

PROGRAM OF STUDIES

2021-2022



MINUTEMAN
HIGH SCHOOL REVOLUTIONIZED

Minuteman High School
758 Marrett Road
Lexington, MA 02421
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www.minuteman.org



Mission Statement

Minuteman collaborates with parents, communities, and business leaders to serve a diverse student body with multiple learning styles. Through a challenging integrated curriculum, our students develop the academic, vocational, and technical skills necessary to be productive members of a global community. We value life-long learning that fosters personal and professional development in a safe and respectful environment.

Minuteman is committed to preparing all students for success.

Philosophy

Career and Vocational/Technical Education is responsive to the economic needs of the workplace and the individual. By being engaged with employers, business, and post-secondary institutions, the graduates of Minuteman will be better prepared to contribute to the strength of our nation and the quality of life for its citizens. Minuteman recognizes the attainment of skills needed in the global economy is best accomplished through understanding the unique learning styles that lead to performance and individual student success.

Academic Pathways

Recommended Academic Course Pathways for Grades 9 and 10

Grade 9

4-Year College Pathway

- ENGLISH 9 [H]
- ALGEBRA 1
- ALGEBRA 2 [H]
- BIOLOGY 1 [H]
- WORLD HISTORY 1 [H]
- PHYSICAL EDUCATION
- WORLD LANGUAGE
- STUDIO IN ART
- STUDIO IN DIGITAL PHOTOGRAPHY & MEDIA ARTS
- KEYBOARD, GUITAR, CHORUS, INSTRUMENTAL LAB & MUSIC PRODUCTION

2-Year/4-Year College Pathway

- ENGLISH 9 [CP]
- ALGEBRA 1 [CP]
- BIOLOGY 1 [CP]
- WORLD HISTORY I [CP]
- PHYSICAL EDUCATION
- WORLD LANGUAGE
- STUDIO IN ART
- STUDIO IN DIGITAL PHOTOGRAPHY & MEDIA ARTS
- KEYBOARD, GUITAR, CHORUS, INSTRUMENTAL LAB & MUSIC PRODUCTION

2-Year College, Post Secondary Tech or College Pathway

- ENGLISH 9
- READING 9
- ALGEBRA 1A
- FOUNDATIONS OF CAREER TECH MATH
- GENERAL BIOLOGY 1
- WORLD HISTORY 1
- PHYSICAL EDUCATION
- WORLD LANGUAGE
- STUDIO IN ART
- STUDIO IN DIGITAL PHOTOGRAPHY & MEDIA ARTS
- KEYBOARD, GUITAR, CHORUS, INSTRUMENTAL LAB & MUSIC PRODUCTION

Grade 10

4-Year College Pathway

- AMERICAN LITERATURE 10 [H]
- ENGLISH COMPOSITION 10 [H]
- BIOLOGY II [H]
- GEOMETRY [H]
- CHEMISTRY II [H]
- U.S. HISTORY I [H]
- PHYSICAL EDUCATION
- WORLD LANGUAGE
- BLUEPRINT READING I AND II
- STUDIO IN ART
- STUDIO IN DIGITAL PHOTOGRAPHY & MEDIA ARTS
- STUDIO IN FILM PHOTOGRAPHY
- KEYBOARD, GUITAR, CHORUS, INSTRUMENTAL LAB & MUSIC PRODUCTION
- ACCOUNTING
- SKILLS USA

2-Year/4-Year College Pathway

- ENGLISH 10 [CP]
- LANGUAGE ARTS 10 [CP]
- ALGEBRA 1B
- GEOMETRY [CP]
- BIOLOGY 2 [CP]
- U.S. HISTORY 1 [CP]
- PHYSICAL EDUCATION
- WORLD LANGUAGE
- BLUEPRINT READING I AND II
- STUDIO IN ART
- STUDIO IN DIGITAL PHOTOGRAPHY & MEDIA ARTS
- STUDIO IN FILM PHOTOGRAPHY
- KEYBOARD, GUITAR, CHORUS, INSTRUMENTAL LAB & MUSIC PRODUCTION
- ACCOUNTING
- SKILLS USA

2-Year College, Post Secondary Tech or College Pathway

- ENGLISH 10
- LANGUAGE ARTS 10
- READING 10
- ALGEBRA 1B
- INTRO TO GEOMETRY
- GENERAL BIOLOGY 2
- U.S. HISTORY 1
- PHYSICAL EDUCATION
- WORLD LANGUAGE
- BLUEPRINT READING I AND II
- STUDIO IN ART
- STUDIO IN DIGITAL PHOTOGRAPHY & MEDIA ARTS
- STUDIO IN FILM PHOTOGRAPHY
- KEYBOARD, GUITAR, CHORUS, INSTRUMENTAL LAB & MUSIC PRODUCTION
- ACCOUNTING
- SKILLS USA

Recommended Academic Course Pathways for Grades 11 and 12

Grade 11

4-Year College Pathway

- BRITISH LITERATURE 11 [H]
- ENGLISH COMPOSITION I/ENG 101 [DE]
- ENGLISH COMPOSITION 11 [H]
- PRE-CALCULUS [H] [DE]
- ALGEBRA 2
- TRIGONOMETRY
- PHYSICS 1 [H]
- U.S. HISTORY II [H]
- U.S. HISTORY AFTER 1865 [H/DE]
- PHYSICAL EDUCATION
- WORLD LANGUAGE
- BLUEPRINT READING I AND II
- APPLIED CAD
- ENTREPRENEUR
- STUDIO IN ART
- STUDIO IN DIGITAL PHOTOGRAPHY & MEDIA ARTS
- STUDIO IN FILM PHOTOGRAPHY
- KEYBOARD, GUITAR, CHORUS, INSTRUMENTAL LAB & MUSIC PRODUCTION
- PUBLIC SPEAKING
- PRINCIPLES OF MANAGEMENT

2-Year/4-Year College Pathway

- ENGLISH 11 [CP]
- LANGUAGE ARTS 11 [CP]
- TRIGONOMETRY [CP]
- ALGEBRA 2 [CP]
- ALGEBRA 2A [CP]
- CHEMISTRY 1 [CP]
- APPLIED PHYSICS 1 [CP]
- U.S. HISTORY II [CP]
- PHYSICAL EDUCATION
- WORLD LANGUAGE
- BLUEPRINT READING I AND II
- APPLIED CAD
- ENTREPRENEUR
- STUDIO IN ART
- STUDIO IN DIGITAL PHOTOGRAPHY & MEDIA ARTS
- STUDIO IN FILM PHOTOGRAPHY
- KEYBOARD, GUITAR, CHORUS, INSTRUMENTAL LAB & MUSIC PRODUCTION
- PUBLIC SPEAKING
- PRINCIPLES OF MANAGEMENT

2-Year College, Post Secondary Tech or College Pathway

- ENGLISH 11
- LANGUAGE ARTS 11
- READING 11
- CONSUMER MATH
- FOCUS ON BIOLOGY AND CHEMISTRY
- GENERAL CHEMISTRY 1
- U.S. HISTORY II
- PHYSICAL EDUCATION
- WORLD LANGUAGE
- BLUEPRINT READING I AND II
- APPLIED CAD
- ENTREPRENEUR
- STUDIO IN ART
- STUDIO IN DIGITAL PHOTOGRAPHY & MEDIA ARTS
- STUDIO IN FILM PHOTOGRAPHY
- KEYBOARD, GUITAR, CHORUS, INSTRUMENTAL LAB & MUSIC PRODUCTION
- PUBLIC SPEAKING
- PRINCIPLES OF MANAGEMENT

Grade 12

4-Year College Pathway

- ENGLISH LITERATURE COMPOSITION [AP]
- CALCULUS A-B [AP]
- DRAMATIC LITERATURE [H]
- WORLD LITERATURE 12 [H] [DE]
- ADVANCED ALGEBRA
- CALCULUS [H]
- PHYSICS II [H]
- BIOLOGY II [H]
- MODERN ERA [H]
- INTRO TO PSYCHOLOGY/PSY 101 [DE]
- ANATOMY & PHYSIOLOGY [H]
- COLLEGE NUTRITION
- PHYSICAL EDUCATION
- WORLD LANGUAGE
- BLUEPRINT READING I AND II
- APPLIED CAD
- ENTREPRENEUR
- STUDIO IN ART
- STUDIO IN DIGITAL PHOTOGRAPHY & MEDIA ARTS
- STUDIO IN FILM PHOTOGRAPHY
- KEYBOARD, GUITAR, CHORUS, INSTRUMENTAL LAB & MUSIC PRODUCTION
- ACCOUNTING
- PERSONAL FINANCE
- SKILLS USA
- BUSINESS MANAGEMENT

2-Year/4-Year College Pathway

- ADOLESCENT LITERATURE 12 [CP1]
- URBAN READINGS 12 [CP1]
- LITERATURE, MEDIA, AND SOCIETY [CP1]
- ALGEBRA 2B [CP]
- ADVANCED ALGEBRA
- PHYSICS I OR II [CP]
- APPLIED PHYSICS I OR II
- CHEMISTRY II
- INTRO TO ANATOMY & PHYSIOLOGY
- NUTRITION AND THE BODY
- COLLEGE NUTRITION
- INTRO TO PSYCHOLOGY
- U.S. HISTORY AND THE CINEMA
- CIVICS
- PHYSICAL EDUCATION
- WORLD LANGUAGE
- BLUEPRINT READING I AND II
- ENTREPRENEUR
- STUDIO IN ART
- STUDIO IN DIGITAL PHOTOGRAPHY & MEDIA ARTS
- STUDIO IN FILM PHOTOGRAPHY
- KEYBOARD, GUITAR, CHORUS, INSTRUMENTAL LAB & MUSIC PRODUCTION
- ACCOUNTING
- PERSONAL FINANCE
- SKILLS USA
- BUSINESS MANAGEMENT

2-Year College, Post Secondary Tech or College Pathway

- LITERATURE, MEDIA & SOCIETY [CP2]
- LANGUAGE ARTS 12
- READING 12
- INTEGRATED MATH
- BUSINESS MATH
- NUTRITION AND THE HUMAN BODY
- CIVICS
- PHYSICAL EDUCATION
- WORLD LANGUAGE
- BLUEPRINT READING I AND II
- APPLIED CAD
- ENTREPRENEUR
- STUDIO IN ART
- STUDIO IN DIGITAL PHOTOGRAPHY & MEDIA ARTS
- STUDIO IN FILM PHOTOGRAPHY
- KEYBOARD, GUITAR, CHORUS, INSTRUMENTAL LAB & MUSIC PRODUCTION
- ACCOUNTING
- PERSONAL FINANCE
- SKILLS USA
- BUSINESS MANAGEMENT

Minuteman High School Profile

About Minuteman

Minuteman High School is located in Lexington, Massachusetts on a 65-acre campus just west of Route 128/I-95 at the intersection of Massachusetts Avenue and Marrett Road (Route 2A).

Minuteman is a four-year public high school serving a ten town school district plus many cities and towns in Eastern Massachusetts. The school is accredited by the New England Association of Schools and Colleges, and all of its programs operate under MGL Ch. 74 and the auspices of the Massachusetts Department of Elementary and Secondary Education.

Academic classes and career major classes are delivered on a weekly, rotating system (one week academic, one week career major). Enrollment is approximately 600 students across eighteen career majors.

