

PROGRAM OF STUDIES 2015-2016

OLD COLONY REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL

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. Graduates receive a high school diploma and a certificate of proficiency in their technical area of study. Old Colony's four-year program of studies allows students to directly enter the job market as skilled workers or to continue their education at any state college, university, or technical school.

As part of the Career Vocational Technical Education Program (CVTE) our students are eligible to earn college credit through articulated credit, free courses, and early college placement at Bristol Community College. Also, 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.

GRADUATION REQUIREMENTS FOR CLASS OF 2016:

- 4 years of English
- 4 years of Math
- 1 year of Civic Education or Physics
- 4 years of Shop
- 2 years of Social Studies
- 2 years of Science
- 3 years of Shop Related
- Completion of a Student Portfolio

The district will continue to align graduation requirements with Common Core State Standards and work towards meeting MassCore recommendations.

ENGLISH LANGUAGE ARTS

The goal of the English Language Arts Program is to provide literature-based education founded on intensive reading, writing, speaking and listening skill mastery. Over the four-year course of studies, the students will be presented with curriculum that will scaffold skills necessary for post-secondary goals of continued education and placement in the work force. The program provides students with a solid body of knowledge derived from the following: 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; gaining experience in confronting global issues and conflicts. Benefiting from a curriculum aligned to the Common Core Standards, students at Old Colony RVTHS will develop the skills necessary to become critical readers and effective writers of research, formal argument, and expository essays. In addition, students receive a strong background in mastering extended texts, while synthesizing and analyzing a variety of sources.

Courses for Grade 9

HONORS ENGLISH LANGUAGE ARTS COLLEGE PREP ENGLISH LANGUAGE ARTS

5 credits

The first year in the four-year sequence of the integrated Language Arts Program is designed to provide students with a foundation for studies in literature and writing. Using a thematic approach, students study multiple genres including: fiction and nonfiction extended texts, short stories, drama, and poetry. Students read, analyze, discuss and write open responses to demonstrate knowledge of the provided reading passage and the expectations of the writing prompt by being able to state a claim and then provide textual evidence to support the claim. Writing assignments focus on the process of writing (prewriting, drafting, revising and editing). Principles of grammar are infused into the process as needed. In the Old Colony RVTHS Honors section, additional work is required, such as increased levels of homework, in-depth analysis of major topics and themes, and independent study research projects. Students are expected to take their writing to the next level so that they are thought provoking as well as functional. Students will prepare for the MCAS exam.

Courses for Grade 10

HONORS ENGLISH LANGUAGE ARTS COLLEGE PREP ENGLISH LANGUAGE ARTS

5 credits

The second in the four-year sequence of the English Language Arts Program will emphasize the in-depth analysis and interpretation of fiction, non-fiction (memoir, essay and autobiography), poetry and drama. A continuation of the writing process begun in the previous year will focus on composition. Emphasis is placed on responding to a prompt, developing a topic, connecting it to a piece of literature, while incorporating sentence complexity and rich language. In addition, students will be assigned extended text reading, that will be presented in a flipped classroom environment, where nonfiction and fiction reading passages are analyzed and connected to themes that are common across the genres. Students in the Honors will have additional required work as noted in the course guide. In the Old Colony RVTHS Honors section, additional work is required, such as increased levels of homework, in-depth analysis of major topics and themes, and independent study research projects. As in Grade 9 English Language Arts, students will continue preparation for the MCAS exam.

Courses for Grade 11

HONORS ENGLISH LANGUAGE ARTS COLLEGE PREP ENGLISH LANGUAGE ARTS

5 credits

The third year of the English Language Arts Program reflects the belief that students learn when they can demonstrate an understanding of the following essential questions: 1.) What is the relationship between literature and place?, 2.) How does literature shape or reflect society?, 3.) What makes American Literature American?. Language, reading and literature, and composition and media are addressed in the classroom to meet the Common Core Standards. A diverse selection of literary study includes Native American folklore, Puritan writings, Transcendentalism, American Gothic, the Harlem Renaissance, and historical and contemporary extended texts. The

students will complete a resume as part of the portfolio graduation requirement. All junior English Language Arts teachers must teach the elements of the Research Paper. In the Old Colony RVTHS Honors section, additional work is required, such as increased levels of homework, in-depth analysis of major topics and themes, and independent study research projects.

