

OLD COLONY REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL

PROGRAM OF STUDIES

2023-2024

INTRODUCTION

Old Colony Regional Vocational Technical High School is located on an 80-acre campus in Rochester, Massachusetts, the geographical center of the five-member town school district that includes Acushnet, Carver, Lakeville, Mattapoisett, and Rochester. Old Colony is committed to providing quality vocational-technical and academic programs that prepare students for both college and the workforce.

Graduates receive a high school diploma and a Technical Program Certificate of Completion and are prepared to directly enter the job market as skilled workers or to continue their education at any college, university, or technical school. Old Colony offers many post-secondary academic opportunities, and as part of the Career Vocational Technical Education Program (CVTE) our students are eligible to earn college credit through articulated credit, college coursework, and early college placement at Bristol Community College. Students who meet specific criteria enroll in these courses at no cost. Students who earn a qualifying score on Advanced Placement Exams are eligible to receive college credit at participating universities. Additionally, college credits can be awarded for technical training received at Old Colony from a variety of post-secondary institutions including New England Tech and Johnson and Wales University. Old Colony is fully accredited by the New England Association of Schools and Colleges.

MISSION

Our mission is to prepare and support students for the global demands of society and the workforce through rigorous, vocational-technical and academic courses. This foundation is established within a safe environment that values students' interest, needs, and diversity fostering responsible, productive citizens in our community.

NONDISCRIMINATION CLAUSE

Every student is entitled to equal educational opportunities. A student may not be subjected to discipline or more severe punishment for wrongdoing nor denied the same rights as other students because of his or her race, color, gender identity, religion, national origin, housing status, sexual orientation, limited English proficiency, or disability as defined and required by state and federal laws. Additionally, we prohibit retaliation against individuals who oppose such discrimination and harassment or who participate in an equal opportunity investigation. School policies and procedures ensure that all students have access to the full range of educational programs. If students would like access to a course requiring a prerequisite which they have not taken, they are asked to visit their guidance counselor for options to gain access to this coursework.

CORE VALUES

Community
Integrity
Perseverance
Professionalism
Respect

BELIEFS ABOUT LEARNING

- All students are provided with the most current vocational, technical, and academic courses of instruction that allow for differences in student interests, aptitudes and abilities.

- Students' compassion towards others is paramount in fostering interpersonal connections collaboratively to ensure a safe, productive and respectful learning environment.
- Each student establishes relationships with community organizations to maximize student learning and promote postsecondary and career opportunities.
- Students will develop effective communication and leadership skills that build upon traits creating the reliable work ethic of a civic-minded, lifelong learner.
- Students are encouraged to persevere with professional, academic, and personal integrity.

LEARNING EXPECTATIONS

ACADEMIC & CAREER

OC Students are expected to:

- Develop critical thinking and reasoning skills
- Work independently and collaboratively
- Utilize technical skills and knowledge to solve problems
- Create individual education and career plan
- Communicate with clarity, focus, and consideration of audience and purpose

SOCIAL

OC Students are expected to:

- Exhibit professional skills and behavior
- Accept personal responsibility
- Demonstrate self-respect and empathy for others
- Collaborate with peers and school community

CIVIC

OC Students are expected to:

- Participate in community events
- Model the conduct required of an engaged and responsible citizen
- Demonstrate an understanding of civic duties within their local communities, while exploring global challenges

PROMOTION AND GRADUATION REQUIREMENTS

In order to graduate from Old Colony, each student must complete four (4) years of high school and a minimum number of courses as outlined below. All students must successfully complete all courses in order to be promoted.

Core courses include: English, Math, Science, History, Vocational/Technical Related Theory, and Vocational/Technical majors.

Old Colony offers additional courses including Physical Education/Fitness, Health & Wellness, Applied Studies, or "Cougar Time," a flexible enrichment/intervention block.

Students who have not met the academic requirements for promotion and/or graduation must attend a summer school program during July and August. Prior approval must be obtained from the Old Colony Guidance Department before enrolling in any summer courses and evidence of the satisfactory completion of all summer courses (with at least a grade of "C") must be submitted. Any student who

does not attend, does not meet the attendance requirements, or does not pass all of their required academic summer courses (with at least a grade of “C”) to promote into the next grade level, forfeits his/her enrollment to Old Colony RVTHS. Since grades in the vocational program constitute one half of the year’s credit, there are no provisions for any vocational program make-up.

All students will be required to complete a student portfolio as a graduation requirement, and the portfolio will be a condition of promotion from each grade. All students are also required to meet the competency determination requirements of the MCAS required by the Commonwealth of Massachusetts Department of Education.