Curriculum Opportunities

College preparatory courses in Math, Science, English, World Languages, Art and honors courses are offered to students who successfully test to the appropriate level.

The Cooperative Education program allows qualifying Juniors and Seniors to work for pay in their field of study approximately 40 hours per week during the career major week.

In addition to a high school diploma, graduating Seniors are eligible for industry credentials. In some career majors, hours may be applied toward licensing and apprenticeship program requirements.

Programs allow qualified students to: test out of a course, gain college credit while at Minuteman, or take a course through independent study/internet.

Letter Grade System

A+ = 98+	B+ = 88-89	C+ = 78-79	D+ = 68-69
A = 94-97	B = 84-87	C = 74-77	D = 64-67
A- = 90-93	B- = 80-83	C- = 70-73	D- = 60-63
F = below 60			

Graduation Requirement

By Subject and Credits

English	16
Math	8
Science	8
Social Studies	8
Health & Physical Ed	8
Electives (including World Language)	8
Career Exploration	6
Technical Study	42

Course Levels

Honors

Honors courses combine rigorous and challenging instruction with high expectations for student commitment, participation, and achievement. The workload and pacing of these classes corresponds with those expectations. Those pursuing an academic pathway toward successful transition to a four-year college or university should enroll in these classes. Placement is contingent on departmental approval.

College Prep 1

College Prep 1 courses combine challenging instruction with expectations consistent with what is required for success in a two or four year college or university. Placement is contingent on departmental approval.

College Prep 2

College Prep 2 courses utilize various instructional methods to remediate student needs and address their learning differences in each respective discipline.

Dual Enrollment Opportunities

Motivated Minuteman students don't have to wait to begin their college experience. The Middlesex/Minuteman Dual Enrollment Academy allows qualified students to earn college credits while in high school. Most students at Minuteman will pursue dual enrollment for Minuteman credit and Middlesex Community College credit only under the following circumstances:

- Students may participate only in the courses taught at Minuteman that have been certified for dual enrollment by Middlesex Community College (or any other provider with whom we may become affiliated).
- Students must have a minimum 92% attendance for the year prior to enrollment.
- Students must have a minimum 2.5 overall GPA.
- Students must have a minimum 85% in subject area of the course for the year prior to enrollment.
- Students must earn a qualifying score on the Accuplacer.
- Students must be recommended for the course by their prior year same subject area teacher.
- Students must receive the approval and signature of their Guidance counselor.
- Students are responsible for all tuition and fees.

Any variation from the pathway stated above, in which students will be allowed to receive Minuteman credit and Middlesex credit by attending classes at the college, will be considered only on a case-by-case basis, according to, but not limited to the following stipulations:

- The Middlesex course offering must allow the student to fulfill graduation credit requirements not possible or available through Minuteman course offerings.
- The Middlesex course offering must not interrupt or interfere with the regularly scheduled school day (i.e. no early dismissals or later arrivals).
- Student must have a minimum 96% attendance for the year or semester prior to enrollment.
- Students may begin taking courses no earlier than the summer before junior year
- Students must have a minimum 3.3 overall GPA.
- Students must have a minimum 90% in subject area of the course for the year or semester prior to enrollment.
- Students must be recommended for the course by their prior year or semester same subject area teacher.
- Students must receive the approval and signature of their Guidance counselor.
- Students may enroll in no more than two courses per semester.
- Students are responsible for all transportation, tuition, fees, and any other associated costs.
- While participating in this version of the dual enrollment arrangement, students must continue to meet all eligibility requirements for the program.
- Minuteman students must sign a waiver permitting Minuteman guidance counselors or the dual enrollment lead teacher to be in touch with MCC faculty to monitor students' progress. • Bi-weekly communication will be made if host college/university notifies Minuteman guidance counselor that a student is in jeopardy of failing a course.
- If a student fails a course his/her senior year, he/she will be required to repeat that course at Middlesex.

Academic Course Descriptions

READING PROGRAM

Within the current global economy, proficient reading skills provide the vital competitive edge needed in the increasingly competitive job market. Reading classes at Minuteman are designed to ensure our students are properly prepared to enter the workforce. Some students are struggling readers who benefit from intensive instruction to improve reading ability. Struggling readers are those students who labor with the components of literacy. These components include: comprehension, vocabulary, fluency, decoding, and phonemic awareness.

Minuteman identifies struggling readers with multiple measures of assessment. A student will be placed in a reading class based on the following Target Scores:

Assessment	Target Score
Reading Inventory (RI)	Lexile score of 1050
Diagnostic Assessment of Reading: Word Recognition Subtest	Level 8
Mastery of Meaning Vocabulary Pre-Test	65%
Oral Fluency Words Per Minute (WPM)	150 WPM

If a student meets or exceeds all the Target Scores, then he or she is a successful reader who does not need an intensive remedial reading intervention. If a student cannot meet any of the Target Scores, he or she will be placed in a reading class.

Many students show proficiency in one component of reading, while falling far below average in another component. In these cases, the Reading Specialist will use testing data and input from English teachers, Special Education professionals, Guidance Counselors, parents, and the student, to determine whether placement in a Reading class is appropriate.

Once a new student is placed in a reading class, (according to prescriptions from an Individual Educational Plan) the criterion to exit out of the reading program is demonstrating attainment of the target scores. Since the inception of the reading program, students have displayed remarkable growth in reading and have dramatically improved their readiness for transition into future careers.

GRADE 9 ENGLISH

All English courses feature the Collins Writing Program with Focus Correction Areas (FCA).

The Collins Writing System, which features Focus Correction Areas (FCA) is being applied across all academic and vocational disciplines as many teachers have actively incorporated the concepts into their teaching practices.

English 9 • Honors **Course: ENG 1001**

This honors level course features instruction using a variety of genres, both contemporary and classic. The short story, novel, drama, poetry, nonfiction, and film will be examined. Independent reading activities will adhere to a “book club” model. Composition assignments will follow the John Collins Writing Program with Focus Correction Areas (FCA), and they will proceed in a pattern of increasing levels of sophistication. In addition to grammar, mechanics, and MCAS preparation, emphasis will be placed on active listening, speaking, and study skills, as well as reading comprehension, literary analysis, creative writing, research, use of technology, and connections between the studied material and real life. In the third and fourth quarters of the year, a number of activities will be pursued that integrate the students’ experiences and studies in their technical majors.

English 9 • College Prep 1 **Course: ENG 1002**

This course features the study of a variety of genres, including the short story, novel, drama, poetry, and nonfiction. Reading comprehension and connections between the studied material and real life are stressed. Composition assignments will follow the John Collins Writing Program with Focus Correction Areas (FCA). In addition to grammar, mechanics, and MCAS preparation, emphasis will be placed on the following: study skills, vocabulary development, research, and speaking and listening skills. A number of academic-vocational activities will be pursued in order to enhance students’ experiences and studies in their technical majors. The course will help students to build upon and sharpen skills in reading, writing, and language areas.

English 9 • College Prep 2 **Course: ENG 1003**

This course will service those students whose reading, writing, and communication skills require remediation using a variety of instructional methods. Each student will work to refine and build skills necessary to succeed both in school and in the community. Through the John Collins Writing Program and Focus Correction Areas, emphasis will be placed specifically on the writing process. The major areas addressed include grammar, mechanics, writing with a clear focus, coherent organization, and incorporating sufficient details. The novel, short story, drama, poetry, nonfiction, and film will be examined. Students will improve and develop reading comprehension and analytical skills through a variety of before, during, and after-reading strategies. Classroom discussion, both in the small and large group context will frequently take place to enrich the students’ oral communication skills. Students will work to improve their study skills and organization habits as they prepare for the MCAS English Language Arts Test to be taken sophomore year. Throughout the academic year, the course will feature a variety of activities that incorporate the students’ experiences and studies in their vocational majors.

Reading 9 • College Prep 2 **Course: ENG 1013**

This is a comprehensive reading intervention program designed to improve student literacy skills. This course combines computer software, small group instruction, and high-interest independent reading, to improve decoding, fluency, vocabulary, and reading comprehension.

Academic Course Descriptions • Grade 9

GRADE 9 MATHEMATICS

Algebra 2 • Honors

Course: MAT 1011

This course further examines algebraic relationships requiring manipulative skills and mathematical abstraction. It includes an examination of functions, logarithms, circles, trigonometry, transformations, probability, statistics, matrices, theory of equations, binomial theorem, and mathematical induction.

Prerequisites: L1 Geometry and by permission of Dept. Chair.

Algebra 1 • College Prep 1

Course: MAT 1002

This course is designed to prepare a student for college admission. Topics included are integers, linear equations and inequalities, factoring, graphing linear sentences, systems of equations, factoring, systems of inequalities, and the quadratic formula.

Foundations of Career & Technical

Mathematics • College Prep 2

Course: MAT 1003

This is to be taken in conjunction with Algebra 1A. The emphasis will be on math skills: whole numbers, fractions, decimals, percentages, and measurement. The goal of the course is to prepare the students to be successful in their vocational areas as well as in further math courses. Students will work at their own individual pace through the topics as well as work on vocational related problems and activities in groups. This math course is designed for students who would benefit from a strong emphasis on MCAS preparation and additional support in basic math concepts.

Algebra 1A • College Prep 1

Course: MAT 1012

This is the first in a two year Algebra 1 sequence. Algebra skills will be developed through hands on activities and real life applications. topics will include: properties of real numbers, solving linear equations, proportions, basic statistics, and data collection. This math course is designed for students who would benefit from a strong emphasis on MCAS preparation and additional support in basic math concepts.

GRADE 9 SCIENCE

Biology 1 • Honors

Course: SCI 1031

This course is for students planning on attending a 4- year college where a high understanding of biology and the scientific research process is expected. Topics covered include ecology, biomolecule structure and function, and cellular processes. Within these areas, students are expected to apply mathematical and engineering practices to create models, interpret and analyze data trends, and develop explanations. Students in this course must possess strong mathematical skill and an interest in going beyond the standard high school curriculum. Students will engage in extensive scientific reading and writing with an emphasis on clear communication.

Biology 1 • College Prep 1

Course: SCI 1002

This is the first year of a 2- year course with a strong emphasis on laboratory techniques and data gathering skills, designed to prepare students for a 2 or 4 year college. Topics will be covered in depth and workload will be consistent with that of a college bound student. First year topics will include chemistry of life, cells, ecosystems, and cell division. These topics are consistent with the State frameworks in biology.

General Biology 1 • College Prep 2

Course: SCI 1003

This is the first year of a two- year preparation designed to equip students with the necessary skills to pass the biology portion of the science MCAS exam. The focus of this first year course will be to cover the topics of basic chemistry, cells, ecosystems, and cell division. A strong emphasis will be placed on laboratory participation and techniques.

GRADE 9 SOCIAL STUDIES

World History • Honors

Course: HST 1101

This course is designed to provide advanced students with analytic and problem solving skills that can be critically applied when assessing problems in our world today. Students will engage in an in-depth study of world cultures from the decline of Rome to the Age of Industrialization. This program of area studies and world affairs will require students to develop the necessary skills to make informed decisions and to present their ideas clearly in writing. Department permission is required.