Courses for Grade 12

HONORS ENGLISH LANGUAGE ARTS COLLEGE PREP ENGLISH LANGUAGE ARTS

5 credits

The fourth year of the English Language Arts Program is designed for students to draw upon prior knowledge of literature and writing while honing proficiencies and incorporating high order thinking skills to their learning. Through a variety of genres, all students will be exposed to language, literature, composition, and media in the classroom to meet the Common Core Standards. Grammar is addressed in context and as needed. Students will continue to add to their portfolios to supply evidence of their various competencies. The students will complete an updated resume, cover letter, and references as part of the portfolio graduation requirement. Seniors also participate in a variety of employability skills assignments such as job interviewing and searching the internet for available jobs. In the Old Colony RVTHS Honors section, additional work is required, such as increased levels of homework, in-depth analysis of major topics and themes, and independent study research projects.

MATHEMATICS

Advanced Honors, Honors, and the College Prep Math courses are offered for students in grades 9, 10, 11, & 12. The Honors courses are designed for those students who have a strong background in mathematics and are planning on attending higher education. College Prep courses are designed for students planning on attending technical schools, two-year colleges or furthering their study in their chosen vocational area, entering the workforce or military service. All levels prepare students in their Freshmen and Sophomore years for the MCAS/PARCC test. In the Junior year, the course work becomes more specific to graduation plans. Placement in all mathematics courses after Algebra I is contingent upon successful completion of the prerequisites. All students must pass four years of mathematics.

Courses for Grade 9

HONORS ALGEBRA I

5 credits

This course in algebra gives students a strong foundation of algebraic skills. Topics include fundamental properties of real numbers, linear equations, absolute value, inequalities, factoring, quadratic equations, data analysis. Modeling and problem solving skills are stressed. It is recommended for students who are capable of doing work on an advanced level and at an accelerated pace.

ADVANCED HONORS GEOMETRY

5 credits

Prerequisite: Algebra I

This course is recommended for those students who are capable of doing challenging work on a regular basis. Topics include plane geometry, coordinate geometry, area, perimeter, volume

and other properties of polygons, parallels, triangle congruence, geometric proofs, circles, and special right triangles including Pythagorean Theorem.

COLLEGE PREP ALGEBRA I

5 credits

This course covers the traditional topics in algebra focusing on fundamental properties of real numbers, linear equations, absolute value, inequalities, factoring, quadratic equations, data analysis and problem solving.

Courses for Grade 10

ADVANCED HONORS ALGEBRA II with Trigonometry

5 credits

Prerequisite: Algebra II and Geometry

This is a very intensive course in algebra II covering new topics such as powers, roots, radicals, exponential and logarithmic functions, polynomial functions and rational functions, conic sections, right triangle trigonometry, general angles and radian measures, inverse trigonometric functions, solving right triangles, laws of sines and cosines, graphs of trigonometric functions and their translations, and trigonometric identities.

HONORS GEOMETRY

2.5 credits

Prerequisite: Algebra I

This course is recommended for those students who are capable of doing challenging work on a regular basis. Topics include plane geometry, formal proofs, coordinate geometry, area, perimeter, volume and other properties of polygons, parallels, triangle congruence, circles, and special right triangles including Pythagorean Theorem.

HONORS ALGEBRA II

2.5 credits

Prerequisite: Algebra I

This course is taken simultaneously with Geometry and is recommended for students with a strong mathematical background capable of doing advanced work on a daily basis. Topics covered include an in depth study of linear and quadratic equations, inequalities, systems of equations, graphing, polynomial functions, and factoring, operations with rational expressions, polynomial division and synthetic division.

COLLEGE PREP GEOMETRY

5 credits

Prerequisite: Algebra I

This course covers properties of angles, parallel lines, triangles, geometric proofs, circles, area, perimeter and volume of polygons, congruence and similarity of triangles, special right triangles and Pythagorean Theorem.