ENGLISH LANGUAGE ARTS

The English Language Arts (ELA) Program provides a literature-based education founded on intensive reading, writing, speaking and listening skill mastery. Over the four-year course of studies, students are presented with a curriculum that builds skills necessary for post-secondary goals of continued education and placement in the workforce. The program focuses on reading high quality works of literature; discerning characteristics of and approaches to fiction, non-fiction, prose, verse, drama, and informational texts; incorporating multi-faceted technologies; and gaining experience in confronting global issues and conflicts. By engaging in a robust ELA curriculum aligned to the Massachusetts Curriculum Framework, students develop the skills necessary to become critical readers and effective writers.

Course Offerings for Grade 9

ENGLISH 9

5 credits

ENGLISH 9 Honors

In grade 9, students will explore the concepts of power and the hero. The major selections in grade 9 include Elie Weisel’s *Night*, William Shakespeare’s *Macbeth*, John Steinbeck’s *Of Mice and Men*, Ibi Zoboi’s *Pride*, Lorraine Hansberry’s *A Raisin in the Sun* and Homer’s *Odyssey* along with a variety of shorter pieces of writing. Students will be given multiple opportunities to produce narrative, informational, and argumentative writing. In addition, students will hone their listening comprehension and speaking skills.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects. All students in grade 9 will prepare for the MCAS exam.

Course Offerings for Grade 10

ENGLISH 10

5 credits

ENGLISH 10 Honors

In grade 10, students will explore the relationship between identity and stories. Students critically analyze universal concepts such as friendship, love and hate, and freedom and equality. The major works studied in this course are Agatha Christie’s *And Then There Were None*, Marcus Zusak’s *The Book Thief*, Sue Monk Kidd’s *The Secret Life of Bees*, and Jeanette Walls’ *The Glass Castle*. Students will be given multiple opportunities to produce narrative, informational, and argumentative writing. In addition, students will hone their listening comprehension and speaking skills.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects. All students in grade 10 will prepare for the MCAS.

Course Offerings for Grade 11

ENGLISH 11 ENGLISH 11 Honors

5 credits

In grade 11, students explore multiple perspectives around the concept of the American Dream. The curriculum is a survey of American literature from pre-colonial days to the present with Miller's *The Crucible*, Fitzgerald's *The Great Gatsby*, and Krauker's *Into the Wild* as the three major works, along with a variety of other pieces of writing. In addition to refining speaking and listening skills, students in grade 11 learn the elements of a research paper and complete the resume portion of their portfolio graduation requirement.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects

ADVANCED PLACEMENT ENGLISH LANGUAGE & COMPOSITION*

5 credits

**AP students are expected to attend an additional one week workshop the summer prior to the course as well as up to three weekend study sessions throughout the school year.*

This advanced placement course, aligned to the College Board Advanced Placement English Language and Composition standards, develops close reading and analytical skills while refining students' writing skills with a focus on author's purpose and argumentation. Students will examine the required readings through the lens of rhetorical analysis to identify and establish the rhetorical situation, use of rhetorical devices, and development of argument in their own writing as well as in notable speeches, essays, and other works for nonfiction and fiction. Major works of the course include Tara Westover's *Educated*, F. Scott Fitzgerald's *The Great Gatsby*, and Arthur Miller's *The Crucible*.

This is a college-level course and the expectations are demanding. Students in this course are required to take the English Language and Composition AP exam and may opt to share their scores with colleges and universities where they may earn college credit for qualifying scores.

Course Offerings for Grade 12

ENGLISH 12 ENGLISH 12 Honors

5 credits

In grade 12, students will explore the concept of authority, how it is portrayed, and how people respond. Literary selections include Trevor Noah's *Born a Crime*, Tim O'Brien's *The Things They Carried*, Julia Alvarez's *In the Time of the Butterflies*, and *Brave New Worlds*, a collection of dystopian literature. In addition, students also complete an interdisciplinary Civics Project as required by the Massachusetts Department of Elementary Education. .

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects.

ADVANCED PLACEMENT ENGLISH LITERATURE & COMPOSITION

5 credits

**AP students are expected to attend an additional one week workshop the summer prior to the course as well as up to three weekend study sessions throughout the school year.*

This Advanced Placement course, aligned to the College Board Advanced Placement English Literature and Composition standards, develops close reading skills of prose, with a focus on fiction, drama and poetry, while also cultivating students' writing skills and a nuanced analysis. Students will examine the required readings through the lens of how a writer's purpose, genre conventions and figurative language impact a reader's interpretation of the work as a whole. Major works include Mary Shelley's *Frankenstein*, Kate Chopin's *Awakening*, Henrik Ibsen's *A Doll's House*, Oscar Wilde's *The Importance of Being Earnest*, Julia Alvarez's *In the Time of the Butterflies*, and Chinua Achebe's *Things Fall Apart*.

This is a college-level course and the expectations are demanding. Students in this course are required to take the end of course Advanced Placement exam and may opt to share their scores with colleges and universities where they may earn college credit for qualifying scores.