World History I (500–1800 AD) • College Prep 1

Course: HST 1102

Students will examine the development of world civilizations starting with the fall of the Roman Empire. Some of the civilizations examined through primary and secondary sources include empires from the Middle East, Africa, India, Chinese dynasties and the pre-Columbian civilizations that existed in Central and South America. Students will critically compare and contrast important political, economic and religious developments of this period, including the increasing global conflicts between Christianity and Islam. Students will complete the course by studying the development of democratic, scientific, and secular thought and evaluating its influence on major events in Europe and North America.

World History I (500–1800 AD) • College Prep 2

Course: HST 1103

Students will examine the development of world civilizations starting with the fall of the Roman Empire. Some of the civilizations examined through primary and secondary sources include empires from the Middle East, Africa, India, Chinese dynasties and the pre-Columbian civilizations that existed in Central and South America. Students will critically compare and contrast important political, economic and religious developments of this period, including the increasing global conflicts between Christianity and Islam. Students will complete the course by studying the development of democratic, scientific, and secular thought and evaluating its influence on major events in Europe and North America.

GRADE 9 HEALTH/P.E.

Physical Education

Course: GYM 1003/2003

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GRADE 10 ENGLISH

American Literature 10 • Honors

Course: ENG 2001

In this honors-level course, students will study three major works of American literature: *The Great Gatsby*, *Death of a Salesman* and *The Catcher in the Rye*. All will be studied in their unique historical and social context. Through careful reading and close attention to each author's unique style and choices, students will sharpen their skills in literary analysis and, at the same time, gain insight into the ever-evolving American experience. In addition to making connections and discerning parallels between these three canonical texts, students will be required to make similar connections to selected excerpts of literary criticism and various shorter pieces spanning multiple genres. Writing assignments will follow the John Collins Writing Program with Focus Correction Areas gradually increasing in level of sophistication. Emphasis is also placed on MCAS-style long composition preparation. This course must be taken concurrently with English Composition 10.

English Composition 10 • Honors

Course: ENG 2011

This honors-level course is designed to engage students in various modes of written and oral expression. Written modes will include: detailed literary analysis in essay form, persuasive writing, personal reflection, and creative writing. Writing assignments will follow the John Collins Writing Program with Focus Correction Areas gradually increasing in level of sophistication. Oral modes will include: group debates, large and small group discussions, and individual and group presentations. A variety of contemporary and classic genres including the novel, short story, drama, non-fiction, and film will be explored, including *Their Eyes Were Watching God* and *12 Angry Men*. Independent reading will use a "book club" model. This course must be taken concurrently with American Literature 10 Level 1 Honors. English Department permission is required.

English 10 • College Prep 1

Course: ENG 2002

This course enhances skills in critical thinking, reading comprehension, literary analysis and analytical writing as students prepare for the MCAS exam. Over the course of the year, students will read a variety of myths and legends from around the world connecting them to our own society. Students will study poetry as it connects to art and mythology. Students will read *Fences*, by August Wilson or *Death of a Salesman*, by Arthur Miller. Analytical skills will be further developed with a selection of novels including *Logan's Run*, by William F. Nolan and George Clayton Johnson, *The Pearl* and/or *Of Mice and Men*, by John Steinbeck. In addition, a variety of study techniques including note-taking, listening, and organizational skills will be introduced and practiced throughout the year. Finally, composition assignments will follow the John Collins Writing Program with Focus Correction Areas (FCA). This course must be taken concurrently with Language Arts 10 Level 2 College Prep.

Language Arts 10 • College Prep 2

Course: ENG 2012

In this course, primarily non-fiction reading materials will be used to examine the structure and style of a variety of non-fictional genres including the following: personal narratives/memoirs, biographies, informative essays, newspapers, magazine and trade journal articles, persuasive essays and letters, and demonstration essays. Students will develop writing skills required for MCAS Open Response and Composition. In addition, they will write for different purposes such as personal narratives, persuasive essays and letters, demonstration speeches and brochures. Composition assignments will follow the John Collins Writing Program with Focus Correction Areas (FCA). Students will develop oral communication skills through discussion, debate, and speeches. This course must be taken concurrently with English 10 Level 2 College Prep.

Academic Course Descriptions • Grade 10

English 10 • College Prep 2 **Course: ENG 2003**

This course services those students whose writing and reading skills require remediation. Students will regularly write a variety of responses often reacting to a piece of literature. The course will commence with the writing of various paragraph types and will move toward extended responses to literature. Students will follow the writing process with an emphasis on the John Collins Writing Program. This English course is designed for students who would benefit from a strong emphasis on MCAS preparation and additional support in basic English concepts. The Focus Correction Areas which will concentrate on grammar, punctuation, sentence structure, and other important aspects of writing. The FCAs will also emphasize content, including comprehension of literature, ability to extract information from a text, and making connections with reading. This course must be taken concurrently with Language Arts 10 Level 3.

Language Arts 10 • College Prep 2 **Course: ENG 2023**

This course is a continuation of the English 9 Level 3 curriculum and emphasizes basic reading, literature, and writing skills in a sequential manner. Using a thematic approach, units such as “*Teen Issues*,” “*Reading the Newspaper*,” “*Business Letter Writing*,” and health/social issues such as the “*Dangers of Smoking*,” and “*Prisoners Wrongfully Accused*” are taught. Study skills, grammar, vocabulary, and oral presentation skills pertaining to academic/vocational integration are reinforced throughout the year. Literature under study includes *Of Mice and Men* and *Shawshank Redemption*. In addition, a major focus is placed on MCAS preparation: Answering open response questions, understanding literary terms, learning test taking strategies, and writing the five paragraph essay are emphasized. This course is ideal for students interested in reinforcing basic skills through high-interest, thematic units incorporating hands-on activities. This course must be taken concurrently with English 10 Level 3.

Reading 10 • College Prep 2 **Course: ENG 2013**

This course continues to improve student’s reading skills in the areas of decoding, fluency, vocabulary, and reading comprehension. The course combines computer software, high-interest independent reading, and reading instruction tailored to students’ needs. In addition, a focus is placed on MCAS preparation: Understanding literary terms, learning test taking strategies, and writing the narrative essay are emphasized.

GRADE 10 MATHEMATICS

Geometry • Honors

Course: MAT 2001

This course places emphasis on mathematical theory in manipulating geometric concepts. Topics include Euclidean proof, circles, area and volume of solids, coordinate and transformational geometry, parallelism, congruent and similar figures, and right triangle trigonometry. Prerequisites: Level 1 Algebra I and by permission of Department Chair.

Geometry • College Prep 1

Course: MAT 2002

Topics covered are points, lines, planes, space, angles, triangles, congruence, similarity, perpendiculars, parallels, polygons, area, circles, right angles, volume, coordinate geometry and construction. Prerequisite: Algebra I.

Algebra 1B • College Prep 2

Course: MAT 2012

This is the second in a two year Algebra 1 sequence. Again Algebra skills will be developed through hands on activities and real life applications. Topics covered will include graphing linear equations, inequalities, and systems of equations. Completion of this course will be the equivalent of completing Algebra 1.

Introduction to Geometry • College Prep 2

Course: MAT 2003

Introduction to Geometry is to taken in conjunction with Algebra 1B. This geometry course is designed for students who would benefit from a strong emphasis on MCAS preparation and additional support in basic math concepts. Basic geometry topics will include: angles, area, volume, and similarity. The course will offer a variety of problem solving and hands-on activities.

GRADE 10 SCIENCE

Chemistry 2 • Honors

Course: SCI 2001

This is a continuation of Honors Chemistry I. Students will explore thermochemistry, gases and condensation, solutions, chemical equilibrium, acids and bases, electrochemistry, and a brief introduction to organic chemistry in a hands-on laboratory environment. Significant emphasis will be placed on integrating mathematics into this rigorous curriculum; including preparation for MCAS and SAT Subject Test in Chemistry. The course places strong importance on laboratory techniques and reporting skills.

Biology 2 • Honors

Course: SCI 2021

This is the second year of a biology course. This rigorous and challenging course is designed for students who plan to enroll in a four year college. Topics include human anatomy, genetics, evolution, and the classification of living organisms. These topics are consistent with State frameworks in biology. There are high expectations for student participation and achievement for this course.

Biology 2 • College Prep 1

Course: SCI 2002

This is the second year of college preparatory biology. Students will continue to develop laboratory skills consistent with a college level curricula. Topics will include genetics, evolution, and environmental issues. These topics are consistent with the State frameworks in biology. Prerequisite for this course is the successful completion of college prep Freshman Biology.

General Biology 2 • College Prep 2

Course: SCI 2003

This second- year course is a continuation of the standards in preparation for the state MCAS exam in biology. The topics for this year will focus on genetics, evolution, and environmental issues. Prerequisite: Freshman General Biology. This science course is designed for students who would benefit from a strong emphasis on MCAS preparation and additional support in basic science concepts.

GRADE 10 SOCIAL STUDIES

United States History 1 • Honors

Course: HST 2101

Honors United States History 1 is a survey course that addresses themes in our country's history from its origins to the Civil War. The development of analytical thinking and problem solving skills will be fostered through student research and demonstrated through writing assignments and class presentations.

United States History 1 • College Prep 1

Course: HST 2102

This two year course, designed for the college bound student, surveys United States history from our nation's origins to the Civil War. This course provides students with the necessary skills to assess with the crucial issues of our country's history and the role of the United States in past world events. Students will be expected to arrive at conclusions based on informed judgment and to present their viewpoints in clear and persuasive ways.

United States History 1 • College Prep 2

Course: HST 2013

A basic United States History course designed to assist students with improving their overall content knowledge through differentiated and specialized instruction. This course will use a multi-sensory approach to introduce students to a wide variety of History concepts. Students will examine our nation's history from its origins to the Civil War. Study skills, such as note-taking, reading comprehension strategies, mapping, and overall organization will be emphasized.

GRADE 10 HEALTH/P.E.

Physical Education

Course: GYM 2003

GRADE 11 ENGLISH

ENG 101 • English Composition I Honors/Dual Enrollment

English Composition 1 focuses on developing students' academic writing, close reading, and critical thinking skills. Using a writing process that includes pre-writing, drafting, instructor and peer feedback, and revision, students will produce written essays with arguable thesis statements and appropriate use of standard English. Students will produce a total of 18-24 pages of formal polished writing in three or more source-based essays.

British Literature 11 • Honors Course: ENG 1021

This honors-level course of study is designed to further advance students' skills in grammar and writing. Various types of writing include expository, creative, persuasive, and narrative. All writing follows the John Collins Writing Program. Vocabulary building will be part of a larger SAT preparatory unit that includes sentence completion exercises, reading comprehension practice, and SAT-style essay writing. Study skills, as well as note taking skills are emphasized. The course also features an in-depth exploration and practice of literary criticism coupled with a contemporary British poetry unit that develops critical thinking and responding. A sampling of the different schools of literary criticism includes Russian Formalism, American New Criticism, Deconstructionism, and Reader Response Theory. To encourage critical thinking even further, the course includes a unit that addresses the role technology has played and will play in society. The themes in *Frankenstein* serve as discussion starters. Literary pieces studied may include works by Huxley, Orwell, Shelley, Shakespeare, Blake, Wordsworth, Byron, and many contemporary British poets. This course must be taken concurrently with English Composition 11 Level 1 Honors. English Department permission is required.

