students gain valuable experience in project management that can be applied to any course of study or career path. Students will also examine career opportunities as an event planner, facility manager, and event coordinator, event promoter, in independent and in other venues. Students will consider the education, experience and skills needed to enter and succeed in this field.

IT/FILM & MEDIA ACADEMY

INTRODUCTION TO FILM AND TV IN SOCIETY (1 semester = 1 credit)

Exploring how media and communication tools shape our relationship to society, each other, and ourselves...what that means for 21st century learners and what we can do about it.

This involves framing the study of media literacy into three overlapping components. First, a socio-historical examination of the ways in which cultures and their communication tools evolve and interact throughout that evolution; second, a comparison of the possibilities of various media tools, both mass and “new”, in order to lay bare the ways in which each tool has a specific rhetoric, and third, an examination of the ways in which each rhetoric functions on cultural, psychological, and societal scales. Note that of these three strands, only this last includes the idea that media messages can be manipulative.

VIDEO PRODUCTION I (1 semester = 1 credit)

Introduction to Video Production is an entry level course designed to provide students with a basic understanding of the process of video production and design. Students are given the opportunity to utilize their own creativity through student centered projects that focus on writing in response to focused prompts. Students follow the creative process through writing a simple script and planning shots, to a video shoot focused on lighting, sound and proper framing. Next, students engage in the editing process and through this exploration develop specialized computer skills. Students are encouraged to access various forms of media files such as still digital photographs and music files, as well as to perform internet research to develop graphics that support their project.

Video Production II (1 semester = 1 credit)

Video Production II is designed to build upon skills that were introduced in Intro to Video Production. Students are given the opportunity to have greater control in developing their own production initiatives. Students often develop projects in collaboration with other staff members and are often asked to document events. Students may request to enter into a video contest and will be supported in their efforts to respond to very strict rubrics and guidelines. Student’s exploration of the editing process becomes much deeper and students are afforded greater latitude in determining how far they wish to go in the development process.

Video Production III (1 semester = 1 credit)

Students in Video Production III can expect to become involved with professional level video production. Students will interact with community organizations to produce projects that are television ready. Professional standards of social interaction are expected and promoted. Responsibility to make professional contacts and to develop and adhere to production schedules is essential. Students will respond to needs in and outside the school community to help to create meaningful communicative solutions utilizing the format and technology of video and television.

DRAMA I (1 semester = 1 credit)

In this course, students will be introduced to the basic technical aspects of theater production as well as to the physical, vocal, and interpretive facets of performance. Students will begin with a focus on physical movement, physical awareness, carriage, use of space, pantomime, and tableaux. The vocal component will consist of breath and sound exercises developing into the use of voice in monologues, dialogues, improvisations and short scripted scenes. There will be an emphasis on cooperation, creativity, depth of expression, character creation, enthusiasm, collegiality, participation, group work and a willingness to accept direction. Theater history, terminology, technology, and traditions will be examined for students' understanding and appreciation of theater.

WEB PAGE DESIGN, PUBLISHING AND MAINTENANCE (1 year = 1 credit) Grades 10, 11, 12 Prerequisite: successful completion of Exploring the Internet

Web Design is a hands-on introduction to designing, building, and launching websites. Students learn about web development including HTML coding, usability, design, and web-based publishing tools. Students determine business requirements, gather web content, create web pages, conduct usability testing, launch their websites, and plan how to attract traffic. Students take a look at various career opportunities in web design. A Culminating Project is required for students to demonstrate their mastery of course objectives.

NETWORKING 1 - INTERNETWORKING FUNDAMENTALS (1/2 year = .5 credit) Grades 10, 11, 12 Prerequisite: Successful completion of Exploring the Internet

Students will learn the concepts, terminology and components of a network and will develop a clear understanding of networking technologies and how networks are implemented. This is a hands class - on introduction to peer-to-peer and client/server networks. The course guides students through all phases of implementing and troubleshooting common TCP/IP Ethernet networks. It covers network components, cables, and connectors, as well as the OSI model, protocols, and topologies. Students implement and troubleshoot a LAN and learn about access issues for WANs. Finally, students explore opportunities for network-related careers.

NETWORKING II - ROUTING (1 semester A/B = .5 credit) Grades 11, 12 Prerequisite: successful completion of Networking I - Internetworking Fundamentals

Students will acquire the knowledge and skills needed to understand, configure and manage data network routers. The purpose of this course extension is to prepare students to pass the CompTIA Network+ certification exam. It is geared to the CompTIA Network+ exam number N10-004. This course extension assumes that students have successfully completed AOIT Computer Networking. The activities has many hands-on labs, readings, vocabulary building activities, group work, discussions, presentations, and practice tests to provide students the proficiencies tested on the exam.

A+ COMPUTER Maintenance and Repair (1 semester = 1 credit) Grades 10, 11, 12
Prerequisite: successful completion of Exploring the Internet and recommendation of instructor.