MATHEMATICS

Mathematics courses are aligned with the Massachusetts Mathematics Curriculum Frameworks guide students to develop a full understanding of mathematical concepts. Students build mastery through discussion and writing about various approaches to problem solving, solving real world and abstract mathematical problems, and developing specialized mathematical vocabulary including notations and symbols. Mathematics courses reinforce that, with persistence, students can solve challenging problems and be successful. Grade 9 & 10 coursework prepares students for the MCAS.

Course Offerings for Grade 9

ALGEBRA II Honors

5 credits

This upper-level course is available to grade 9 students who demonstrated an advanced understanding of Algebra I and Geometry concepts as evidenced by performance on the placement exam and middle school math coursework. Topics include expressions, equations and inequalities; functions, equations and graphs; linear systems; quadratic functions; radical functions and rational exponents; exponential and logarithmic functions; rational functions; sequence and series; quadratic relations and conic sections.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects. All students in grade 9 will prepare for the MCAS.

ALGEBRA I

ALGEBRA I Honors

5 credits

Algebra I increases students' algebraic fluency and mastery of solving linear and quadratic equations and inequalities. Other topics include simplification of expressions with polynomials, exponents, and radicals as well as factoring, use of linear and quadratic equations as mathematical models, solution of linear systems, functions, sequence and series. The course embeds instructional technology and uses visual models and problem-solving techniques where important math concepts and skills are embedded.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects. All students in grade 9 will prepare for the MCAS exam.

Course Offerings for Grade 10

GEOMETRY

GEOMETRY Honors

5 credits

This course includes an in-depth analysis of plane, solid, and coordinate geometry as they relate to both abstract mathematical concepts and real-world problem situations. Students develop analytical thinking skills and spatial sense as they relate to logical reasoning and argument. Major topics include parallelism and perpendicularity, polygons, congruence and similarity, circles, right triangle trigonometry, transformations, area, volume, and surface area. Required algebra skills are reinforced throughout the year.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects. All students in grade 10 will prepare for the MCAS exam.

Course Offerings for Grade 11

Advanced Placement PRECALCULUS*

5 credits

**AP students are expected to attend an additional one week workshop the summer prior to the course as well as up to three weekend study sessions throughout the school year.*

In AP Precalculus, students explore everyday situations using mathematical tools and lenses. Through regular practice, students build deep mastery of modeling and functions, and they examine scenarios through multiple representations. They will learn how to observe, explore, and build mathematical meaning from dynamic systems, an important practice for thriving in an ever-changing world.

AP Precalculus prepares students for other college-level mathematics and science courses. The framework delineates content and skills common to college precalculus courses that are foundational for various careers including, but not limited to, those in mathematics, physics, biology, health science, social science, and data science.

This is a college-level course and the expectations are demanding. Students in this course are required to take the end of course Advanced Placement exam and may opt to share their scores with colleges and universities where they may earn college credit for qualifying scores.

ALGEBRA II

ALGEBRA II Honors

5 credits

This course further develops students' computational thinking using foundational conceptual skills developed in Algebra I and Geometry. Topics include expressions, equations and inequalities; functions, equations and graphs; linear systems; quadratic functions: radical functions and rational exponents; exponential and logarithmic functions; rational functions; sequence and series; quadratic relations and conic sections.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects.

Course Offerings for Grade 12

ADVANCED PLACEMENT CALCULUS AB*

5 credits

**AP students are expected to attend an additional one week workshop the summer prior to the course as well as up to three weekend study sessions throughout the school year.*

This advanced placement course, aligned to the College Board Advanced Placement Calculus AB Framework. This is an introductory college-level calculus course, with a focus on differential and integral calculus. Student work is demonstrated in both verbal and written forms, and instructors focus not only content, but also the underlying mathematical concepts. Topics are considered analytically, numerically, graphically and verbally. Students in this course also prepare exclusively for the AP Calculus AB exam and often use materials created and recommended by the College Board. Students in this course are required to take the Calculus AB AP exam and may opt to share their scores with colleges and universities where they may earn college credit for qualifying scores. Successful completion of Pre-Calculus is a prerequisite for this course.

This is a college-level course and the expectations are demanding. Students in this course are required to take the end of course Advanced Placement exam and may opt to share their scores with colleges and universities where they may earn college credit for qualifying scores.

ADVANCED PLACEMENT PRECALCULUS*

5 credits

**AP students are expected to attend an additional one week workshop the summer prior to the course as well as up to three weekend study sessions throughout the school year.*

In AP Precalculus, students explore everyday situations using mathematical tools and lenses. Through regular practice, students build deep mastery of modeling and functions, and they examine scenarios through multiple representations. They will learn how to observe, explore, and build mathematical meaning from dynamic systems, an important practice for thriving in an ever-changing world. AP Precalculus prepares students for other college-level mathematics and science courses. The framework delineates content and skills common to college precalculus courses that are foundational for various careers including, but not limited to, those in mathematics, physics, biology, health science, social science, and data science.