English Composition 11 • Honors Course: ENG 1011

This honors-level course features instruction using a variety of types of literature and modes of communication within the context of the experiences and traditions of Great Britain. Classic and contemporary fiction titles as well as pertinent nonfiction selections will be assigned. Writing assignments will follow the John Collins Writing Program with Focus Correction Areas, and they will proceed in a pattern of increasing levels of sophistication. In addition to grammar, mechanics, and some PSAT/SAT preparation, emphasis will be placed on literary analysis, research, use of technology, and connections between the studied material and real life. As much as possible, activities will be pursued that integrate the students' experiences and studies in their technical majors. This course must be taken concurrently with British Literature 11 Level 1 Honors. English Department permission is required.

English 11 • College Prep 1 Course: ENG 1012

This course consists of a variety of readings such as novels, short stories, excerpts from novels, dramatic works, and poetry, which explore current and historical issues in American society. Spelling, fundamental grammar, and writing skills will be integral parts of each unit. Students will also continue to practice the John Collins Writing Program, as established and reinforced in freshman and sophomore English courses. Note taking skills, such as Split page/ Reflective notes and the Cornell 2-6-2 method are also emphasized to maximize reading comprehension. Films are also used to accommodate the visual learning style. The works are selected on the basis of their suitability for each class. Major works covered may include: *The Road*, *Fahrenheit 451*, *Brave New World*, and *The Night Thoreau Spent in Jail*. This course must be taken concurrently with Language Arts 11 College Prep 1.

Academic Course Descriptions • Grade 11

Language Arts 11 • College Prep 1

Course: ENG 1022

This course focuses on preparing students for life after high school graduation. Students complete various writing assignments including the personal narrative, an essay of comparison, and a vocational career research paper. Composition assignments follow the John Collins Writing Program with Focus Correction Areas. Students will read and analyze Ned Vizzini's autobiography, *Teen Angst? ...Naahh!.* To end the year students will learn how to complete both employment and college applications and produce a polished résumé. This course must be taken concurrently with English 11 College Prep 1.

English 11 • College Prep 2

Course: ENG 1023

The English 11 course concentrates on building students' skills in reading, writing, communication and critical thinking. The course will feature the major literary genres including the novel, drama, short stories, biography, poetry and various nonfiction pieces. Written responses will follow the John Collins Writing Program. The course will cover four types of writing: narrative, persuasive, descriptive and expository. Additionally, students will write and reflect on their vocational and technical majors. Students will develop their oral communication skills through daily class discussions both in small and large group settings; there will be class presentations periodically. Students will learn to think critically by analyzing both fiction and nonfiction while making personal connections. This course must be taken with Language Arts 11 College Prep 2.

Language Arts 11 • College Prep 2

Course: ENG 1043

This course focuses on word study (vocabulary,) comprehension, study techniques, composition, vocation-related applied skills, and grammar and usage. These skills are all taught through various short stories and poems. With a primary focus on the short story, students will be able to use literature to make personal connections to everyday life. Poetry is used to enhance the understanding and appreciation of the short story. Interdisciplinary units include: The Civil War, World War II, The Civil Rights Movement, and The Cold War. Students will gain an appreciation for literature, and at the same time, gain the necessary skills to write with purpose and clarity. This course is taken concurrently with English 11 College Prep 2.

Reading 11 • College Prep 2

Course: ENG 1033

This course employs Read 180, Rewards Plus for Social Studies, Jamestown Fluency, and Reading Counts to improve student literacy. By developing word attack, fluency vocabulary, and comprehension skills, students will demonstrate improvement through formal and informal assessments. This course emphasizes non-fiction literature.

GRADE 11 MATHEMATICS

Precalculus • Dual Enrollment

Course: MAT 1041

Topics in preparation for Calculus include the real numbers, functions and their graphs, composition, inverse and circular functions, right triangle trigonometry and applications, exponential and logarithmic functions; the complex numbers, quadratic functions, conic sections, synthetic division, zeros of polynomials, rational functions and their graphs, and matrix solutions to linear systems. A scientific calculator is required. Prerequisite: by permission of Department Chair

Precalculus • Honors

Course: MAT 1021

Topics in preparation for Calculus include the real numbers, functions and their graphs, composition, inverse and circular functions, right triangle trigonometry and applications, exponential and logarithmic functions; the complex numbers, quadratic functions, conic sections, synthetic division, zeros of polynomials, rational functions and their graphs, and matrix solutions to linear systems. A scientific calculator is required. Prerequisite: by permission of Department Chair

Trigonometry • College Prep 1

Course: MAT 1022

This course covers the trigonometric functions, trigonometric identities, formulas, vectors, applied geometric problems, sine wave analysis and complex numbers. Additional preparation in content and technique for the math portion of college entrance exams and the American College Test will be offered.

Prerequisite: Algebra 2

Algebra 2 • College Prep 1

Course: MAT 1032

This course continues to prepare a student for college admission. Topics covered are systems of equations, advanced polynomials, functions, fractional numbers, factoring, quadratics, exponentials, and logarithms.

Prerequisite: Geometry.

Algebra 2A • College Prep 1

Course: MAT 1042

This is the first in a two year Algebra 2 sequence. This is a college- prep level course (level 2) when successfully followed by Algebra 2B. The course will start with a thorough review of Algebra I topics and continue with new topics to include: functions and operations with functions, systems of equations and inequalities as well as matrices. There will be an emphasis on problem-solving and applications. Students must achieve a grade of C or better in Algebra I. .

Integrated Math

Course: MAT 1013

This course is designed to teach financial literacy. Students will learn how to be a healthy skeptic and use caution. They will learn concepts and habits that can be used throughout life beyond high school including credit scores, risk-based lending, checking and savings accounts, installment debt, budgeting, spending and saving, renting, buying a home, organized gambling, impact of taxes as students and later, donating to charities, paying for college, insurance, bankruptcy, investing and retirement.

Academic Course Descriptions • Grade 11

GRADE 11 SCIENCE

Physics 1 • Honors/Dual Enrollment

Course: SCI 1041

[PHY 151] The first in a two-semester algebra/trigonometry-based physics sequence. Emphasis is placed on understanding through problem solving. Topics include the metric system, kinematics, Newton's laws, momentum, energy, power, rotation, buoyancy, and simple harmonic motion. 3 hours lecture/2 hours laboratory.

Physics 1 • Honors

Course: SCI 1011

This course is designed for students with a strong background in mathematics. The course will provide the student with a clear and logical presentation of the concepts and principles of physics. Class discussion and problem solving will strengthen a student's ability to score well on the SAT or other standardized tests. Students will be exposed to practical examples that demonstrate the role of physics in other disciplines. Topics to be covered include Kinematics, Newtonian Mechanics, as well as Energy and Gravitational Field Theory.

Applied Physics 1 • College Prep 1

Course: SCI 1022

This course uses a modular system of instruction designed for technicians in the areas of electronics, computer science, automotive mechanics, drafting, HVAC, electromechanical, and electrical. The program emphasizes technical principles with hands-on learning to apply the basic principles of physics to specialized areas of modern technology. Unified concepts in the areas of mechanical, fluid, thermal, and electrical systems will be stressed. Strong emphasis will be placed on laboratory techniques and reporting skills.

Biology 2 • Honors

Course: SCI 1021

This rigorous and challenging course is designed for students who plan to enroll in a four year college. Topics include human anatomy, genetics, evolution, and the classification of living organisms. These topics are consistent with State frameworks in biology. There are high expectations for student participation and achievement for this course. Students are expected to complete research projects and present in front of their peers. They will participate in laboratory activities consistent with those they might perform in a college setting.

Chemistry 1 • Honors

Course: SCI 1001

This course is designed for students planning to attend a 4-year college or university where a high level of understanding of inorganic chemistry is imperative. Major concepts include matter, atomic structure, ion formation, covalent compounds, nomenclature, solutions, the mole, and stoichiometry. Strong emphasis will be placed on laboratory techniques and reporting skills. This science course is designed for students who would benefit from a strong emphasis on MCAS preparation and additional support in basic science concepts.

Chemistry 1 • College Prep 1

Course: SCI 1012

This course is designed for students who intend to go on to a 2 or 4 year college, technical school, or nursing school. Students who would benefit from an in-depth chemistry background in preparation for post-secondary training are encouraged to apply. Concepts to be covered will include matter, atomic structure, ion formation, covalent compounds, nomenclature, chemical reactions, the mole, and acids and bases. Strong emphasis will be placed on laboratory techniques and reporting skills.

Focus on Biology & Chemistry • College Prep 2 **Course: SCI 1023**

This course of study will review the wide range of concepts and content covered in Biology 1 and 2. A strong emphasis will be placed on the State Frameworks in biology working toward success on MCAS. Hands on activities and lab work will support open response type writing. The second half of the course will introduce concepts in chemistry for future course work.

General Chemistry • College Prep 2 **Course: SCI 1013**

This course provides students with a hands-on approach to the fundamentals of chemistry. Student observations based on laboratory experiments and demonstrations will be addressed in both class and small group discussions. Major topics will include the study of matter, atoms, formation of ions and ionic compounds, molecules, chemical reactions, solutions, and acids and bases. Basic math skills will be introduced to illustrate the significance of mathematics in this field of science.

GRADE 11 HISTORY

United States History After 1865 • **Honors/Dual Enrollment** **Course: HST 1221**

A survey and analysis of the history of the United States and its institutions from the end of the Civil War through the 20th century. This course explores the historical, cultural, political, economic, and institutional forces and events that shaped United States during this period. Topics may include the reunification of north and south, western expansion, and the growth of national power in a global context.

United States History 2 • Honors **Course: HST 1011**

Honors United States History 2 is a survey course that addresses historical themes in our country's past from the end of the Civil War to the present. The development of analytical thinking and problem solving skills will be fostered through student research and demonstrated through writing assignments and class presentations. In addition, strong emphasis will be placed on organizational skills, previewing and other reading tactics, note-taking, as well as map reading. Department permission is required.

United States History 2 • College Prep 1 **Course: HST 1012**

Designed for the college bound student, this program provides students with the necessary skills to deal with the crucial issues of our country's past and present. This course is a continuation of United States History 1 and will examine topics from the closing of the frontier to the modern challenges facing our nation today. This class will teach students to arrive at conclusions based on informed judgments and to present their viewpoints in clear and persuasive ways.

United States History 2 • College Prep 2 **Course: HST 1013**

This course will examine our nation's history from the closing of the frontier to the present day. Heavy emphasis will be placed on organizational skills such as note-taking, previewing, reading strategies, and critical writing. This course should enable students to arrive at conclusions based on informed judgement and to present their viewpoints in clear and persuasive ways.

GRADE 11 HEALTH/P.E.

Physical Education **Course: GYM 1003**

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GRADE 12 ENGLISH

ENG 140 • Early World Literature Honors/Dual Enrollment

This course introduces students to a survey of major literary works from the classical world through the 16th century. Readings will feature various literary genres and themes, with an emphasis on gaining insights into the foundations of our contemporary global civilization. Selections vary and may include the Bible, ancient Greek drama, Buddhist and Asian philosophies, medieval literature, and major figures such as Lao Tzu, Rumi, Shakespeare and others.