Courses for Grade 11

ADVANCED HONORS PRECALCULUS

5 credits

Prerequisite: Advanced Honors Algebra II/Trigonometry

This course is recommended for students with strong mathematical ability who are planning to further their education at a four-year college. It reviews algebra topics necessary for success in calculus and further study of coordinate geometry, polynomial functions of higher degree, synthetic division, complex numbers, the fundamental theorem of algebra, rational functions, and partial fractions.

HONORS ALGEBRA II/ Trigonometry**5 credits**

Prerequisite: Honors Algebra II and Honors Geometry

This is a very intensive course in algebra II covering new topics such as powers, roots, radicals, exponential and logarithmic functions, polynomial functions and rational functions, conic sections, right triangle trigonometry, general angles and radian measures, inverse trigonometric functions, solving right triangles, laws of sines and cosines, graphs of trigonometric functions and their translations, and trigonometric identities.

COLLEGE PREP ALGEBRA II**5 credits**

Prerequisites: CP Algebra I and CP Geometry

This course provides a continuation of the study of algebra for those students planning on additional education after graduation. It reviews in depth topics from Algebra I such as properties of real numbers, linear and quadratic equations, inequalities, graphing functions, add, subtract, multiply and divide polynomials, factoring, operations with rational expressions, polynomial division and synthetic division. A good foundation in Algebra I is recommended for success in this course.

Courses for Grade 12**ADVANCED HONORS CALCULUS****5 credits**

Prerequisite: Advanced Honors Precalculus

This course covers all of the topics of differential calculus of a single variable: limits and their properties, rules of differentiation, applications of differentiation, Rolle's Theorem, Mean-Value Theorem, first and second derivative tests, Newton's Method and differentials.

HONORS PRECALCULUS**5 credits**

Prerequisite: Honors Advanced Algebra II/Trigonometry

This course is recommended for students with strong mathematical ability who are planning to further their education at a four-year college. It reviews algebra topics necessary for success in calculus and further study of coordinate geometry, polynomial functions of higher degree, synthetic division, complex numbers, the fundamental theorem of algebra, rational functions, and partial fractions.

FOUNDATIONS OF COLLEGE MATHEMATICS**5 credits**

Prerequisite: College Prep Algebra II

This course is recommended for students planning to further their education at a technical school or two-year college. It covers new topics in algebra such as powers, roots, radicals, conic sections, right triangle trigonometry, general angles and radian measures, inverse trigonometric functions, solving right triangles, laws of sines and cosines, graphs of sine and cosine functions, translations of their graphs, and applications of trigonometry to solving real world problems.

SCIENCE

In all of the science courses students are expected to demonstrate an understanding of the basic principles of science, demonstrate the ability to work safely and effectively with equipment while conducting experiments, and employ problem solving skills. Courses in grade 9 are designed to meet the requirements of the MCAS Technology & Engineering Test.

Courses for Grade 9

HONORS TECHNOLOGY & ENGINEERING

5 credits

This is an accelerated course. Students are expected to do advanced work, project based/ technology based assessments, on a daily basis. Technology Engineering is an engaging, project based course incorporating the Massachusetts state frameworks. Students will learn the steps in the engineering design process, develop a rich understanding of technology, understand how advances in technology affect human society, and solve real world problems using the engineering design process. The course focuses on teamwork, collaboration, communication and individual work. There are four main projects; Project 1: Design the best organizer in the world, Project 2: Design a building of the future, Project 3: Improve a patented boat design, and Project 4: Electricity and communication systems.

COLLEGE PREP TECHNOLOGY & ENGINEERING

5 credits

Technology Engineering is an engaging, project based course incorporating the Massachusetts state frameworks. Students will learn the steps in the engineering design process, develop a rich understanding of technology, understand how advances in technology affect human society, and solve real world problems using the engineering design process. The course focuses on teamwork, collaboration, communication and individual work. There are four main projects; Project 1: Design the best organizer in the world, Project 2: Design a building of the future, Project 3: Improve a patented boat design, and Project 4: Electricity and communication systems.