This course is for motivated students who are interested in developing skills and knowledge in computer technology, business and leadership. A+ Computer walks students through the intricacies of setting up hardware, installing software, connecting to a network, and connecting to the Internet. Students get hands-on practice upgrading operating systems. They get practice assembling and disassembling computer hardware including peripherals, motherboards, FRUs, and connectors. Students also learn troubleshooting techniques. Finally, students get a chance to explore careers for computer systems professionals.

DESK TOP PUBLISHING I (1 semester A/B = .5 credit)

This hands-on course is a study of desktop publishing and the current state of the desktop publishing industry. Emphasis will be placed on how to actually create a publication from start to finish. This course focuses on the uses of Adobe PageMaker for document layout and design. Students have the opportunity to create a variety of professional quality finished documents for practical and business use. This course assumes that the students know basic Windows and MS Word. Students should have general computer knowledge.

DESK TOP PUBLISHING II (1 semester A/B = .5 credit)

The Desktop Publishing course is design to produce documents such as newsletters, brochures, books, etc. Desktop publishing software is a tool for both graphic designers and non-designers to create visual communications for professional or desktop printing.

COMPUTER GRAPHICS I (1 semester = 1 credit) Prerequisite: Applications I

This credit course provides exposure to graphics software, which facilitates the creation, manipulation and management of computer-based images. Students use digital cameras, scanners, color printers, graphic converters, Internet graphics and much more to design each project.

Principles of design and layout are emphasized for each assignment, including business cards, greeting cards, magazine covers, CD jackets and labels, reports, and others (as time permits).

Software packages used in this course include:

- Adobe Illustrator CS2
- Adobe Photoshop CS2
- Adobe PageMaker 7.0
- Microsoft Office

COMPUTER GRAPHICS II (1 semester = 1 credit) Prerequisite: Applications 1, Computer Graphics 1

This course provides exposure to multimedia authoring software for producing movies for the Web and kiosks, in-depth use of Adobe Photoshop and advanced use of the vector and raster graphic programs used in Computer Graphics 1. Skills acquired shall be used to benefit the school, community and individual. Students use digital cameras, scanners, color printers, graphic converters, Internet graphics and much more to design each project with good principles of design and layout.

Some of the projects included in the course are the creation of advertising movies to be used on the Web, for kiosks, game creation and for instructional information. T-shirt decals, CD jackets, DVD labels, 3-fold brochures and note cards are but a few of the projects available as time permits.

Software packages used in this course include:

- Macromedia Director MX
- Adobe Illustrator CS2
- Adobe Photoshop CS2
- Adobe PageMaker 7.0
- Microsoft Office

Intro to CAD (1 semester A/B = .5 credit) Prerequisite: Math and Vocabulary Skills

This course will introduce the student to computer aided drafting utilizing **AutoCAD 2010**. Students will learn the skills necessary to create edit and print/plot a series of drawings on the computer.

Two basic types of drawings will be covered. Students will learn to read and draw simple Orthographic Projections (three 2-dimensional views of an object). The student's will then transfer the knowledge and skills they acquired to draw Isometric Projections (a pictorial view of an object). They will also learn proper dimensioning techniques used in industry today. The students will work on individual their assignments but are encouraged to help one in other to complete their work.

ADVANCED COMPUTER AIDED DRAFTING (1 semester = 1 credit)

This advanced graphics course is a continuation of the Introduction to Computer Aided Drafting. Students will do extensive work using AutoCAD 2000 to create assembly drawings, development drawings, working drawings and various pictorial drawings. The drawings assigned will cover a vast range of drafting problems, dealing with such components as gears, threads, tolerances, auxiliary views and notations in related technologies and shop process. The students will work on their individual assignments but are encouraged to help one another to complete their work.

APPLICATIONS OF TECHNOLOGY I (1 semester A/B = .5 credit) Grades 9, 10, 11, 12

This introductory course will provide a better understanding of technology, its functionality, its history and its involvement in society. An emphasis will be placed on showing students how technology can be used as a tool that will affect future courses and careers. Students will learn to use the wide variety of technical resources available to them in the school. Topics covered will include electronic research, the Internet and Microsoft Office productivity suite, including word processing (Microsoft Word), spreadsheet (Microsoft Excel), database (Microsoft Access) and presentation software (Microsoft PowerPoint). The emphasis will be placed on learning concepts and skills, which can be used in other subject areas.

DATABASE & ADVANCED OFFICE APPLICATIONS II (1 semester A/B = .5 credit) Grades 9, 10, 11, 12 Prerequisite: C or better in Applications of Technology I

The main focus in this course is Database Design. Students will experience all aspects of the database life cycle, from collecting user requirements to delivering a database application. Students get hands-on practice in a true-to-life database project as they move from a statement of requirements to a conceptual model, then to an entity-relationship model. They translate this into a relational database. Finally, they create, test, and document the associated database application. Students also examine career opportunities as database professionals.