Dramatic Literature 12 • Honors Course: ENG 2021

This honors-level course explores the structure and content of dramatic works as well as the evolution of drama from the ancient to the contemporary period. Detailed literary analysis in essay form and creative writing will be required. Composition assignments will follow the John Collins Writing Program with Focus Correction Areas (FCA). Dramatic presentations are an integral part of the course as students explore the role of the director, set designer, actor, and playwright. Writing, speaking, and research activities will also be linked to students' technical studies. Titles will include: *Prometheus Bound*, *Doctor Faustus*, *No Exit*, and *The Odd Couple*. English Department permission is required.

Adolescent Literature 12 • College Prep 1 Course: ENG 2022

Basic English skills are incorporated into this survey course which concentrates on the contemporary adolescent experience, as well as the same experience through the decades. Articles, essays, and complete novels explore youth as a time of emotional, physical, and psychological growth and development. Numerous writing assignments, under the John Collins Writing Program, will reinforce vocabulary, sentence structure, thought synthesis, and organization skills developed throughout high school. A focus on note taking is also integral to the latter. Selections of literature may include: *The Perks of Being a Wallflower*, *Carrie*, and *Feed*.

Urban Readings 12 • College Prep 1 Course: ENG 2032

Urban Readings is a course of local infrastructure and social issues in which students increase their awareness through an analysis of an urban area and its adjoining suburbs. The city of Boston and towns of the Minuteman District are studied for their common characteristics. Integrated and applied learning assignments feature an examination of social, political, historical, economic, ethnic, and architectural themes. The introduction of architectural studies into the Urban Readings curriculum has attracted a wide range of students with a variety of vocational interests and academic abilities. The prevalence of historic and architecturally-distinct buildings in the towns comprising the Minuteman District constantly reinforces the many aspects of the course work. Composition assignments follow the Collins Writing Program with Focus Correction Areas (FCA).

Academic Course Descriptions • Grade 12

Literature, Media, & Society 12 • College Prep 1 Course: ENG 2042

This course teaches students to identify, analyze, evaluate, and produce a variety of media forms through a study of critical thinking regarding various media outlets. Students take a hands-on approach to studying various forms of media including movies, television, advertising and the Internet. A variety of hands-on projects will allow students to demonstrate their understanding, including an oral analysis of mis-en-scene, the creation of a propaganda poster, and their final project in which students market a parody product. Composition assignments follow the Collins Writing Program with Focus Correction Areas (FCA).

Literature, Media, & Society 12 • College Prep 2 Course: ENG 2063

This course teaches students to identify, analyze, evaluate, and produce a variety of media forms through a study of critical thinking regarding various media outlets. Students take a hands-on approach to studying various forms of media including movies, television, advertising and the Internet. A variety of hands-on projects will allow students to demonstrate their understanding, including an oral analysis of mis-en-scene, the creation of a propaganda poster, and their final project in which students market a parody product. Composition assignments follow the Collins Writing Program with Focus Correction Areas (FCA).

Language Arts 12 • College Prep 2 Course: ENG 2053

This course focuses on preparing students for life after high school graduation. Students build and refine skills through the preparation of items for inclusion in the required school portfolio program, which will help ensure vocational certification. Additional skill building activities are applied to personal and career-oriented reading and writing. Web-based career exploration, filling out employment applications, writing letters of application and follow-up will be incorporated in a unit on how to pursue a career. Students will also continue to build appreciation of reading in and out of the classroom through assigned and independent reading, and through expository writing. Emphasis is placed on the use of the John Collins Writing Program. This course is taken concurrently with English 12 Level 3.

Reading 12 • College Prep 2 Course: ENG 2043

For students needing to improve reading assessment scores, this course mixes Rewards Plus for Science, Jamestown Fluency, and Reading Counts to improve student literacy. By developing word attack, fluency, and comprehension skills, students will demonstrate improvement through formal and informal assessments.

GRADE 12 MATHEMATICS

Calculus • AP Course: MAT 2010

Topics include a review of conics and trigonometric functions and their graphs, properties of limits, continuity, derivatives of algebraic trigonometric, logarithmic, and exponential functions, implicit differentiation, the Mean Value Theorem, related rates, the first and second derivative tests, velocity and acceleration, curve sketching and optimization, Newton's Method, antiderivatives: integration by substitution; area, sigma notation and Riemann sums, the Fundamental Theorem of Calculus, and numerical integration techniques.

Prerequisite: PreCalculus and by permission of Dept. Chair.

Calculus • Honors Course: MAT 2011

Topics include a review of conics and trigonometric functions and their graphs, properties of limits, continuity, derivatives of algebraic trigonometric, logarithmic, and exponential functions, implicit differentiation, the Mean Value Theorem, related rates, the first and second derivative tests, velocity and acceleration, curve sketching and optimization, Newton's Method, antiderivatives: integration by substitution; area, sigma notation and Riemann sums, the Fundamental Theorem of Calculus, and numerical integration techniques.

Prerequisite: PreCalculus and by permission of Dept. Chair.

Algebra 2B • College Prep 1

Course: MAT 2032

This course will be a continuation of Algebra 2A. Successful completion of this course and Algebra A will be the equivalent of college prep (level 2) Algebra 2. Topics will include: review of linear equations, quadratic functions, exponential and logarithmic functions, polynomial functions as well as an introduction to trigonometry and probability. As in Algebra 2A there will be an emphasis on problem solving and applications.

Adv. Algebra w/ Trigonometry • College Prep 1

Course: MAT 2082

This course is an in-depth study of the real numbers, functions and their graphs, quadratic functions, rational functions and their graphs, right triangle trigonometry and applications, trigonometric function, sine wave analysis, and complex numbers. Additional preparation in content and technique for the math portion of college entrance exams and the American College Test will be offered. A scientific calculator is required.

Prerequisite: Algebra 2

Business Math • College Prep 2

Course: MAT 2023

This computer-based course develops a comprehensive business plan with integrated mathematics. Topics covered are business planning and scheduling, accounting, taxation, finance, payroll, and business analysis (T.Q.M.). This course will be offered to seniors who may be interested in a business-oriented college program and for those who wish to consider eventually operating their own business.

GRADE 12 SCIENCE

Physics 2 • Honors

Course: SCI 2011

This program is a continuation of Physics I. Problem solving will be further strengthened in this second year. The student will now experience the topics of wave theory, sound, light and the behavior of thin lenses, as well as electricity and magnetism. There will be more opportunity for strengthening lab techniques as students get ready for college level work in science. Prerequisite for this course is successful completion of Honors Physics I or permission of the instructor.

Physics 1 • College Prep 1

Course: SCI 2042

This course is designed for students intending to continue their education at a 2 or 4 year college/technical school. The course will include lecture, discussion, and laboratory work. An emphasis is placed upon problem solving and reasoning skills. The topics will include a quick mathematics review followed by kinematics, Newtonian mechanics, as well as energy and gravitational field theory. Reporting skills are emphasized when completing laboratory assignments

Applied Physics 1 • College Prep 1

Course: SCI 2022

This course uses a modular system of instruction designed for technicians in the areas of electronics, computer science, automotive mechanics, drafting, HVAC, electromechanical, and electrical. The program emphasizes technical principles with “hands-on” learning to apply the basic principles of physics to specialized areas of modern technology. Unified concepts in the areas of mechanical, fluid, thermal, and electrical systems will be stressed. Strong emphasis will be placed on laboratory techniques and reporting skills.

Academic Course Descriptions • Grade 12

Applied Physics 2 • College Prep 1 **Course: SCI 2032**

This course is a continuation of Applied Physics I. Students will examine through theoretical discussions and laboratory investigations the concepts (theory and application) of rate, resistance, energy and power, and time constants in four basic systems: mechanical, fluid, electrical, and thermal. The appropriate mathematical skills will also be discussed in great detail. Strong emphasis will be placed on laboratory techniques and reporting skills.

Chemistry 2 • College Prep 1 **Course: SCI 2012**

This is a continuation of Chemistry I. Students will explore thermochemistry, gases and condensation, solubility of compounds in water, acids and bases, electrochemistry, and a brief introduction to organic chemistry in a hands-on laboratory environment. Strong emphasis will be placed on laboratory techniques and reporting skills.

Introduction to Anatomy & Physiology **College Prep 1** **Course: SCI 2062**

A one- year laboratory course designed to cover the anatomy and physiology of the human body. Topics will include the form and function of the eleven body systems in health and disease. This course is available senior format only, and Seniors majoring in health have first preference. *Prerequisite: Successful completion of Biology I & Chemistry.*

Anatomy & Physiology • Honors **Course: SCI 2061**

This one-year rigorous laboratory course is designed to cover the anatomy and physiology of the human body. Topics will include the form and function of the eleven body systems in health and disease. There are high expectations for student participation and achievement for this course. Students are expected to complete research projects and present in front of their peers. This course is available senior format only and seniors majoring in health will have first preference. *Prerequisite: Successful completion of Biology 2 & Chemistry 1.*

Biology 2 • Honors **Course: SCI 2021**

This is the second year of a biology course. This rigorous and challenging course is designed for students who plan to enroll in a four year college. Topics include human anatomy, genetics, evolution, and the classification of living organisms. These topics are consistent with State frameworks in biology. There are high expectations for student participation and achievement for this course.

Nutrition & the Human Body • College Prep 2 **Course: SCI 2072**

This section of Nutrition & The Body is open to students in the Culinary Arts and Hospitality Programs only. College prep nutrition is designed to prepare students interested in studying culinary arts, nutrition, or food science at the college level. Beyond the topics covered in Level 3 Nutrition, this course requires various enrichment projects. The purpose of these projects is to increase student learning of the major body systems and associated nutritional needs, to familiarize students with common food related diseases and food allergies, and to increase the student's ability to modify diets according to various types of food restrictions (i.e. Gluten-free, Kosher, low-sodium, etc). Prerequisites include culinary arts teacher recommendation and the successful completion of biology and chemistry. recommendation and the successful completion of biology and chemistry.

Nutrition & the Human Body • College Prep 2 **Course: SCI 2013**

A basic anatomy and physiology course that focuses on the role nutrition plays in the well-being of the human body. Topics that will be covered include analysis of the food pyramid, diet composition, diet and exercise relationships, as well as digestion and the role nutrients play in how muscle functions.

GRADE 12 SOCIAL STUDIES

SENIOR ELECTIVES

Seniors must elect one of the following full-year courses:

PSY 101 • Introduction to Psychology Dual Enrollment

This course introduces students to the scientific study of the mind and behavior and to the applications of psychological theory to life. Topics include: research methods; biopsychology; lifespan development; memory; learning; social psychology; personality; and psychological health and disorders. This course will establish a foundation for subsequent study in psychology.

The Modern Era • Honors Course: HST 2011

Students will engage in a comprehensive study of Western and Eastern cultures and their presence and impact on the modern world. This course will include an in-depth analysis of social, economic, and political changes and events from the dramatic revolutions marking the early nineteenth century to the continually evolving events of the present day. Students will gain a global perspective while concentrating on reading, interpreting, and analyzing history's means and motives in this level one course. Department permission is required.

Introduction to Psychology • College Prep 1 Course: HST 2012

This course will provide an overview of the history of psychology. The course will introduce those figures who have influenced the field of psychology, such as Freud, Bandura, Pavlov, and others. Students will be exposed to the areas of human development, intelligence, social behavior, research, testing, and personality. The format of the course will include lecture, interactive discussions, and group work. The students will be responsible for various individual and group projects.