This is a college-level course and the expectations are demanding. Students in this course are required to take the end of course Advanced Placement exam and may opt to share their scores with colleges and universities where they may earn college credit for qualifying scores.

TRIGONOMETRY

5 credits

In this course, students develop an understanding of fundamental Trigonometry concepts including defining trigonometric functions and angles including right triangle trigonometry. Applying trigonometric function by using the inverse, cofunctions, evaluating functions and applications of functions along with applying radian and degree measure will be major focuses. Students develop skills necessary to create and analyze graphs of functions, basic trigonometric identities and the application of laws of sines and cosines.

ALGEBRA & TRIGONOMETRY

5 credits

The Algebra & Trigonometry Applications incorporates Algebra II and mathematical concepts, including right triangular trigonometry and its applications. The course embeds skills necessary to tackle and solve PSAT, SAT, & Accuplacer style questions. The course promotes creativity, innovation, critical thinking, problem solving, communication and collaboration.

SCIENCE

All science courses are aligned with the Massachusetts Science, Technology, and Engineering Curriculum Frameworks and allow students to engage in hands-on learning experiences in a variety of physical and life sciences. Coursework addresses both content knowledge and the application of the science and engineering practices. Science courses give students dynamic and relevant opportunities to refine and communicate science understandings and to be well prepared for civic life, postsecondary education, and career success. Grade 9 coursework also prepares students for success on the MCAS Biology test.

Course Offerings for Grade 9

BIOLOGY

5 credits

BIOLOGY Honors

This course explores how traits are passed from one generation to the next, how organisms function, and how populations interact with each other and the environment. Through hands-on lab work students develop and use models of biological systems, constructing explanations of the interactions among living and nonliving systems and use evidence to analyze effects of human activity on biodiversity and ecosystem health.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects. All students in grade 9 will prepare for the MCAS..

Course Offerings for Grade 10

ENVIRONMENTAL SCIENCE

5 credits

This laboratory based course focuses on the study of human interaction with the environment, interrelationships of the natural world, and analyzing environmental problems. This is a second year biology course, therefore students taking this course should have completed one year of biology. Topics covered will include the study of ecosystem structure and function, population dynamics, resource depletion and management, toxic substances, and pollution of air, water and land.

ADVANCED PLACEMENT ENVIRONMENTAL SCIENCE*

5 credits

**AP students are expected to attend an additional one week workshop the summer prior to the course as well as up to three weekend study sessions throughout the school year.*

The Advanced Placement Environmental Science (APES) course is designed to be the equivalent of a one-semester introductory college course in environmental science. Environmental Science provides students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving and/or preventing them.

This is a college-level course and the expectations are demanding. Students in this course are required to take the end of course Advanced Placement exam and may opt to share their scores with colleges and universities where they may earn college credit for qualifying scores.

Courses Offering for Grade 11

CHEMISTRY Honors

5 credits

This course pushes students to answer the question “How do we explain everything we see based on interactions of things we can’t see?” Laboratory work emphasizes experimental design, developing and using models, evaluating and communicating evidence, and using mathematical reasoning to explain natural phenomena. Topics covered include, but are not limited to: atomic structure, physical and chemical changes, the structure and properties of elements and compounds, types of chemical reactions, chemical equilibrium, reaction rates and energy associated with chemical changes.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects.

PHYSICS

5 credits

This course stresses the study of forces and the laws that affect all mass in the universe. It provides an introduction to gravity, Newton’s laws, electromagnetism, and wave motion of light and sound. Students perform lab experiments that are designed to reinforce topics and with emphasis placed on the development of critical thinking, problem solving skills. The utilization of the SI system of measurements, accuracy and precision will be incorporated into laboratory activities.

STEM FORENSICS

5 credits

This course provides students with intensive forensic training using techniques, procedures, analysis, and crime scene investigations commonly practiced by many U.S. crime labs. Training includes various biotechnology protocols, and several case projects to deliver topics such as fingerprint biology, ballistics, plaster casting, data analysis, blood-typing and DNA fingerprinting. The course promises plenty of mock investigations to keep students engaged for this biology, chemistry and mathematics-based study.

Course Offerings for Grade 12

ADVANCED PLACEMENT ENVIRONMENTAL SCIENCE*

5 credits

**AP students are expected to attend an additional one week workshop the summer prior to the course as well as up to three weekend study sessions throughout the school year.*

The Advanced Placement Environmental Science (APES) course is designed to be the equivalent of a one-semester introductory college course in environmental science. Environmental Science provides students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving and/or preventing them.

This is a college-level course and the expectations are demanding. Students in this course are required to take the end of course Advanced Placement exam and may opt to share their scores with colleges and universities where they may earn college credit for qualifying scores.

