

Islesboro Central School Program of Studies 2019-2020 Academic Year



ICS offers an approach to learning that includes personalized plans reflecting each student's voice and choice and broadening the traditional model to include individualized, experiential, inquiry based learning guided by standards.

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Mission and Vision:

Islesboro Central School, serving students kindergarten through twelfth grade, is essential to the life of the Islesboro community. The community and setting offer unique resources that enrich the education and experience at Islesboro Central School. The school is a source of music, art, and culture for residents of all ages to enjoy. Islesboro Central School builds on the traditional island values - self-reliance, civic-mindedness, neighbor-helping-neighbor, tolerance, ingenuity, conservation, and stewardship - to prepare its students to be productive in the global world of the 21st century.

Each Islesboro student experiences personalized learning, created with the participation of the student, teachers, and parents. While mastering the expectations of the Maine State Learning Results, each student is also supported in pursuit of their personal passions.

Each graduating Islesboro student is prepared with the social and life skills necessary to succeed in the next phase of life, wherever that may be. These skills include the ability to communicate confidently and effectively; to be self-reliant; and to continue to learn in academic, work, and personal settings.

Islesboro Central School embraces the philosophy that education can happen virtually anywhere. Education happens beyond the walls of the classroom and the school; therefore ICS encourages and promotes learning in a multitude of settings. Through this, Islesboro students gain an understanding and appreciation of the natural world, and develop a strong ethic of environmental sustainability and stewardship.

Each Islesboro student learns about and values the diversity of people, places, cultures, and experiences of the wider world. Islesboro and its school offer a unique learning environment and will attract students from Maine and beyond. Islesboro Central School welcomes these students and their families, and nurtures and sustains a strong magnet program. Each Islesboro student is trusted, respected, and supported by a broad learning community of teachers, staff, parents, community members, and students. All members of the learning community make themselves accessible to the extent possible in order to support each other.

Accountability is part of Islesboro's learning culture. Students are accountable for being actively engaged in meeting their learning goals. Parents are accountable for supporting their child's learning. Educators and staff are accountable for creating an exciting and productive learning experience. The administration is accountable for promoting, advancing, and leading the implementation of the vision. The school board is accountable for establishing policies and procedures that realize the vision.

Learning throughout our life is part of the island culture. Community members, parents, educators, and staff model this behavior for future generations. All educators are immersed in the pursuit of professional excellence, and the school community expects and values the attainment of ongoing professional knowledge.

Technology's most important function within the school is to enhance student learning. The learning community is technologically literate and uses this resource responsibly and

respectfully. Technology is not a substitute for personal interaction, learning content or developing critical thinking skills.

Recognizing that the challenges faced by the Island are interrelated, the Islesboro Central School community supports the broader efforts of island residents to plan and maintain a vibrant, year-round, sustainable community. Islesboro Central School and the Island community enrich and support each other; together, they create a vital place where people can live and learn for their entire lives.

Magnet Program Information

The Islesboro Central School Magnet Program offers an opportunity for non-resident students to attend a small public school in a unique island setting. The school is the "magnet", the "program" is mainland students attending ICS and participating in the same, high quality curriculum that island students enjoy.

Housed in a spectacular historic building, ICS provides a private school atmosphere within a public school setting. In addition to receiving the finest education in core classes of math, science, English and history, our students enjoy excellent instruction in the visual arts, music, foreign language, agriculture, and computer science.

The comfortable atmosphere of ICS fosters interaction between elementary, middle and high school students on a daily basis. Instructors provide ample opportunities for students to collaborate on projects such as a school-wide recycling program, improving the school's orchard, and a computer-generated island alphabet book

For more information on the Magnet Program, please contact Pathways Coordinator Jessica Woods at 734-2251 or jwoods@icspathways.org, or the Head of School Charles Hamm, at chamm@icspathways.org. You can also contact our Magnet Program Coordinator, Megan Britton, at magnetcoordinator@islesboro.k12.me.us.

Graduation Requirements

In order to graduate from Islesboro Central School, students must acquire a total of twenty five credits, 19.5 of which are in required content areas. The distribution of credit requirements is listed below.

ENGLISH - 4 CREDITS shall be required in a comprehensive program which includes reading comprehension, literature, written, listening and oral communication skills, the structure and uses of the English language, and research and reporting skills.

SOCIAL STUDIES - 3 CREDITS shall be required and must include US History and Government/Civics.

FINE ARTS - ONE CREDIT in Fine Arts shall be required which may include arts, music, humanities, or drama. Fine Arts may be provided through separate or integrated study and may include awareness, appreciation, or performance of the art form.

MATHEMATICS - THREE CREDITS in mathematics shall be required. It is highly recommended that all students have exposure to basic algebraic concepts and skills. Algebra is viewed as a gateway subject that offers students a better understanding of the technological world in which they live. Algebraic skills are – and will continue to be – a prerequisite to a diverse and broad range of courses and occupations. Accounting may be used to meet the third year of math requirement provided the student has taken Algebra I and II or Algebra 1 and Geometry.

SCIENCE - THREE CREDITS shall be required and must include (at a minimum) Biology and Environmental Science.