Courses for Grade 10

HONORS BIOLOGY

5 credits

This is an accelerated course. Students are expected to do advanced work, labs and projects. Students will investigate the diversity, complexity, and interconnectedness of life on earth. The course focuses on the study of the cell and its major functions, genetics and biodiversity, evolution, and the study of the environment as well as human anatomy and physiology.

COLLEGE PREP BIOLOGY

5 credits

Students will investigate the diversity, complexity, and interconnectedness of life on earth. The course focuses on the study of the cell and its major functions, genetics and biodiversity, evolution, and the study of the environment as well as human anatomy and physiology. This is a laboratory based course.

Courses for Grade 11

HONORS CHEMISTRY

5.0 credits

This is an accelerated course designed for those students who are planning on attending a four-year college or university. 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. Emphasis will be placed on the development of critical thinking and problem solving skills. Laboratory exercises will be performed to clarify class discussions.

COLLEGE PREP CHEMISTRY

5.0 credits

This course is designed for those students who are planning on attending a four-year college or university. 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 and, chemical equilibrium. Emphasis will be placed on the development of critical thinking and problem solving skills. Laboratory demonstrations and exercises will be performed to clarify class discussions.

Courses for Grade 12

HONORS PHYSICS

2.5 credits

This course is an in depth study of the forces and laws that affect all mass in the universe. Topics covered include: gravitational forces, Newton's Law's of Motion, electromagnetic forces, and wave properties of light and sound. Students will use experimental investigations to illustrate concepts and confirm their understanding of physical laws. The utilization of the SI system of measurements, accuracy, precision and statistical analysis of error will be incorporated into laboratory activities.

COLLEGE PREP Physics

2.5 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.

SOCIAL STUDIES

In all social studies courses, students analyze cause and effect of social issues. Research and writing skills are developed through papers and essays along with oral and visual projects. Students discuss the significance, bias, and reliability of historical evidence. In honors courses, more emphasis is placed on critical thinking of the subject matter in addition to comparing and contrasting the various aspects of controversial issues.

Courses for Grade 9

HONORS U.S. HISTORY I

2.5 credits

In U.S. History I, students examine the historical and intellectual origins of the United States during the Revolutionary and Constitutional eras. They learn about the important political and economic factors that contributed to the outbreak of the Revolution as well as the consequences of the Revolution, including the writing and key ideas of the U.S. Constitution. Students also study the basic framework of American democracy and the basic concepts of America government such as popular sovereignty, federalism, separation of powers, and individual rights. Students study America's westward expansion, the establishment of political parties, and economic and social change. Finally, students will learn about the growth of sectional conflict, how sectional conflict led to the Civil War, and the consequences of the Civil War, including Reconstruction. Students taking this course should anticipate an accelerated pace of instruction and be able to do advanced work independently. There will be a strong emphasis on oral communication and presentations.

COLLEGE PREP U.S. HISTORY I

2.5 credits

In U.S. History I, students examine the historical and intellectual origins of the United States during the Revolutionary and Constitutional eras. They learn about the important political and economic factors that contributed to the outbreak of the Revolution as well as the consequences of the Revolution, including the writing and key ideas of the U.S. Constitution. Students also study the basic framework of American democracy and the basic concepts of America government such as popular sovereignty, federalism, separation of powers, and individual rights. Students study America's westward expansion, the establishment of political parties, and economic and social change. Finally, students will learn about the growth of sectional conflict, how sectional conflict led to the Civil War, and the consequences of the Civil War, including Reconstruction. There will be a strong emphasis on oral communication and presentations.

Courses for Grade 10

HONORS U.S. HISTORY II

2.5 credits

In U.S. History II, students analyze the causes and consequences of the Industrial Revolution and America's growing role in international relations. Students study the goals and accomplishments of the Progressive movement and the New Deal. Students also learn about the various factors that led to America's entry into World War I and World War II as well as the consequences of World War II for American life. Finally, students study the causes and course of the Cold War, important economic and political changes during the Cold War, such as the Civil Rights movement, and recent events and trends that have shaped modern-day America. Students taking this course should anticipate an accelerated pace of instruction and be able to do advanced work independently. There will be a strong emphasis on oral communication and presentations.