PHYSICS Honors

5 credits

This course stresses the study of forces and the laws that affect all mass in the universe. It provides an introduction to gravity, Newton's laws, electromagnetism, and wave motion of light and sound. Students perform lab experiments that are designed to reinforce topics and with emphasis placed on the development of critical thinking, problem solving skills. The utilization of the SI system of measurements, accuracy and precision will be incorporated into laboratory activities.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects.

ANATOMY & PHYSIOLOGY

5 credits

This course is an introduction to the human body integrating the anatomy and physiology of cells, tissues, organs, the systems of the human body, and the mechanisms of homeostasis. It includes the study of the gross and microscopic structure of the systems of the human body with special emphasis on the relationship between structure and function.

CHEMISTRY

5 credits

This course pushes students to answer the question "How do we explain everything we see based on interactions of things we can't see?" Laboratory work emphasizes experimental design, developing and using models, evaluating and communicating evidence, and using mathematical reasoning to explain natural phenomena. Topics covered include, but are not limited to: atomic structure, physical and chemical changes, the structure and properties of elements and compounds, types of chemical reactions, chemical equilibrium, reaction rates and energy associated with chemical changes.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects.

HISTORY

In history courses, students deepen their understanding of both US and World History. History coursework teaches students to interpret and synthesize complex ideas about individuals, groups, events, and institutions. Through various written, oral, and performance assessments students expand their capacity for historical, economic, political, and geographic reasoning. Emphasis is placed on critical analysis of primary sources and using evidence and perspective taking to engage in meaningful discourse around the human condition.

Course Offerings for Grade 9

U.S. HISTORY I

2.5 credits

U.S. HISTORY I Honors

In U.S. History I students consider examples of continuity and change in the first 150 years of US history. They review the origins and main events of the American Revolution, Constitutional principles, and events of the early Republic and examine the causes and consequences of the Civil War, industrialization, progressivism, and the role of the United States in World War I. As students explore major events from the Revolutionary War through World War I, they build capacity for historical, economic, and political reasoning. Coursework strengthens student ability to develop research questions and conduct inquiries by interpreting primary sources and establishes foundational knowledge about significant recurring questions in US history.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects.

Course Offerings for Grade 10

U.S. HISTORY II

2.5 credits

U.S. HISTORY II Honors

In US History II students continue their study of events from the 20th and 21st centuries. They delve into the economic history of the Great Depression, New Deal, World War II, and the Cold War. Students also examine domestic and global policies and politics in the 21st century and continue to build capacity for historical, economic, and political reasoning. Coursework strengthens student ability to develop research questions and conduct inquiries by interpreting primary sources and establishes foundational knowledge about significant recurring questions in US history.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects.

Course Offerings for Grade 11

MODERN WORLD HISTORY

2.5 credits

MODERN WORLD HISTORY Honors

In Modern World History Part I, students study the rise of the nation state in Europe and the economic and political roots of the modern world, including the Industrial Revolution, 19th-century political reform in Western Europe, and European imperialism in Africa, Asia, and South America. They also examine the causes and consequences of the great military and economic events of the past century, including the rise of nationalism, World War I, the Great Depression, World War II, the beginnings of the Cold War, and the continuing persistence of political, ethnic, and religious conflict in many parts of the world. There will be a strong emphasis on oral and written communication and presentations.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects.

Course Offerings for Grade 12

U.S. HISTORY III & GOVERNMENT

2.5 credits

U.S. HISTORY III & GOVERNMENT Honors

In U.S. History III students analyze the causes and consequences of the major issues of the 1970's, 1980's, 1990's and ending with 9/11. Students also revisit the Founding Documents of the United States

and Massachusetts with an emphasis on understanding their relevance and impact on policies and politics in the present. All grade 12 students complete an independent civics project fulfilling the Massachusetts Department of Elementary and Secondary Education graduation requirement.

Honors sections are fast paced and require additional coursework, a more in-depth analysis of major topics and themes, and independent study research projects.

PHYSICAL EDUCATION and WELLNESS PROGRAM

The mission of the Physical Education and Wellness Program at Old Colony High School is to encompass a well-balanced program that prepares students with the knowledge and skills necessary to be physically fit and healthy for life in the 21st century. Growing scientific evidence demonstrates a significant connection between physical fitness and the cognitive, emotional, and social well-being of the individual, which makes regular participation in physical education more crucial to all aspects of life. Students will gain a fundamental understanding about the importance of lifelong fitness in a safe and enjoyable environment.

The Health Education program is designed to meet the National Health Education Standards. It addresses physical, social and emotional issues facing students to help them develop healthy lifestyles.