HEALTH EDUCATION - .5 CREDIT in health education shall be required. Health education shall include instruction in community health, consumer health, environmental health, family life, growth and development, nutritional health, personal health (including mental and emotional health), prevention and control of disease (including education on AIDS) and disorders, safety and accident prevention, which may include cardiopulmonary resuscitation (CPR), and substance use and abuse, including the effects of alcohol, tobacco, and narcotics.

PHYSICAL EDUCATION - 1 CREDIT in physical education shall be required. Physical education instruction will promote physical well-being, self-esteem, self-awareness, sportsmanship and interpersonal skills. This requirement may include, but not be limited to: physical fitness, fundamental motor skills and patterns, adaptive physical education, individual and group sports. Physical education may include special physical education, movement education and motor development.

COMPUTER APPLICATIONS - ONE CREDIT in computer application will be required of all students. This course will cover an introduction to the primary application of computer including word processing, spreadsheets, accounting, graphics, database management, and communication as well as introduction to programming in BASIC.

FOREIGN LANGUAGE – ONE CREDIT (Obtained in grades 7-12)

SUSTAINABILITY STUDIES - ONE CREDIT beginning with the class of 2022

It shall be required that each high school student enroll in one Sustainability-related course before graduation. A student could enroll in a project-based course (Special Projects in Sustainability) for one or more years completing an individual project related to sustainability. Alternatively, a student in their junior or senior year could enroll in either dual enrollment KVCC courses; 1), "Principles of Sustainable Agriculture" or "Sustainable Food Systems," and receive college credit. These classes could also count towards a science graduation credit.

GRADUATION PROJECT/PORTFOLIO - ONE CREDIT (1/4 credit per year) with a focus on the student's four years of high school. In addition to a community service component of 20 hours or 5 hours per year, students will be responsible for the organization and maintenance of a comprehensive student portfolio. There will also be two job shadowing experiences, one of which should occur during the student's senior year; this requires that the student explore a potential career opportunity.

AWARDING OF CREDIT - credit will be awarded on a semester basis for the purpose of encouraging students to maintain passing grades throughout the year. A student will receive partial credit for the semester that he/she passed and no credit for the semester he/she failed.

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ENGLISH

Kristen Kelley, English Teacher, kkelley@icspathways.org Students are required to take a full credit of English each year. At Islesboro Central School, students begin high school with English 9. They are then free to choose from semester- or year-long electives, many offered at both Regular and Honors levels. One AP course is offered in alternating years. Students are required to take a full credit of English each year.

English 9: Must be taken in the freshman year. Year-long course, offered at Honors and Regular levels. Fulfills one English requirement. Taken in preparation for elective courses offered at the upper levels.

This course focuses on critical thinking and focused, clear expression in writing and speaking. Students read a variety of texts centered around themes. They write poetry, journalistic pieces, journals, and literary essays.

American Literature: Open to students in grades 10-12, suggested as a companion course to U.S. History in the junior or senior year. Offered at Honors and Regular levels. Semester elective, fulfills 1/2 English requirement.

This is a reading-intensive course. Students read plays, poetry, nonfiction essays, and novels. Texts move chronologically through periods of U.S. history and may include *The Scarlet Letter*, *The Crucible*, excerpts from Emerson and Thoreau, poetry by Bradstreet, Whitman, Dickinson, Hughes, Blanco, *Adventures of Huckleberry Finn*, *Their Eyes Were Watching God*, *The Great Gatsby*, *Death of a Salesman*, *Catcher in the Rye*, *A Streetcar Named Desire*, *On the Road*, *A Raisin in the Sun*.

Academic Writing: Open to students in grades 11 and 12 who have earned an A in an English elective at the Honors level. Offered at Honors level only. Semester elective, fulfills 1/2 an English requirement. Team-taught, interdisciplinary. Follows American Literature semester 1.

Topics vary and are integrated between literature and history. Spring 2020: Toni Morrison's *Beloved* and the history surrounding the novel. The goal of this course is to prepare students for the level of intensity and depth expected in college writing. Topics covered will be research skills and literary analysis. Students will produce two major academic essays which will comprise the main work of the course: a research essay and a literary analysis paper.

Nature Writing: Open to students in grades 10-12. Semester elective, fulfills 1/2 an English requirement. Team-taught.

In this experiential learning course, students will read non-fiction texts based on environmental science (Michael Pollan) as well as science poetry (Alison Hawthorne Deming, Mary Oliver, others). They will craft notebooks, hike, sketch, and write, experiencing the outdoors as much as possible, and creating meaningful and varied writing from this experience. We will look at ways in which nonfiction can be as creative as fiction, and how poets like Deming turn what might otherwise be research writing into fresh and poignant glimpses of the natural world.

Speech: Open to students in grades 10-12. Semester elective, does not fulfill an English requirement. Offered at the Regular level only.

This highly useful, participatory, and entertaining course offers students skills and practice in various modes of effective and engaging public speaking.

Science

John VanDis, Science Teacher, jvandis@icspathways.org. 3 credits required for graduation from ICS. It is suggested that students enroll in a science course for each of their high school years. Islesboro Central School students learn scientific knowledge and processes which enable them to understand how our world does work and could work. All of our core science courses have a lab component. Our science sequence meets college expectations and creates possibilities for rich and deep cross curricular integration.