COLLEGE PREP U.S. HISTORY II

2.5 credits

In U.S. History II, students analyze the causes and consequences of the Industrial Revolution and America's growing role in international relations. Students study the goals and accomplishments of the Progressive movement and the New Deal. Students also learn about the various factors that led to America's entry into World War I and World War II as well as the consequences of World War II for American life. Finally, students study the causes and course of the Cold War, important economic and political changes during the Cold War, such as the Civil Rights movement, and recent events and trends that have shaped modern-day America. There will be a strong emphasis on oral communication and presentations.

Courses for Grade 11

HONORS WORLD HISTORY

5 credits

In World History 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 World War I, the Great Depression, World War II, the Cold War, the Russian and Chinese revolutions, the rise of nationalism, and the continuing persistence of political, ethnic, and religious conflict in many parts of the world. Students taking this course should anticipate an accelerated pace of instruction and be able to do advanced work independently. There will be a

strong emphasis on oral communication and presentations.

COLLEGE PREP WORLD HISTORY

5 credits

In World History 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 World War I, the Great Depression, World War II, the Cold War, the Russian and Chinese revolutions, the rise of nationalism, and the continuing persistence of political, ethnic, and religious conflict in many parts of the world. There will be a strong emphasis on oral communication and presentations.

Courses for Grade 12

HONORS MODERN WORLD HISTORY, Part II

2.5 credits

Students will study a blend of current world events along with a focus on governments. Students will also understand the economic impact of decisions of their own and the global economy. In addition students will learn about their civic responsibilities and duties. Students taking this course should anticipate an accelerated pace of instruction and be able to do advanced work independently. There will be a strong emphasis on oral communication and presentations.

COLLEGE PREP MODERN WORLD HISTORY, Part II

2.5 credits

Students will study a blend of current world events along with a focus on governments. Students will also understand the economic impact of decisions of their own and the global economy. In addition students will learn about their civic responsibilities and duties. Students taking this course should anticipate an accelerated pace of instruction and be able to do advanced work independently. There will be a strong emphasis on oral communication and presentations.

PHYSICAL EDUCATION and WELLNESS PROGRAM

The mission of Physical Education and Wellness 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 is showing a significant connection between physical fitness and the cognitive, emotional, and social wellbeing 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 life styles. Freshmen and sophomores will spend one week of curriculum time in health education and one week in physical education class during the academic cycles.

PHYSICAL EDUCATION – 9-12

The Physical Education 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, whiffleball, 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 – 9

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. 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 – 10

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. 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:

AUTOMOTIVE TECHNOLOGY

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.

CAD DRAFTING

Computer Aided Design Drafting 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 develop critical thinking skills to solve design problems associated with manufacturing and engineering and further refine fundamental technical drafting skills using SolidWorks. In their junior year, CADD 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 senior year, students are introduced to civil drafting principles and light commercial building. In addition, our seniors complete a combination of private and community “live work” projects and a senior design project of their choice. The CAD Drafting program is certified by the American Design Drafting Association (ADDA). Upon graduation, our students receive their Apprentice Drafter certification from the ADDA and have the opportunity to earn their Certified SolidWorks Associate (CSWA) Certificate.

HOUSE and MILL CARPENTRY

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.

COMPUTER INFORMATION SYSTEMS

Computer Programming

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
- Introduction to VB.net (VisualBasic.net)
- Java Programming Concepts
- Introduction to Object Oriented Program Design
- Mobile Application Development

Web Design

All Old Colony CIS students will become proficient in Web Design & Development employing a variety of Internet technologies through a four-year program of study. Students will learn how to play, construct, and design websites. Coursework includes hands-on training with:

- HTML5 and CSS3
- JavaScript
- WordPress Content Management System
- Dynamic website design with PHP and MySQL

Office Administration

The Office 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 office students.

COSMETOLOGY

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.

Cosmetology Career Opportunities:

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

CULINARY ARTS

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 a day 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

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

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 COMMUNICATIONS and DESIGN

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

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 principals 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.

MACHINE and TOOL TECHNOLOGY

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 TECHNOLOGIES

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.