PHYSICAL EDUCATION & FITNESS Grades 9-12

1 credit

The Physical Education & Fitness program at Old Colony emphasizes the physical development of the individual and utilizes a variety of activities, both team and individual, which are designed to help students become lifelong participants of physical activity. In the units that are taught, students will learn important physical, social, and mental skills that they will be able to take with them and use in everyday situations. All students will receive quality instruction and assessments during each planned activity. Students must engage in all activities to achieve the best possible participation grade. Activities to be covered will include soccer, volleyball, basketball, badminton, weight training, yoga, floor hockey, flag football, wiffleball, kickball, ultimate frisbee, as well as other activities that will enhance movement. When leaving our program, students will have the knowledge, tools, and ability to become lifelong participants of physical activity, and practitioners of good health.

HEALTH & WELLNESS EDUCATION I– Grade 9

0.5 credit

Freshmen Health provides students with a deeper understanding of age-appropriate health issues, and equips them to better deal with the social and emotional adjustments of high school. In this trimester course, students will gain a fundamental understanding of the key concepts and practices of the components of health and wellness, effective communication/decision making, being a health literate consumer, alcohol/tobacco and other drugs, sexual decision making, mental health disorders, bullying, and suicide prevention.

HEALTH AND WELLNESS EDUCATION II – Grade 10

0.5 credit

Sophomore Health will assist students in gaining the knowledge and skills necessary to understand their personal physical fitness levels and health related needs to sustain a healthy and active lifestyle. In this trimester course, students will gain a fundamental understanding of the key concepts and practices of healthy growth and development, nutrition, physical fitness, stress management, healthy life skills and relationships, disease prevention and control, safety and injury prevention, violence prevention/conflict resolution, HIV/AIDS, and STIs.

VOCATIONAL PROGRAMS:

EXPLORATORY

Prior to students' selection of a vocational technical program, all students participate in Exploratory. The Exploratory program allows students to get to know what the different programs are like and the potential career pathways available in each of them. During this program, each student will explore all 13 different vocational areas. Each Program Exploratory has a "Related" (classroom) and a "Vocational" (hands-on) component. Students are graded daily in both vocational and related and receive a grade for each program and an overall average for Exploratory. The Exploratory average, in conjunction with the students' vocational program selection after completion of Exploratory is used to determine the students' vocational program placement.

AUTOMOTIVE TECHNOLOGY & THEORY

79 credits - 4 years

As a student of Old Colony's Automotive Technology Program, you will be knowledgeable in all entry-level phases of the automotive trade necessary to repair today's vehicles in any modern auto repair facility. Students in our NATEF (National Automotive Technicians Education Foundation) Certified Master Automotive Technology Program learn how to diagnose, service and repair both domestic and foreign automobiles. You will also learn how to troubleshoot problems of all kinds, using the latest engine analyzers, hand-held scanners, and other computerized diagnostic equipment. All areas of the NATEF Master Accreditation task list are covered, including: engine repair, brake systems, computerized engine performance, heating and air conditioning, steering and suspension, manual and automatic transmission and electrical systems.

BUSINESS TECHNOLOGY & THEORY

79 credits - 4 years

The Business Technology students will strengthen their skills in the more complex operations of Microsoft Office applications. Additionally, students will reinforce their office skills with project-based activities that integrate multiple aspects of today's modern office. Hands-on training includes: Microsoft Office Business Edition-Word, Excel, Access, PowerPoint, Publisher, and Outlook. In addition, curriculums in Accounting I & II, Financial and Banking Concepts, and Customer Service are taught to all Business Technology students.

ARCHITECTURAL + ENGINEERING TECHNOLOGY & THEORY

79 credits - 4 years

Architectural + Engineering Technology (A+E Tech) students are trained in architectural and technical drafting. They acquire skills essential to achieve success in a productive career, as well as, become a qualified and prepared member of the workforce in the drafting field. In addition, our students are provided with knowledge to reach further academic goals should they choose to continue their education at the postsecondary level. In their freshman year, students develop fundamental technical and architectural/engineering drafting techniques using free-hand sketching and AutoCAD. In their sophomore year, students are introduced to all phases of architectural design using AutoCAD and Chief Architect to create a full set of residential construction drawings. In their junior year, A+E Tech students develop critical thinking skills to solve design problems associated with manufacturing and engineering and further refine fundamental technical drafting skills using SolidWorks. Throughout this year, they prepare to take their Certified SolidWorks Associate (CSWA) exam. In their senior year, students are introduced to light commercial design and construction principals as well as applications of industrial design. Our students gain experience through a combination of private and community "live work"

projects, when applicable. The Architectural + Engineering Technology program is certified by the American Design Drafting Association (ADDA). A+T Tech students receive their Apprentice Drafter certification from the ADDA upon graduation.