Biology: Students will focus on understanding the interconnected nature of living and nonliving systems on earth. We will explore the impact that advancing scientific knowledge has had on society and the factors that lead to those advances. We will also discuss ethical implications of science and technology. Topics will include cells, microbiology, genetics, ecology and evolution. Students will develop problem-solving skills, participate in scientific fieldwork, learn to complete labs, and communicate as scientists. Each topic of investigation will take students through a sequence of inquiry lab type activities. In each unit of study student's will:

- Brainstorm ideas and questions based on current biology topics.
- Investigate these ideas and questions through hands-on lab based instruction
- Share your findings and raise additional questions related to investigative inquiry/lab
- Pursue and design cooperative and individual investigations on topics in biology.

Honors Biology: An accelerated, lab-oriented introduction to biology but in greater depth and detail, studying the structures, functions, and processes of living organisms and their interactions with the environment. Major topics include cell structure / function, molecular basis of heredity, biological evolution, interdependence of organisms, matter / energy / organization of living systems, and behavior / regulation of organisms. Classwork will be enhanced by laboratory and field experiences where students will design and carry out long and short-term investigations using principles of the scientific process to develop inquiry and problem-solving skills, and communicate as scientists.

Chemistry: Students explore the fundamental principles of chemistry which characterize the properties of matter and how it reacts. In this course the labs and investigations will practice the principles of "green chemistry" whenever possible. Conclusions are developed using both qualitative and quantitative procedures. Topics include, but are not limited to: measurement, atomic structure, electron configuration, the periodic table bonding, gas laws, properties of liquids and solids, solutions, stoichiometry, reactions, kinetics, equilibrium, acids and bases,

and nuclear chemistry. The main goal of this program is to provide a solid foundation in the study of matter and its changes. Through many activities students will demonstrate how theory is applicable in laboratory situations. All students will develop good methods of problem solving and proper laboratory technique. Applications of chemistry can be found in all science disciplines and in every area of our lives. In this course we will also investigate and explore the relationships from a science, technology and society perspective. The number one goal is to create an interdisciplinary class where ideas can be freely exchanged. This will only be possible in an atmosphere of respect where everyone is free to express ideas and ask questions.

Bio-Inspired Design (.5 credit): This elective course presents an introduction to many areas of engineering: material science, structural and mechanical engineering, biomedical engineering, urban design and more. As an introduction to engineering and design/solution thinking, this curriculum aims to cover many fundamental aspects as we work to find solutions to common issues facing the marine environment from bio-based replacement material for foam buoys and plastics to new ways for rebuilding oyster reefs in estuaries. Our ultimate goal is working to improve the human-built world through innovation inspired by Nature, and finding inspiration in the endless engineering solutions that life has already found. Students will work together and independently on problem-based projects throughout the semester.

Nature Writing: (.5 credit English). Open to students in grades 10-12.

In this experiential learning course, students will read non-fiction texts based on environmental science (Michael Pollan) as well as science poetry (Alison Hawthorne Deming, Mary Oliver, others). They will craft notebooks, hike, sketch, and write, experiencing the outdoors as much as possible, and creating meaningful and varied writing from this experience. We will look at ways in which nonfiction can be as creative as fiction, and how poets like Deming turn what might otherwise be research writing into fresh and poignant glimpses of the natural world.

Marine Ecology (.5 credit) Marine Ecology is designed to be an elective course for students with a career or special interest and high motivation for an in-depth study of marine systems. Marine Ecology focuses on to the identification, classification and interaction of marine organisms. Information is presented in an integrated approach with science as inquiry, science & technology, science & social perspectives, and the history & nature of science. The course integrates unifying science concepts and processes of systems, order & organization, evidence, models & explanation, change, consistency & equilibrium, and form & function.

Scientific inquiry and understanding about inquiry are emphasized through practical implications and meaningful applications. Topics students study include ecological concepts of the sandy beach, rocky shore and benthic communities, seaweeds, planktonic forms, plankton and their relationship to marine life cycles, nekton, benthos, marine bacteriology, marine biological resources, and marine pollution. Additional special topics may be selected for study.

History

Rob McHugh, Social Studies Teacher, rmchugh@icspathways.org.

Three credits of Social Studies are required for graduation from Islesboro Central School, although it is recommended that students enroll in one course during each of their high school years.

Geography and Cultures of the World (1.0 R)

Geography & Cultures of the World is a required full-year course for all freshmen. This course will explore the development of humankind with emphasis on geography, the development of various societies and customs, and the impact of traditional cultures on the present day world. Various approaches will be used to study the characteristics of culture–government systems, religions, art, education and economic systems.

US History (1.0 R)

United States history is a required course for all ICS students. This is a survey course that considers the broad themes of political, economic, social, and diplomatic history from 1898 until the present. Students will continue to develop graphic information skills as well as the ability to use primary and secondary documents to evaluate history. Students will master skills in critically appraising historical data and writing analytical essays. First semester will focus on 1898 through 1941, and second semester will begin with America’s entry into World War II and continue to present day. Also taught at the AP level.

Government (.5 R)

In this course, students will be asked to consider what qualities make a good citizen and how they can impact change in our republic. Students will learn about the ideas behind and content of the US Constitution, and the roles and functioning of government at the local, state, federal and international level. Active civic participation in the community and discussion of current events will be expected.