United States History & the Cinema College Prep 1

Course: HST 2022

This course aims to bring the study of history to life through the use of film. Students will analyze motion pictures, newsreels, and documentaries for their accuracy and the effect they had on their times. The focus of this course will be on history and how movies have treated famous historical events. Students will be responsible for numerous reports and projects. Class will be limited to 18 students and permission of the department chairperson is required.

Civics • College Prep 1 Course: HST 2032

This course is designed to teach students the rights and responsibilities of citizenship in the twenty-first century. The course will examine federal, state, and local laws, rights and obligations of citizens, and consequences of lawful and unlawful actions. Topics will also include consumer awareness, personal finances, and the laws and regulations pertaining to specific vocational areas.

Civics • College Prep 2 Course: HST 2013

This course will introduce students to the basic concepts, rights and responsibilities of citizenship in the modern era. Government at the federal, state, and local level will be emphasized. Many constitutional concepts and issues will be covered, such as the rule of law, limited government, important Supreme Court decisions, and the influences of the Founding Fathers.

GRADE 12 HEALTH/P.E.

Physical Education

Course: GYM 2003

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ELECTIVES

Please Note: All elective courses have minimum enrollment requirements.

WORLD LANGUAGE

Spanish 1

**Course: LNG 1012 (9 & 11)
LNG 2012 (10 & 12)**

This beginning Spanish course is an introduction to the Spanish language and Hispanic culture and geography. Emphasis is on confidence-building in elementary conversation.

Spanish 2

**Course: LNG 1022 (9 & 11)
LNG 2022 (10 & 12)**

Students continue to develop skills learned in Spanish 1 with more emphasis on refinement of oral expression, reading, writing, and culture studies. Students will build on skills mastered in Spanish 1 to increase their comfort level with the language.

Spanish 3

**Course: LNG 1032 (9 & 11)
LNG 2032 (10 & 12)**

In this intermediate Spanish course students will begin to hone oral, written, and reading comprehension skills. Students are introduced to more advanced grammar with an emphasis on proficiency and communication. There is further study of Hispanic culture with an emphasis on Central and South American countries, and Hispanic-American culture.

Spanish 4

**Course: LNG 1042 (9 & 11)
LNG 2042 (10 & 12)**

In this advanced Spanish course students will continue to fine-tune speaking, reading, and writing skills. Special emphasis is on Spanish in the workplace: vocabulary building and inter-cultural communication skills. Finer grammar points will be covered including irregular verbs and complex verb tenses, pronoun usage, and idiomatic expressions.

Spanish 5

**Course: LNG 1052 (9 & 11)
LNG 2052 (10 & 12)**

In this advanced Spanish course students will continue to fine-tune speaking, reading, and writing skills. Special emphasis is on Spanish in the workplace: vocabulary building and intercultural communication skills. Fine grammar points will be covered including verbs and complex tenses, pronoun usage, and idiomatic expressions. More advanced readings in the target language, coupled with writing exercises, will expand the students' skill level in the language.

Idioma y Cultura • CP1

Course: LNG 2192 (12)

In this advanced Spanish course, students will continue to fine-tune speaking, reading and writing skills. More advanced verb tenses will be learned. In addition, students will explore the meaning of culture and understand what makes up their own personal culture. Current cultural topics will be explored as they relate to the Hispanic world.

French 1

**Course: LNG 1062 (9 & 11)
LNG 2062 (10 & 12)**

This beginning French course is an introduction to the French language and culture. Emphasis is on confidence-building in elementary conversation, reading and writing, as well as an introduction to the fundamentals of grammar: sentence building, noun and verb agreement, simple verb tenses.

French 2

**Course: LNG 1072 (9 & 11)
LNG 2072 (10 & 12)**

Students continue to develop skills learned in French 1 with more emphasis on refinement of oral expression, reading, writing, and culture studies. Students will build on skills mastered in French 1 to increase their comfort level with the language.

Academic Course Descriptions • Electives

French 3

**Course: LNG 1082 (9 & 11)
LNG 2082 (10 & 12)**

In this intermediate French course students will begin to hone oral, written, and reading comprehension skills. Students are introduced to more advanced grammar with an emphasis on proficiency and communication. There is more in-depth study of French and Francophone culture, including Africa and the Caribbean.

French 4

**Course: LNG 1092 (9 & 11)
LNG 2092 (10 & 12)**

In this advanced French course students will continue to fine-tune speaking, reading, and writing skills. Special emphasis is on vocabulary building and intercultural communication skills. Finer grammar points will be covered including irregular verbs and complex verb tenses, special case pronoun usage, idiomatic expressions, and technical vocabulary.

Latin 1

**Course: LNG 1112 (9 & 11)
LNG 2112 (10 & 12)**

An introduction to Latin, this course will cover the fundamentals of Latin grammar, including noun gender, declension, cases, verbs and verb tenses, basic sentence construction, and elementary translation. In addition, special focus will be on the Latin derivative of English vocabulary, especially as it applies to technology. Recommended for all students interested in learning the language, as well as for those students who have completed the complement of courses in another language but who would like to continue with foreign language study.

Latin 2

**Course: LNG 1112 (9 & 11)
LNG 2112 (10 & 12)**

A continuation of Latin 1, Latin 2 will include a review of basic vocabulary and grammar, and progress to a focus on more complex translations and advanced grammatical structures including third and fourth conjugation verbs, idiomatic expressions, the imperfect, pluperfect, and future perfect tenses, personal, relative, interrogative, and demonstrative pronouns, as well as comparative and superlative adjective and adverb forms. Cultural investigation will include the study of Roman education, dress, food, and sports, as well as a continued look at the Latin influence on the English Language. Open to students who have successfully completed Latin 1.

CAREER & TECHNICAL EDUCATION ELECTIVES

Blueprint Reading and Applied CAD

Course: CTE-INT 1100 (9 & 11)
CTE-INT 2100 (10 & 12)

This course focuses on reading, interpreting and creating construction drawings and blueprints used in the building trades industry. Students will be introduced to both residential and commercial plans and will work with six types of construction drawings including civil, architectural, structural, mechanical, plumbing and electrical. Students will learn orthographic and isometric sketching techniques and apply those techniques to create 2 dimensional and 3 dimensional CAD drawings for commercial and residential design. This course is aligned with the Massachusetts CVTE building trades frameworks for Carpentry, Electrical, HVAC&R, Plumbing, Horticulture and Metal Fabrication & Joining Technologies but ALL students are encouraged to enroll.

Blueprint Reading and Applied CAD II

Course: CTE-INT 1150 (9 & 11)
CTE-INT 2150 (10 & 12)

This course is the continuation of the Blueprint Reading and Applied CAD I course which focuses on reading, interpreting and creating construction drawings and blueprints used in the building trades industry. Students will be introduced to both residential and commercial plans and will work with six types of construction drawings including civil, architectural, structural, mechanical, plumbing and electrical. Students will learn orthographic and isometric sketching techniques and apply those techniques to create 2 dimensional and 3 dimensional CAD drawings for commercial and residential design. This course is aligned with the Massachusetts CVTE building trades frameworks for Carpentry, Electrical, HVAC&R, Plumbing, Horticulture and Metal Fabrication & Joining Technologies but ALL students are encouraged to enroll.

Introduction to Engineering Design (IED)

Course: CTE-INT 1200 (9 & 11)
CTE-INT 2200 (10 & 12)

This is an entry-level course and is appropriate for students who are interested in computer aided drafting and design (CAD) and engineering drawing and geometric construction. The major focus of the IED course is to introduce the design process, 3D modeling, Sketching, Engineering Drawing Standards, CAD Solid Modeling, Reverse Engineering, Consumer Product Design Innovation, Marketing, Graphic Design, Virtual Design Teams. Introduction to Engineering Design provides students the opportunity to develop skills and understanding of course concepts through activity and project based learning.

Applied CAD I

Course: CTE-INT 1150 (9 & 11)
CTE-INT 2150 (10 & 12)

The Applied CAD course is a one semester laboratory based course focusing on creating drawings using the CAD skills developed in the Blueprint Reading Applied CAD courses. This class is offered to students wanting to create designs, drawings and blueprints for any shop specific projects including the senior project which is a district requirement for all students. Students will have the option of using AutoCAD (2 dimensional) software or Inventor (3 dimensional) software. This course is aligned with the Massachusetts CVTE building trades frameworks for Carpentry, Electrical, HVAC&R, Plumbing, Horticulture and Metal Fabrication & Joining Technologies but ALL students are encouraged to enroll.

Entrepreneur and Financial Literacy

Course: CTE-INT 1300 (9 & 11)

CTE-INT 2300 (10 & 12)

This course provides students with an in-depth, real-world experience in creating a business plan related to their career major. The projects are designed to give students hands-on practice in developing and using computer skills to create a variety of standard business plan documents and marketing materials used in promoting a small business. Projects include Company Description, Logo and Tagline, Description of Products and Services, Market Analysis, Marketing Plan, Operating Plan, Funding, Advertisement, Projected Income Statements and Executive Summary. Additionally, personal finance including checking accounts, savings accounts, obtaining credit (loans, credit cards, mortgages, etc.) is also introduced. This course is aligned with the Massachusetts CVTE frameworks (strand 5) for all Career and Vocational Technical Education programs.

STUDENT DEVELOPMENT ELECTIVE SUITE

Public Speaking

Course: SEM 1002 (11)

This class covers principles and practices of public speaking, analysis of the speaking listening process, selection and organization of speech materials, and the composition and delivery of speeches and presentations. Students will be exposed to a wide range of communication theory and vocabulary, and they will be asked to apply these approaches in several oral communication contexts. The class will also cover a variety of contemporary topics, tied closely to public policy and public culture. Students will learn how to construct and deliver informative, persuasive, and demonstrative speeches, and will acquire skills in creating and integrating effective visual aids. As rhetoric is a practical art, students will have extensive opportunities to put these skills into practice, gaining experience and building competence in a variety of speaking contexts. Finally, students will gain insight into the strategic challenges and ethical requirements of public speaking, and an enhanced capacity to appreciate the art of articulated speech.

Accounting

Course: SEM 2102 (10 & 12)

Students begin by learning the basics of accounting as they work with T-accounts, a general journal, general ledger, and worksheets. They practice making correct entries and practice making business decisions based on the accounting information they are preparing. Once the topics and ideas are learned, the students will jump on the virtual simulator to implement their knowledge in real time. In “animate transactions” mode, students can literally see transactions they designed and created, fly out of their business into accounting documents. In later lessons, students pore over their business visually, through source documents, through accounting statements, all in search of fraud or errors. In projects, students can run their entire business and even compete in real-time multiplayer competitions.

Personal Finance

**Course: SEM 1202 (11)
SEM 2102 (12)**

Personal Finance teaches key personal finance concepts. The class will learn about everyday cost of living and maintain a career and then implement it into an online simulator. Because students track personal behavior and spending habits (apartment, finding a job, getting a bank account, paying taxes, and more) of their simulated character, using the virtual simulator, students retain more personal finance knowledge. The simulation is ideal for reinforcing personal finance, financial literacy, career skills, and life skills. Topics to be included are, Budgeting & Saving, Choosing & Balancing a Checking Account, Getting a Credit Card, Fixing Your Credit, Paying Your Taxes, Time Management and Health, Finding a Job, Finding an Apartment, Buying a Car, Investing for Retirement, Buying a Home, and more.