COMPUTER SCIENCE & THEORY

79 credits - 4 years

Students will be trained in all aspects of software development. Students are introduced to the applications development life cycle, as well as development concepts. Hands-on training includes:

- Intro to Video Game Design
- Java Programming
- Introduction to Object Oriented Program Design
- Mobile Application Development
- HTML5 and CSS3
- JavaScript
- WordPress Content Management System
- Dynamic website design with PHP and MySQL
- Software development for community members

Sophomore year students participate in AP Computer Science Principles, which is an introductory college-level computing course. Students cultivate their understanding of computer science through working with data, collaborating to solve problems, and developing computer programs as they explore concepts like creativity, abstraction, data and information, algorithms, programming, the internet, and the global impact of computing.

Junior year students participate in AP Computer Science A, which is an introductory college-level computing course. Students will learn to design a program developing the algorithm it needs and writing codes to implement them, document and explain how program code works, and test program code and correct errors.

COSMETOLOGY & THEORY

79 credits - 4 years

The Old Colony Cosmetology department trains all of our students for the successful achievement of their MA State Board of Cosmetology operator's license. All students are trained for entry level positions in hair, nail & skin care salons. Our clinical shop setting provides grades 11 and 12 with the experience of serving clients from our community as well as staff and students throughout the school to provide hands on experience. Licensed students in cosmetology may work in a salon prior to graduation.

Career Opportunities:

- Hair Stylist
- Competition Stylist
- Salon Trainer
- Salon/Spa Owner
- State Board Examiner
- Cosmetology Instructor
- Make-up Artist
- Skin Care Specialist
- Platform Artist/ Demonstrator
- Hair Colorist
- Distributor Sales Consultant
- Salon/Spa Manager
- State Board Inspector
- Hairpiece/extension Specialist
- Nail Technician

CULINARY ARTS & THEORY

79 credits - 4 years

The Culinary Arts Department offers students comprehensive instruction in the four major areas of the food service industry in our state-of-the-art kitchen, bakery, and in the Cougar's Den, our full-service dining room/bakery which serves breakfast and lunch to faculty, staff, and outside guests. Culinary Arts is a production shop serving 50-75 people per day with meals prepared in our kitchen, bakery, and short order grill. Students also gain valuable experience in larger scale functions including buffets, receptions, and banquets. These experiences allow us to prepare students for entry-level positions and employment in Baking, Kitchen, Short Order, and Customer Service including dining room, bakery counter, and cashier.

ELECTRICAL & THEORY

79 credits - 4 years

In the modern high tech electrical field, there is a need for quality people who are technically skilled to meet today's requirements for great paying positions. To meet these demands, we work with an electrical advisory board to maintain cutting edge training for our electrical students using the latest equipment. Students are trained in the areas of residential, commercial and industrial electricity and specialty areas such as solar power and alarm systems. An on-campus residential dwelling is also used by our students to facilitate practice wiring for new work wiring, services, alarm systems, and heating systems. The department works with the school to install and maintain the electrical infrastructure of the school. The department also participates in a variety of community projects where students strengthen and apply their skill. The Electrical Department has an active co-op program where electrical contractors and companies in the area provide our students with hands-on trade experience.

ELECTRONIC ENGINEERING TECHNOLOGY & THEORY

79 credits - 4 years

The Electronics Engineering Technology program at Old Colony is designed to establish a solid foundation for students to either continue their education in the field of Electrical and Electronic Engineering and related disciplines or seek employment as an entry level electronic technician. Take a moment and look around you. Electronics impact almost every aspect of our lives today. On the lighter side we have smart phones, drones, video games and mobile electronics. On the more practical side we have robotics, green technologies, aerospace, automated manufacturing and advanced medical applications that all rely on electronics to perform their "magic". Each of these areas requires a team of engineers and technicians with specialized training in electronics to design, develop, build, repair and market their technology. Students are taught the basic concepts which provide a common foundation for all of these technologies. Topics include:

- Basic AC and DC Theory
- Analog Circuits
- Digital Circuits
- Microcontroller Programming
- Programmable Logic Controllers (PLC's)
- Wireless Technology
- Preparation for the Certified Electronic Technician (C.E.T./ETA) Exam
- Robotics Programming & Construction
- Introduction to Drone Technology
- PCB Design and Layout
- Audio Systems
- Surface Mount Technology
- Project Design and Development

Students will also become proficient in the use of:

- Basic Hand Tools
- Digital and Analog Multimeters
- Logic Probes
- AC and DC Power Supplies
- Circuit Simulation Software
- Soldering and Desoldering Equipment
- Digital and Analog Oscilloscopes
- Frequency Counters
- LCR Meters
- Microcontroller Programming

GRAPHIC COMMUNICATION and DESIGN & THEORY

79 credits - 4 years

Graphic Communication & Design is a program designed to instruct students in the many areas of the Graphic Communication/Printing Industries. Areas include Graphic Design Fundamentals, Electronic Prepress, Press Technologies through Binding & Finishing Operations. Students will use 21" iMac computers to learn the latest versions of Adobe's Creative Suite Software which includes InDesign, Illustrator, and Photoshop. Students are introduced to Digital Photography, Image Capture and Photo Retouching. Students will also learn current Printing Technologies, as well as Binding & Finishing Techniques as required by the Massachusetts VTE Curriculum Frameworks for Graphic Communication. As part of their training, students work on required projects as well as real life work assignments. The Graphic Communication & Design Department operates as a live production shop which produces print materials for the surrounding communities.