Economics (.5 R)

Students will gain command of economic literacy by exploring a balanced approach of economic theory and practice. Concepts will include: scarcity, incentives, types of economic systems and their characteristics, competition, fiscal and monetary policy, global economic development and trade, and personal finance. Students will analyze economic issues and offer solutions to local, national, and global economic problems.

World History I: Ancient Civilizations (.5 E)

Students in this course will study history from ancient Mesopotamia to the end of the Dark Ages. They will examine the significance of river valleys in the birth of civilizations; they will learn about the origins of democracy with the ancient Greeks and the concept of state with ancient Rome. Students will learn the contributions of these ancient civilizations to modern Western

civilization. They will also gain knowledge of non-Western cultural origins to appreciate the varied texture of the world today.

World History II: Discoveries and Revolutions (.5 E)

Students in this course will study the growth of Western civilization from the Middle Ages to the Modern World. Students will explore the roles that music, art, literature, politics, and economic contributions have played in giving a commonality to peoples with a Western heritage. Students will understand the achievements and problems Western civilization has faced. Students will analyze the causes and effects of social and political revolutions during this era in world history. And, students will also examine some non-Western cultures to more fully heighten their sense of world community.

Mathematics

Teacher- Jon Bolduc, Math Teacher, jbolduc@icspathways.org. ICS requires three math credits for graduation, although it is recommended that students enroll in a math course for each of their four years at Islesboro Central High School.

Algebra 1: Full Year Prerequisites: Middle School Math

Algebra 1 continues to build and strengthen prerequisite skills in areas such as operations with integers, fractions, percentages, decimals, and signed numbers. There is a concentration on building problem solving strategies as well as communicating mathematics through graphing, algebraic/numerical analysis, and writing. Graphing calculators will be used to help deepen and enhance the understanding of various concepts. The topics we will focus on, but are not limited to, are linear functions, linear inequalities, systems of linear equations, quadratic functions, and properties of exponents.

Geometry: Full Year Prerequisites: Algebra 1

In this course we will explore the properties of common two and three dimensional figures. Students will be introduced to the idea of inductive and deductive reasoning. We will use deductive reasoning to formulate formal proofs to prove various theorems and properties. We will use graphing calculators and GeoGebra to further expand and deepen our understanding of Euclidean Geometry. Some of the topics we will focus on are points, lines, planes, reasoning and proofs, parallel and perpendicular lines, transformations, properties of polygons, circles, area and volume, and right triangle trigonometry.

Honors Geometry: Full Year Prerequisites: Algebra 1

Precalculus: Full Year Prerequisites: Algebra 1, Geometry, Algebra 2

Precalculus deepens our knowledge of the concepts discussed in Algebra II. The course is designed to prepare the student for either college Calculus or AP Calculus in high school. Precalculus promotes a deeper mathematical understanding of the topics learned in previous math courses. Topics covered include all of the families of functions (polynomial, rational,

exponential, logarithmic, rational etc.), right triangle and unit circle trigonometry, analytic trigonometry and additional topics including matrices and vectors. Student success is not only correlated to previous success in Algebra, Geometry, and Algebra II but is also strongly correlated with student motivation and willingness to work hard.

Calculus:

Prerequisites: Precalculus

Calculus explores the topics of limits, continuity, derivatives, and integrals. Concepts are connected through a numerical, analytical, and graphical approach. Students are required to formulate solutions to real world problems and make connections between rates of change, optimization, accumulation of area under a curve, area of regions, and volume of solids. Students have the opportunity to take the AP Calculus Exam in May with the possibility of earning college credit.

Health and Physical Education

Sam Diamond, Health and PE Teacher, sdiamond@icspathways.org

HEALTH EDUCATION - .5 CREDIT in health education shall be required. Health education shall include instruction in community health, consumer health, environmental health, family life, growth and development, nutritional health, personal health (including mental and emotional health), prevention and control of disease (including education on AIDS) and disorders, safety and accident prevention, which may include cardiopulmonary resuscitation (CPR), and substance use and abuse, including the effects of alcohol, tobacco, and narcotics.

PHYSICAL EDUCATION - ONE CREDIT in physical education shall be required. Physical education instruction will promote physical well-being, self-esteem, self-awareness, sportsmanship and interpersonal skills. This requirement may include, but not be limited to: physical fitness, fundamental motor skills and patterns, adaptive physical education, individual and group sports. Physical education may include special physical education, movement education and motor development.

Technology:

Intro to Computer Programming (Grades 11/12 or teacher permission) 1st Semester

This class will introduce the basics to computer programming. Students will learn the structure and syntax of programming languages through a series of mini projects. There will be an emphasis on critical thinking and problem-solving skills. Students will work with both visual and text-based programs. Students will be introduced to several programming languages including, but not limited to, HTML, CSS, JavaScript and Python.

Advanced Computers (Grades 11/12)

2nd Semester

Prerequisite: Intro to Computer Programming

This class will expand on topics covered in Intro to Computer Programming. Students will further develop their programming skills through a self-paced project. Students will have the opportunity to explore other areas of interest culminating in a presentation or semester project at the end of the course.