Skills USA – Career Essentials

Course: SEM 2302 (10 & 12)

In this course students will be learning from a multitude of skills that will be beneficial for their careers in any industry they enter. Personal skills such as work ethic, professionalism, and responsibility, as well as workplace skills like communication, teamwork, critical thinking and leadership will round out the core concepts of the course. The course will utilize some of the curriculum that Skills USA has to offer, to reinforce the benefit of participating in the competition, as well as the classroom setting to prepare them for their time at Minuteman in their respective CTE areas, and after graduation.

ART

Studio In Art (I/II/III)

**Course: ART 1022 (9 & 11)
ART 2022 (10 & 12)**

These art courses (previously named Drawing I/II, Painting I/II, Mixed Media I/II, etc) will provide students with opportunities to explore a variety of artists, art processes and materials such as drawing, painting, printmaking, two & three-dimensional design, and digital art. Student artwork will incorporate and reflect aesthetics & cultural and historical contexts. Willingness to get involved in the creative process is a more important requirement than the student's talent or previous experience.

Studio In Digital Photography & Media Arts (I/II)

**Course: ART 1053 (9 & 11)
ART 2053 (10 & 12)**

During this art course (previously named Digital Photography) students will learn how to use a digital camera and develop a basic understanding of the Adobe Creative Suite. Topics include: basic camera operation and composition styles, digital manipulation and how to incorporate traditional art media. Students will also study significant photographers in history. All of the camera techniques learned in this course can be applied to most advanced digital cameras.

Cameras are available for student use.

Studio In Film Photography

**Course: ART 1092 (11)
ART 2092 (10 & 12)**

During this art course students will learn how to use a 35 mm film camera as well as the basics of traditional darkroom development techniques. Students will have the opportunity to develop their own black and white film, and enlarge their own photographs. Topics include: basic and experimental darkroom techniques, and how to incorporate traditional art media. Students will also study significant photographers in history. Cameras are available for student use.

Prerequisite: Studio In Digital Photography I/II

MUSIC

Keyboard

Course: MUS 1053 (9 & 11)
MUS 2053 (10 & 12)

This course is designed for all students in grades 9-12 who have an interest in playing the piano. This class is appropriate for both beginners and advanced students and is taught within a small group setting. Students do not need a piano or keyboard at home. All of the instruments and learning materials will be provided. Students will learn to apply strategies for effective piano practice by studying aptitude-appropriate exercises and pieces from a variety of musical styles. Major topical units include: musical symbols and reading Standard Western Notation, finger independence and technique, time signatures and counting, music theory, and stylistic interpretation.

Guitar

Course: MUS 1093 (9 & 11)
MUS 2093 (10 & 12)

This course is designed to teach beginning through advanced students the fundamentals of guitar technique. All that students need is a strong desire to learn to play! Guitars, tuners, and all learning materials will be provided. Students will acquire a strong foundation in music theory and practice by studying and performing appropriate guitar exercises and written music within a group setting. Areas of study include: proper playing position, tuning, reading music notation and guitar tablature, singular note playing, chord playing, time signatures and counting, and basic guitar maintenance.

Chorus

Course: MUS 1043 (9 & 11)
MUS 2043 (10 & 12)

This course is designed to teach the fundamentals of singing technique to those students seriously interested in music. Course content will address the topics of proper breath support, tone production, intonation, ensemble blend, dynamics, note reading, counting, and sight-singing. Students will study pieces which represent a variety of styles and participate at winter and spring performances. Students will have the opportunity to audition for the Northeast District regional music festival and also perform at special school events.

Instrumental Lab

Course: MUS 1033 (9 & 11)
MUS 2033 (10 & 12)

Instrumental Lab is designed to encourage the development of solo and small ensemble performance techniques to those students who have previous musical training on a wind, brass, percussion, or keyboard instrument. With the guidance of the teacher, students will structure learning and performing experiences that best meet their individual abilities and interests. Students will study and perform appropriate small ensemble and solo pieces of different styles. Students will have the opportunity to perform at winter and spring concerts and other school events.

Music Production

Course: MUS 1102 (9 & 11)
MUS 2102 (10 & 12)

Music Production may be taken by any student interested in learning how to create, record, and mix original music. Students will use state-of-the-art audio production software and hardware to apply concepts of song creation, audio recording, signal processing, and mastering. Other topics include microphone techniques, multitrack recording, loop-based music creation, using virtual synthesizer technology and MIDI, and critically assessing sound quality.

CAREER & TECHNICAL EDUCATION

Freshman Exploratory

Although many students arrive at Minuteman High School knowing what career/technical program they want, some students may still be uncertain about which career/technical path to take. In order to help those students, Minuteman offers all ninth grade students an exploratory program during which they are introduced to our twenty-one (21) career and technical majors. When that exploratory cycle is complete, each student completes a career evaluation administered by his or her guidance counselor. Students list the top three (3) career/ technical choices, and counselors make every effort to place students in their first career/technical choice in conjunction with the recommendation of the career/technical instructor, the student, and the parent. With the exception of English and math classes, which are held every day during the freshman year, during the exploratory process and throughout their high school career at Minuteman, students spend every other week in academic classes. For example, one week is dedicated to academic classes while the next week is dedicated to their career/technical area. Students follow this “one-week-on, one-week-off” schedule for the remainder of their time at Minuteman.

Cooperative Education

Cooperative Education is a program for junior and senior career and technical education students who, through a cooperative arrangement between the school and employers, receive instruction by the alternating of study in school with a job in their occupational field. Such instruction shall be planned and supervised by the school and the employer so that each contributes to the student’s education and employability. Cooperative education takes place every other week during the career/technical format.

Goals

- Orient and familiarize the student with an actual work situation
- Provide the student an opportunity to observe, experience, and analyze work that is directly related to his or her training
- Provide the student exposure to personnel, equipment, and procedures different from those experienced in the school setting
- Help the student bridge a gap between school and employment
- Provide employers the opportunity to enhance the training curriculum
- Offer suggestions to the instructor regarding ways to improve the program
- Bring industry, business, and education closer together in sharing the responsibilities for preparing Minuteman High School students to enter the world of work
- Additional information is available from the Cooperative Education Coordinator.

Articulation Agreements

High school educators and the postsecondary institution faculty collaborate to develop a career or technical pathway consisting of courses required at the high school level and the postsecondary level that satisfy the curriculum requirements of the selected career or technical program. Once a pathway is developed, an articulation agreement (written contract) between the high school and the postsecondary institution is created. This articulation leads to an Associate degree, Bachelor’s degree, two-year certificate, or apprenticeship. Students can receive college credit (course waiver) for courses taken in high school that satisfy the articulation agreement between the high school and postsecondary institution.

CAREER ACADEMIES & PATHWAYS

Engineering, Construction & Trades Academy

Communications/Media Pathway

- Design & Visual Communications
- Multimedia Engineering
- Programming & Web Development

Trades & Transportation Pathway

- Automotive Technology
- Carpentry
- Electrical Wiring
- Plumbing & HVAC/R

Engineering & Production Pathway

- Advanced Manufacturing
- Engineering
- Metal Fabrication & Welding
- Robotics and Automation

Life Sciences & Services Academy

Agriculture, Environmental & Life Sciences Pathway

- Animal Science (Veterinary Assistant)
- Biotechnology
- Environmental Technology
- Horticulture & Landscape Technology

Health, Hospitality & Human Services Pathway

- Cosmetology
- Culinary Arts/Baking
- Early Education and Teaching
- Health Assisting
- Hospitality

ENGINEERING, CONSTRUCTION & TRADES ACADEMY

Communications/Media Pathway

Design & Visual Communications

The Design and Visual Communications program provides training to students in all aspects of visual communication. Students will acquire a solid foundation of skills and knowledge necessary for creative design and learn various print layout techniques. Students at Minuteman will learn to take a project from the conceptual phase to the design phase and finally the production phase. The Design and Video Communications industry is made up of graphic designers, illustrators, photographers, market specialists, researchers, press and digital press operators, pre-press technicians and bindery workers as well as a variety of other positions. A college degree may be required for some of these occupations but not all. A one-year postgraduate program is available in the Design and Video Communications program.

Multimedia Engineering

Students enrolled in the Multimedia Engineering program will be exposed to various types of media entertainment and technology, including television, film studies, journalism, video production, live stage production and construction, interactive media and computer animation. This emerging program will allow students to work on more complex technical aspects of design and function within various entertainment venues including but not limited to large and small theater productions, television and radio broadcasting, conference and convention set up and planning. Students in the program will obtain their OSHA (Occupational Safety and Health Administration) 10 safety certification, along with the ability to become certified in setting up and taking down theater rigging.

Programming & Web Development

The Computer Technology program integrates Computer Maintenance and Repair, Computer Programming, Web Design and Development, Graphic Design and Development, 3D Animation, Game Design, and Computer Applications with Business Communication Skills. Students will develop the ability to organize and manage programming, Web, graphic, and/or 3D animation projects and office work, learn advanced interpersonal and business relations skills, and develop an understanding of business attitudes essential to participate in the multinational marketplace as productive workers and consumers. All learners are challenged to meet high standards and high expectations while receiving the necessary supports for success. The program's focus is on preparing students for a variety of career opportunities where technical knowledge and skills are integrated with business concepts and academics. We also understand the importance of human relations, self management, teamwork, and leadership.

Trades & Transportation Pathway

Automotive Technology

This program is designed in modules for students to study the eight (8) general areas of ASE (Automotive Service Excellence). The introductory module covers basics; safety, tool usage and care, fasteners and common maintenance services. Each module consists of related theory in a classroom setting and hands-on, practical application using live vehicles or "mock-ups" to support completion of the NATEF (National Automotive Technicians Education Foundation) task requirements for each module. Upon completion of a module, students will complete a written and hands-on exam. Students will also complete NATEF "end-of-program" tests for each module. Automotive Technology students interact with customers and generate repair orders, and are responsible for looking up and ordering parts and creating estimates (parts and labor) for customers. Minuteman has been recognized by NATEF. A team of industry representatives evaluated all aspects of the program and have certified that all 8 areas of ASE (Automotive Service Excellence) have been met.

Carpentry

The residential Carpentry program provides training to students in all aspects of residential construction. Students acquire a solid foundation of skills and knowledge in the areas of: safe use of hand and power tools, measuring and cutting, accuracy with levels, rulers, and squares, interpreting drawings and blueprints, and door, window, kitchen, and bath installations. Students also erect concrete forms, wood frame structures, floor joists, stud wall partitions, subflooring, sheathing, stairs, rafter installation, roofing, and siding. Minuteman provides students with instruction in all aspects of mill and residential carpentry, as well as energy- saving and super-insulation techniques. The competency-based curriculum and hands-on approach enable students to be ready for our off-campus projects. Aptitudes and talents which a student needs in order to be successful in residential carpentry include good math ability, mechanical aptitude, physical fitness and ability to work with others.

Electrical Wiring

The Electrical Wiring program is designed to integrate shop-based and off-site learning experiences including the school-sponsored house construction project. Students will master wiring methods used in commercial, industrial and residential wiring, blueprint reading, electrical code, and operating principles of motors, transformers, photovoltaic systems and controlling circuits. In a field that will grow with the economy and population, electricians install, test, and maintain electrical systems. Electrical Wiring is a licensed trade that requires not only highly technical knowledge and skill but also a thorough understanding of the Massachusetts State Electrical Code. Students gain up to 1,500 practical (hands-on) hours toward the 8,000 hours needed to sit for their Master Electrical License. They can also earn up to 300 hours for toward the 600 hours needed in electrical theory and code. Talents and aptitudes needed for success in the electrical trades include good math and English skills, initiative, self-discipline and the ability to work under pressure.