HEALTH CAREERS & THEORY

79 credits - 4 years

The Health Careers program at Old Colony provides students with an introduction to the diversity of opportunities in the field of allied health care, as well as quality preparation to enter the world of employment and/or further training and education within the health field. These goals are accomplished through applied theory, instruction within the clinical laboratory, and relevant clinical affiliations. The Health Careers curriculum meets the Massachusetts Vocational Technical Frameworks for Health Assisting. All students enrolled in the Health Careers program receive instruction leading to state certification as a nursing assistant. Supervised externship experience is provided in both long term and acute care settings. Co-operative education and placement opportunities are available to all senior students. This experience provides students with further development of their competencies, and a realistic work environment. Academic preparation includes a solid foundation in the principles of anatomy and physiology, understanding the disease process, investigation into the concepts of health promotion and disease prevention, and attention to relevant and contemporary health issues.

HOUSE and MILL CARPENTRY & THEORY

79 credits - 4 years

The House and Mill Carpentry Department offers students educational experiences in all aspects of residential construction. The main goal of the House and Mill Carpentry program continues to be preparation for our students to work in the residential building and remodeling industry but it also allows them to work in entry level positions in commercial construction and mill working. In the freshmen year students develop hand tool and basic carpentry skills. They are also introduced to stationary and portable power tools and are tested for proper use and safety. During the sophomore year students further develop their skills by constructing individual and group projects. The freshmen and sophomore years are typically spent training in the shop. The beginning stages of house building, planning, construction sequences, and various building materials are introduced. In the junior year students continue the study of house building by developing framing techniques and learning basic building code requirements. The senior year consists of studying roof framing and interior finish work. During the junior and senior year the students usually participate in offsite construction projects in the community, improving their hands-on skill and developing a strong work ethic.

MACHINE and TOOL TECHNOLOGY & THEORY

79 credits - 4 years

The main function of this course of study is to teach the safe and proper set-up and operation of equipment common to the machine tool industry. In addition, technical information relating to trade and industrial practices is part of the program. The curriculum is designed to produce a well-rounded entry level machinist. This is accomplished by a series of projects set up by instructors, as well as projects

brought in by local industries. Some machine used in completing these projects are: lathes, milling machines, grinders, drill presses, and Computerized Numerical Control equipment (C.N.C.). Our Machine Shop Technology Program is aligned with National Institute for Metalworking Skills (NIMS). Students enrolled in the program can earn credentials in NIMS Level 1 credential program starting in their junior year. Seniors are eligible to further their NIMS credentials with additional testing.

METAL FABRICATION and JOINING & THEORY

79 credits - 4 years

We perform many types of welding processes in the Metal Fabrication & Joining Technologies Department, such as Shielded Metal Arc Welding (SMAW) Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW) Oxy-Fuel Welding, Brazing, and soft soldering. (OFW, OFB, TS) along with Pipe Welding. The cutting processes are OxyFuel Cutting (OFC) Plasma Arc Cutting-Air (PAC-A) and Carbon Arc Cutting-Air (CAC-A). We also teach ornamental iron work, sheet metal, frame work, railing layout and design, and metal repair on existing parts and equipment.

The students learn how to operate and work with tools and the following equipment:

- A drop shear that will cut Mild Steel, Aluminum, and Stainless Steel up to 1/4" x 10'.
- A hydraulic press brake that will bend Mild Steel, Aluminum, and Stainless Steel 1/ 4" x 10'.
- A variety of other metal working machines such as a Box and Pan Brake, Pedestal Grinder, Band Saws, Hossfeld Bender Iron Worker, Power Rolls Drill Presses and an ornamental iron forming machine.

The students also learn the art of Blacksmithing to understand how metal fabrication and welding started centuries ago.

The Welding/Fabrication shop fabricates a variety of projects for different businesses in the surrounding area, as well as for residents of the community. Our welding students can receive their welding qualification also known as a Welding Certification in compliance with (D1.1 Structural Welding Code – Steel) by the AWS (American Welding Society) in the Shielded Metal Arc Welding process. This is a legal certification and future qualifications to follow in the GMAW and GTAW process.

Our mission is to teach every student the trade skills necessary to become well versed in the Welding and Metal Fabrication Field. This field is highly competitive and our students upon graduation will have a better understanding and knowledge to give him or her an advantage moving forward as a tradesperson.