Intro to Computer Applications (Grades 9/10) 1st/2nd semester

This class will introduce the basics of computing concepts. Students will learn about the hardware elements that make up a computer as well as the software components that allow us to interact with the computer. Students will become proficient in using applications in the Microsoft Office Suite such as Word, Excel, and PowerPoint. Students will also be introduced to the structure of computer programs through the use of Scratch, webpage design and various other mini explorations and projects.

Visual Art:

Visual Art teacher Casey Everett, ceverett@icspathways.org. ICS students are required to complete one credit in Visual or Performing Arts (Band, Chorus).

SCULPTURE: Students explore a variety of 3-dimensional design methods, techniques, tools, and materials in this full year course. We experiment with both abstract and realistic forms and learn about relevant artists who have worked in sculpture. Mask-making, wire sculpture, plaster carving, found-object art, ceramics, and wooden sculpture are all worked with in this class. Culminates in an independent final project.

PAINTING: This course will focus on the fundamentals of painting with a strong emphasis on composition, color theory, and exploration. Students will work with a variety of different painting media including watercolors, acrylics, pen-and-ink, gouache, and oil paints. A range of techniques and subject matter will be explored including still-life, portraiture, landscape, and abstract and imaginative imagery. Culminates in an independent final project.

MUSIC COURSES

John Oldham, Music Teacher. joldham@icspathways.org

High School Band:

Grades 9-12 (younger, with approval):

Instruction and preparation for instrumental ensemble playing. Eligibility is based on both ability and desire. Repertoire and musical style are influenced and determined by the instrumentation. Class meets twice a week. Enjoy the excitement of self-expression while creating music in a cooperative atmosphere. Improvisation is encouraged. Traditional wind and percussion ensemble, intermediate to advanced proficiency level. Wide variety of musical styles.

Members who gained skills in middle school or prior experience and are ready for more interesting, challenging, and satisfying music will find this rewarding. Full year. ELECTIVE

High School Chorus:

Grades 9-12 (younger, with approval):

Instruction and vocal training in a variety of musical styles; classical, folk, jazz, show, and pop. Improve your notation reading skills and learn more about mixed chorus singing. Class meets twice a week. Eligibility is based on desire to sing. If you're interested in discovering the emotional power of the human voice and how your voice can grow as part of a group, consider what Chorus has to offer. If you did well in middle school chorus and you're serious about singing, this might be a good fit for you. Full year. ELECTIVE

Instrumental and Vocal Instruction:

Grades 9-12 (younger, with approval):

Small group and individual lessons. Learn an instrument, increase your skills, improve your vocal technique. Performance component optional. Class meets once or twice a week. Full or half year. Direction and goals of class are flexible and will be shaped by needs of those students who are available. ELECTIVE

Community Chorus: Grades 7-12:

Advanced choral ensemble offering enrichment and experience in an adult environment for the more serious voice student. Meets every Wednesday evening for 60 minutes for 12 weeks during two sessions from September to December and January to May culminating in two formal performances. (high school credit subject to review). ELECTIVE

Music Theory and Composition: Grades 9-12: The nuts and bolts of music construction, notation, terminology, harmony, orchestration. Basic and advanced techniques for sharing and archiving your compositions. May be a semester course. ELECTIVE

Musical Connections: Grades 9-12: An alternative to mainstream music performance oriented ensemble courses. Explore music and all its far-reaching connections to everything in our world from social commentary to the physical properties of sound. Tune in. Availability based on class size and interest. May be a semester course. ELECTIVE

French

Kate Legere, klegere@icspathways.org

French I, Part I (7th Grade French)

This course is an introduction to the “formal” study of French at ICS. The foundations of communicating in French will be taught. Students will be introduced to the fundamentals of understanding, speaking, reading and writing in French. Students will learn communication in French about likes and dislikes, school, family, friends, sports, seasons, dates, weather, numbers (prices, age), colors, foods, and hobbies and more by creating class stories. Homework will consist of studying current vocabulary nightly. Frequent, short assessments will be given.

All 7th graders participate in this class, with some exceptions.

Prerequisite Courses

There is no prerequisite course for students of French 1, Part 1, however many students will have had French as a ‘special’ during their elementary years.

French I, Part 2 (8th Grade French)

A continuation of French I, Part 1. Students will build their vocabulary base and understanding of French word order to further their communication and comprehension skills in the language by reading French and creating class stories. Homework will consist of nightly review and study. Frequent short assessments will be given.

Prerequisite: successful completion of French I, part 1 or equivalent

This course combined with French I, Part 2 will be the equivalent of one high school credit for French I. A goal of this course is to reach the Novice-High level as described by the American Council of the Teaching of Foreign Languages (ACTFL)

French II (9th grade and up)

French II focuses on the development of the spoken target language by improving the production of sounds and learned utterances, by expanding the understanding of what is heard, and by using basic but longer, more complicated speech patterns through reading, discussion and class stories. Students will read adapted texts as well as authentic texts. Students will write and speak in the past and future tenses. Homework will consist of nightly review, writing summaries, short reading assignments, drawing and speaking practice. Short, singular assessments will be administered frequently.

Prerequisite: successful completion of French I, parts 1 and 2, equivalent or teacher permission.