Plumbing & HVAC/R

The Plumbing & HVAC/R program provides students with firsthand knowledge of the science and application of plumbing. Students will be trained in the correct safety procedures in a shop and working environment, as well as being required to be OSHA certified to participate in off-school construction projects. Students will also be competent at sizing, cutting, and assembling different piping materials. Plumbing students at Minuteman can earn up to 1,700 hours toward completion of the State Plumbing Board requirements to sit for their Journeyman's license working on off-campus construction projects. They also can gain 330 hours of related theory instruction. This program is aligned to the state curriculum standards found in the MA Frameworks for Plumbing. The demand for plumbers and pipe fitters is expected to outpace the supply of workers trained in this demanding but rewarding field. Plumbing is a licensed trade that requires not only highly technical knowledge and skill, but also a thorough understanding of the Massachusetts State Plumbing and Fuel Gas Code. The Plumbing program is designed to feature both shop and off-campus job site learning opportunities. Students gain hands-on experience with installation and repair of water, waste, gas, and heating systems in both residential homes and commercial buildings. To be a successful plumber, a person should be in good physical health, have good math and mechanical aptitude, be willing to work on new construction, as well as renovation projects, and be able to work in a neat, professional manner.

The Heating Ventilation Air Conditioning & Refrigeration Technology program integrates applications and skills. Students will develop an ability to organize, manage and complete all related work in the HVAC/R field; learn advanced interpersonal and HVAC/R skills; and develop an understanding of real work attitudes essential for participation in the multinational marketplace as productive workers and consumers. All learners are challenged to meet high standards and high expectations while receiving the necessary supports for success. This program exceeds the curriculum standards found in the MA Frameworks for Heating, Ventilation, Air Conditioning & Refrigeration.

Engineering & Production Pathway

Advanced Manufacturing

Students enrolled in the Advanced Manufacturing program will be trained on cutting edge technology and advanced computerized machinery to improve product manufacturing. Students in this program will learn the layout process, the setup and procedures necessary to operate equipment such as CNC lathes, CNC milling and turning machines. Students will also gain experience taking a product from conception to manufacturing using innovative CAD/CAM software. Students will receive training and certifications from NIMS, National Institute for Metalworking Skills, Inc., they will also obtain their OSHA 10 hour certification.

Engineering

The Engineering Careers Academy program is a very academically and technologically comprehensive program in various disciplines of engineering with emphasis on the engineering process and thinking. A variety of state-of-the-art equipment is utilized in transferring engineering skills to the students. Computer applications, professional communication skills, and strong work ethic are emphasized throughout the program. All learners are challenged to meet high standards and high expectations while receiving the necessary supports for success. The program's focus is on preparing students for a variety of career opportunities where STEM (Science, Technology, Engineering, and Math) concepts and skills are integrated with academic and technical knowledge. We also understand the importance of human relations, self-management, teamwork, and leadership. Our discipline provides rigorous and relevant learning opportunities for core content (English, math, science, and social studies) as well as those educational skills and competencies needed for a high level of performance within any discipline of engineering. The academic and technical content areas are interrelated enabling an individual to use the content for conducting research, generating possible solutions, and making valuable decisions based on facts.

Metal Fabrication and Welding

The Metal Fabrication/Welding program provides students with real world experience in addition to the ability to graduate with certifications sought by employers. The curriculum offers practical skills in fabrication, layout, and welding with theory and welding practice. A wide range of skills surrounding welding and sheet metal are presented. The students will be trained in many forms of welding using up-to-date equipment. They include; Oxyacetylene Cutting and Welding (OAC/W), Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), Resistance Welding (spot welding), as well as, some soldering (silver soldering), and Arc Gouging and Cutting (air arc). Upon completion of the Metal Fabrication/Welding Technology curriculum, students are required to complete a senior project and achieve at least one welding certification.

Robotics & Automation

Robotics and Automation is an extremely diverse and growing field of study encompassing various scientific, technological and engineering elements. It includes the design, implementation, configuration, operation, programming, maintenance and repair of intelligent machines and systems utilized for many applications on medicine, defense, space and underwater exploration, disaster relief, industries, manufacturing and assembly, and entertainment. The Minuteman Robotics and Automation Technology Program (Electromechanical Technology) is a Chapter 74 program strongly recognized and highly respected by the educational, business and industry communities worldwide. The program, its staff and students have won various local, state and national awards. Upon completion of the electromechanical curriculum, students are trained in various aspects of the field of Automation and Robotics and are expected to demonstrate competence all related skills required for an entry-level position in the aforementioned industry, as well as assist them with professional and academic success as they decide to enter a Technical/Engineering postsecondary program – including colleges and universities. Students entering the senior year of drafting technology are required to complete a senior project and associated research paper. Students choose a specific discipline of engineering design and complete all documentation and research for presentation to the engineering cluster.

LIFE SCIENCES & SERVICES ACADEMY

Agriculture, Environmental & Life Sciences Pathway

Animal Science (Veterinary Assistant)

Students enrolled in Minuteman's new Veterinary Science program will understand the fundamentals of animal science, be introduced to a variety of species, breeds, and characteristics (both large and small animal), compare animal anatomy and physiology, research animal disease and prevention, and study genetics, breeding and reproduction of domestic animals. Students in this program will earn college credits and industry-recognized certifications. Program graduates will be prepared for both college and career pathways upon graduation.

Biotechnology

The Biotechnology program provides students with the ability to explore and research the many careers in the biotechnology industry such as Biochemist, Marine Biologist, Microbiologist Botanist, Physiologist and Biophysicist. Biotechnology is the science for this century. Students in this program utilize the sciences of biology, chemistry, physics, engineering, computers, and information technology to develop tools and products for everyday living and future uses. As part of the Biotechnology program, students who complete 48 credit hours in biotechnology and attain the related competencies are eligible for a Certificate of Completion in Biomanufacturing. A Certificate in Biomanufacturing prepares students for entry-level positions in many areas of biopharmaceutical production with excellent opportunities for advancement and career growth. This certificate also augments a student's ability for further education in bio-related fields, which many of our students do pursue. Students within the Biotechnology program who plan on pursuing a career in science by continuing their education at a four-year institute should inquire with their guidance counselor regarding appropriate course selection.

Environmental Technology

Minuteman was the first high school in Massachusetts to develop an approved Environmental Technology program, and is currently one of only a handful of high schools offering such a program. Students have a unique opportunity to participate in extensive, concentrated environmental studies, and to conduct in-depth laboratory and field studies not available in traditional high school settings. The philosophy of the Environmental Technology program is to bring together students interested in the environmental field, environmental scientists and engineers, community and state officials, and other environmental organizations to investigate real-world environmental issues. Graduates of the Environmental program are certified in First Aid and CPR, Confined Space Entry, 10-hour OSHA general industry safety certificate, and OSHA 40-hour Hazardous Waste Operations. Students are also trained in wastewater and drinking-water technologies, and are prepared to take the Massachusetts Class II Municipal Wastewater Treatment Plant Operators and Massachusetts Grade I Drinking-Water Treatment Exams administered by the State of Massachusetts. Eligible seniors may also complete internships with local environmental consulting companies, contractors, or laboratories. Most graduates of this program pursue further education at the college level.

Horticulture & Landscape Management

The Horticulture/Landscape Technology program integrates plant science, greenhouse management, soil science, entomology, and arboriculture along with business skills. Students will develop an ability to organize and manage a greenhouse or landscape business by using their skills of plant identification, integrated pest management, and proper plant science techniques along with customer service skills and interpersonal skills in order to adjust to the ever changing horticulture industry. All learners are challenged to meet high standards and high expectations while receiving the necessary support for success. This program follows the state curriculum standards found in the MA Frameworks for Horticulture Technology.

Health, Hospitality & Human Services Pathway

Cosmetology

The Cosmetology course include the study in all phases of hair, nail and skin care and facial grooming. The primary purpose of both these cosmetology courses is to train the student in the basic manipulative skills, safety judgments, and proper work habits along with desirable attitudes necessary to obtain licensure. This course will also prepare students to take and pass their State Board Licensing exam. The mission of the Cosmetology program is to develop professionals with a creative flair for hair, fashion and grooming. A license in Cosmetology will provide individuals with many career opportunities such as stylist, barber, color specialist, perm technician, platform artist, salon owner and/or educator. The Barbering program is a pilot program at Minuteman.

Culinary Arts/Baking

The Culinary Arts program is composed of three areas: an award-winning bakery, an extremely popular restaurant, and a work-study program. The Culinary Arts program provides entrepreneurial training in all aspects of cooking and baking. Students operate a full-service restaurant and bakery open to the public. Students receive training in management, OSHA, ServSafe, sanitation, entrepreneurial skills, and related theory. Classroom resources allow students to practice their skills in a real commercial restaurant and bakery. Students rotate between the Bakery/Pastry area and the Restaurant unless they choose to major in one area. We are flexible with the scheduling and can make reasonable curriculum accommodations for students if necessary.

Early Education & Teaching

Students in the Early Education and Teaching program study the fundamentals of human development up to age eight, with the primary focus on children under five. In addition to learning about growth and development, students also learn how to meet children's developmental needs. Curriculum planning for children under five includes creating fun activities that foster children's development. Students' training follows state and national Early Childhood Education guidelines. Their preparation includes, among other topics, following health and safety practices, as well as transmitting culture to children. This is a rigorous, college preparatory program for academically talented, technically oriented students who plan to matriculate to a competitive technical college or institute upon graduation from high school. All learners are challenged to meet high standards and high expectations while receiving the necessary supports for success. This program exceeds the state curriculum standards found in the MA Frameworks for Early Education and Teaching.

Health Assisting

Completion of the four-year Health Assisting program will prepare the students for a wide variety of entry-level positions in the health care industry. Students will also be well prepared to pursue higher education in many health careers if they so choose. Through a combination of classroom teaching and clinical placements, students will be eligible for becoming a Certified Nursing Assistant. In addition, students will be prepared for pursuing optional certifications as an EKG technician, phlebotomist and basic Emergency Medical Technician (EMT). All students in Health Occupations are certified in Cardiopulmonary Resuscitation (CPR) and First Aid, and Occupational Safety and Health Administration (OSHA).

Hospitality Management

The Hospitality Management program is composed of three components: related theory classes, front of the house service in an extremely popular dining room, and a work-study program in area hotels. Our focus is to train valued Guest Service employees. The Hospitality Management program provides entrepreneurial training in all aspects of customer service. Students operate a full-service restaurant that is open to the public. Students receive training in management, OSHA, ServSafe Sanitation, entrepreneurial skills, and related theory. Classroom resources allow students to practice and apply their skills in a real commercial restaurant and off-site hotels. Students participate in related theory classes and engage in practical experience either in the restaurant or at a hotel job shadowing opportunity. We are flexible with the scheduling and can make reasonable curriculum accommodations for students if necessary. All learners are challenged to meet high standards and high expectations while receiving the necessary supports for success.