French III

continues to emphasize the development of listening and speaking proficiency. There is increased emphasis on reading and writing for communication across a variety of topics. The study of grammar is more intensive with the continued practice of irregular verbs and the

addition of higher level verb structures, including the conditional and subjunctive moods. Adapted and authentic texts will be used. Homework will consist of nightly review, writing summaries, short reading assignments, drawing and speaking practice. Short, singular assessments will be administered frequently in addition to practicing for the French SAT.

Prerequisite: A year average of 85 or better in French II, equivalent, or teacher permission

French IV-V

This is a combined class of two levels which continues to heighten the development of listening and speaking skills. There is an increased emphasis on reading and writing for communication across a variety of topics. It stresses oral and listening skills for active conversations which may best reflect intellectual interests such as the arts, history, current events, literature, sports, and other cultural topics. Adapted and authentic texts will be used. Homework will consist of nightly review, written composition, longer reading assignments and speaking practice. Short, singular assessments will be administered frequently in addition to practicing for the French SAT.

Prerequisite: A yearly average of 85 or better in French III or the previous year, or equivalent, or teacher permission.

Horticulture/Sustainability Studies

ICS requires all students to complete one credit of sustainability studies while in high school.

Intro to Sustainability Studies- a required 9th grade course.

Principles of Sustainable Agriculture (.5 credit/online/college-credit)

This course will introduce students to the philosophies, ecological bases, and practicalities of sustainable farming. Students will gain a firm foundation in the theoretical concepts of sustainable agriculture, but the emphasis of the course will be on the practical tools, techniques, and knowledge necessary to operate a successful small-scale, sustainable farm.

Sustainable Food Systems (.5 credit/online/college-credit)

This course will explore the complexity of a contemporary food system, beginning with local food systems and then broadening regional, national, and international food systems. Students will examine the cultural, political and economic factors that influence the production, harvest, processing, distribution, marketing and waste management of food.

Mid-Coast School of Technology

<http://midcoast.mainecte.org/>

207-594-2161

1 Main Street, Rockland Maine 04841

2019-2020 Course Descriptions

Career and Technical Education programs are available to all students in the region. Students acquire high-quality technical skills that will prepare them for post-secondary education and entry into the workplace. Many of MCST's programs provide opportunities for a certification, such as EMT and/or enable the student to earn college credits while in high school. Students and parents are encouraged to contact their guidance counselor or the School to Career Coordinator at your sending school to schedule a visit. Please see our website for more program information:

Articulation Agreements

Career and Technical High Schools in Maine have a variety of Early College opportunities for students. Many of the CTE programs have negotiated agreements with Maine colleges that allow students to receive college credit for documented achievement in high school programs. Listings of MCST's articulation agreements can be found throughout this course guide. The number of college credits granted varies depending on program and college chosen.

Concurrent Enrollment

Mid-Coast School of Technology has partnered with several Maine Community Colleges to offer students the opportunity to earn college credit in our programs. MCST instructors serve as adjunct faculty members for the partnered post-secondary organizations. After a student has successfully completed the course, he or she will earn transferable college credits. Students can earn up to 12 college credits in a MCST program.

Academic Courses

Grades 10-12

Math

Algebra II and **Geometry** are courses offered at MCST to facilitate the understanding of math topics in work related fields. Real world problems and labs, as well as lectures and experiments, teach students the skills and hands-on applications of these topics.

College Technical Math (3 Credits – KVCC)

This course is a dual enrollment course in conjunction with KVCC that will provide students with the concepts, principles, and problem solving techniques and skills needed in diverse occupational fields with an emphasis in agriculture. Interactive techniques will be used which emphasize an understanding of the topics followed by applications of math concepts using problem-solving computations. Topics covered include the numbering system, percents, charts,

tables and graphs, algebraic operations, simple equations, ratio and proportions, fundamentals of plane geometry, angular measure, triangles, area and volume calculations of various geometric shapes, and an introduction to right angle trigonometry.

Social Studies

MCST offers courses in social studies that are designed for students to understand their world. **US History I** is designed to help students understand the beginnings of our American nation through the Civil War period. **US History II** covers the post Civil War period to the present. **American Government** focuses on federal, state, and local government. **Economics** provides knowledge of economic principles and the impact on everyday life. Students learn by using videos, projects, worksheets, etc. Literary selections and *Current Events*, a magazine, are a basic part of each course.

English

Technical Communications I and II are courses that prepare students to enter the work force and have them experience the types of communications they may need for employment. Students learn about written communication (resumes, cover letters, memos, email, reports and presentations) as well as verbal and non-verbal communication. The class relies heavily upon computer use. Class assignments are frequently based on topics from trade areas. Students receive English credit upon successful completion of a course.

College Technical Writing (3 Credits – KVCC)

This course is a dual enrollment course in conjunction with KVCC that challenges students to solve problems, especially problems related to agriculture, using words and images. The course stresses both the writing process and the writing situation consisting of purpose, audience, and context. By learning to assess user needs, students develop critical thinking skills and use these skills to guide the writing process in a variety of communication forms. Students learn to gather and select information and to choose organizing and formatting strategies that result in clear written documents.

Automotive Collision

Grades 10-12

- **Explore welding, painting, and restoring techniques**
- **Gain hands-on collision repair experience on hotrods to new trucks**
- **Earn Industry recognized credentials**

This two-year course offers a diverse look into the automotive collision industry and prepares students for post-secondary education or entry-level positions within the field. Working in a modern collision shop environment, students use the most up-to-date tools and equipment where students will be expected to learn skills in welding, paint preparation, dent repair, detailing, etc.

Certifications

I-CAR and NATEF

Examples of Career Possibilities – Automotive Repair Technician, Automotive Repair Refinisher, Automotive Sales, Insurance Estimator

Automotive Technology I & II

Grades 10-12

- **Work on student, school and community cars and trucks**
- **Earn ASE (Automotive Service Excellence) certifications to use for employment**
- **Learn from an ASE Master Mechanic**

Automotive Technology is a two-year program designed for students to gain an understanding and learn to repair different systems in today's cars: steering and suspension, brakes, engines and engine performance, electrical, heating and A/C, automatic transmission, and manual drive train. Students also learn how an auto shop works with an emphasis on safety and environmental impact. Students develop on-the-job skills of tool and equipment use along with computer information in the automotive industry focusing on promoting safe work habits and quality workmanship. The instructor is ASE (Automotive Service Excellence) certified.

Certifications

NA3SA Certification and NATEF

Articulation Agreements

Central Maine Community College – 6 Credits

Southern Maine Community College – 3 Credits

Dual Enrollment – Eastern Maine Community College – 3 Credits

Examples of Career Possibilities – Automotive Technician, Automotive Service Management, Automotive Sales, Auto Parts Sales

Baking & Pastry

Grades 10-12

- **Work with commercial grade baking equipment**
- **Bake pies, cakes, cookies, bagels, breads, pizzas, pastries, etc...**
- **Run the MCST World Café – Open to the Public**

This one-year introductory pastry and baking classes provide students with an understanding of the ingredients and methods used in creating breads, pastries, cookies and other desserts. Students learn how dairy, fruits, flour and chocolate come into play with pastry and baking. The fundamentals of dough and basic decorating skills are covered, and this pastry and baking class also introduces students to baking equipment and baking costs.

Certifications: ServSafe – Food Sanitation

Articulation Agreements

Central Maine Community College, Eastern Maine Community College, York County Community College, Washington County Community College

Dual Enrollment

Eastern Maine Community College – 3 Credits

Examples of Career Possibilities – Pastry Chef, Baker, Cake Designer, Caterer, Food Sales, Restaurant Management

Certified Nursing Assistant

Grades 11-12

- **Apply nursing techniques in the hospital and rehab settings**
- **Earn a national certification to gain immediate employment**
- **Excellent starting point for a future in all medical fields**

This one-year Certified Nursing Assistant course is a one-year program, which upon completion enables the student to sit for Maine CNA certification. The class consists of two-to-three days of academic study and two-to-three days of clinical practice in local nursing facilities. Upon completion of the program and placement on the Maine State Certified Nursing Assistant Registry, the student will be able to work in a variety of health care settings. The CNA course also offers a solid foundation for further education in the healthcare field.

Pre-requisite: Students must be 17 years of age before May of the school year in which the class is taken.

Certification

Maine State CNA license

Examples of Career Possibilities – Certified Nursing Assistant (CNA), Register Nurse (RN), Nurse Practitioner, Midwife, Doctor

Culinary Arts

Grades 10-12

- **Learn how to cook international cuisine.**
- **Become an employable member of the Mid-Coast restaurant industry**
- **Prepare food for the public in the MCST World Café kitchen**

The one-year chef-based portion of the program is designed to prepare students who wish to enter the competitive field of professional cooking. The program is an overview of the basics in culinary techniques, such as measurement, following formulas, understanding nutrition, and proper knife handling and use. Proper safety and sanitation in the food service industry is emphasized.

Certifications: ServSafe – Food Sanitation

Articulation Agreements

Central Maine Community College – 3 Credits, Eastern Maine Community College – 3 Credits
Southern Maine Community College – 3 Credits, York County Community College – 3 Credits
Washington County Community College – 3 Credits

Dual Enrollment

Eastern Maine Community College – 3 Credits

Examples of Career Possibilities – Executive Chef, Banquet Chef, Food Sales, Restaurant Management, Restaurant Owner, Cafeteria Management, Caterer

Design/Technology

Grade 10-12

- **Use the latest industry recognized software.**
- **Choose between four exciting pathways: Video Game Design, Graphic Design, Audio/Video, and Animation**
- **Start building a professional portfolio to use for employment or college acceptance.**

Movies, music, and video games are part of today's life style; everybody experiences these things. This is why the world needs designers. The two-year Design Technology program moves students from consumers of media to creation. The courses offered include **Graphic Design, Web Design, TV/Film Production, Audio Production, Concept Design, 3D Modeling & Animation, Stop Motion Animation, Video Game Design, Digital Photography, Lighting Design and Scenic Design**. Students work with real clients on real projects with real deadlines. This is critical not only to developing experience with real-world working conditions but also in building a portfolio that is essential to getting a job or into a college program in design.

Dual Enrollment Agreement

Southern Maine Community College – 12 Credits

Examples of Career Possibilities – Graphic Artist, Video Game Designer, Animator, Producer, Video Producer, Audio Technician, Set Designer, Lighting Technician, Web Designer

Diesel Engine Technology

Grades 10-12

- **Break down and rebuild diesel engines**
- **Gain experience to use in a high-demand industry**
- **Work on marine and land based diesel engines**

Diesel Engines are used in marine and land based transportation as well as stationary applications such as emergency generators. This one-year course covers the fundamentals of design, construction, diagnosis, service, and repair of both mobile and stationary diesel engines. The course will also cover developments in engine control technologies, fuel management systems and emission controls. Students learn the basics that an entry-level technician needs to gain employment or to further their education in order to increase the earning potential. This course helps students gain problem-solving abilities along with a thorough knowledge of the use of ship manuals and online research.

Examples of Career Possibilities – Diesel Technician, Marina operations and repairs, Sales

EMT**Grades 11 -12**

- **Learn to become a first responder in emergency situations**
- **Earn a national recognized credential and 5 ½ college credits**
- **Excellent start to a career in any medical field**

The one-year, Emergency Medical Technician (EMT) program studies the human body and prepares students to help people who are sick or injured. As a part of the course, the student will spend time riding with ambulance services and working in emergency rooms in the area, assisting with patient care. Emergency care skills are practiced in the classroom. This program is a great start for anyone thinking about going into the medical field. This program will be offered in the afternoon session only.

Pre-requisites: students must be 16 years of age before beginning classes.

Certifications

EMT-B license

Articulation Agreement

Kennebec Valley Community College – 3 Credits

Dual Enrollment Agreement

Eastern Maine Community College – 5 ½ Credits

Examples of Career Possibilities – Emergency Medical Technician, Registered Nurse, Paramedic, Life Flight Paramedic, Flight Nurse, Fire Fighter

Pre-Engineering

- **Use commercial grade engineering equipment (3D Printer, Robotic Arms, CNC Mills, CNC, Lathes)**
- **Choose 1 or 2 Pre-Engineering pathways to explore**
- **Learn from an Engineer with more than 30 years of industry experience**

Principles of Engineering - (Includes CAD and Robotics)**Grades 10-12**

An introductory course exploring basic engineering principles in an applied hands-on format; including mechanics, heat loss/gain energy transfer, basic electricity, pneumatic and hydraulic systems, statics, dynamics, strength of materials, material testing, structural design, truss design, robotics, PLC (Programmable Logic Controllers) programming, the engineering design process, and failure analysis. Students completing all projects with a “B” or better will have the option of dual enrollment for college credit.

Pre-requisites: Algebra 1, Geometry

Examples of Career Possibilities – Mechanical Engineer, Chemical Engineer, Electrical Engineer, Environmental Engineer, Software Engineer, Marine Engineer

Civil Engineering and Architecture - (Strong Focus on CAD)

Grades 10-12

An introductory course into CAD (Computer Aided Design) using industry standard 3D solid modeling software, Autodesk Inventor and Revit, BIM (Building Information Modeling) software, and surveying fieldwork. Students will design, model, assemble, and fabricate pieces using Autodesk Inventor and a Dimension 3D printer. Students will learn about zoning and building codes, use Autodesk Revit to design a residence, and a commercial project, use surveying equipment, and produce design drawings.

Examples of Career Possibilities – Civil Engineer, Architect, Drafting and Design Engineer, Mechanical Engineer, Geological Engineer, Aerospace Engineer, Automotive Engineer

Computer Integrated Manufacturing (CIM) – (Includes Robotic Programs) Grades 10-12

Manufactured items are part of everyday life, yet most students have not been introduced to the high-tech, innovative nature of modern manufacturing. This course illuminates the opportunities related to understanding manufacturing. At the same time, it teaches students about manufacturing processes, product design, robotics, and automation. Students can earn a virtual manufacturing badge recognized by the National Manufacturing Badge system.

Examples of Career Possibilities – Manufacturing Specialist, Manufacturing Management, Manufacturing Engineer, CNC Programmer

Digital Electronics - (Includes student electrical design)

Grades 10 - 12

From smartphones to appliances, digital circuits are all around us. This course provides a foundation for students who are interested in electrical engineering, electronics, or circuit design. Students study topics such as combinational and sequential logic and are exposed to circuit design tools used in industry, including logic gates, integrated circuits, and programmable logic devices.

Examples of Career Possibilities – Electrical Engineer, Electrician, Mechanical Engineer,

Introduction to Engineering and Design

Grades 10 - 12

Students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects like designing a new toy or improving an existing product. Students will have an opportunity to complete a project from concept to completion.

Examples of Career Possibilities – Mechanical Engineer, Civil Engineer, Architect,

Firefighting

Grades 11-12

- **Fight propane, car, and structural fires**
- **Become an active member of the fire fighting community**
- **Earn state certifications recognized in 34 states**
- **Gain income as a volunteer firefighter (stipends are paid by the majority of Mid-Coast towns)**

The one-year firefighting program teaches basic firefighting skills used in fire service. As a part of the program students will extinguish vehicle, propane and structure fires. Students will learn skills using fire fighting tools, safety procedures, etc. The program prepares students for a career in public safety or to work in the community as a volunteer. This program will be offered in the morning session only. Interested applicants should be aware that this program requires a commitment outside the regular school day for training (some evenings & weekends).

Pre-requisites: Students need to be 16 years old at the start of the school year in which they enter the program.

Certifications

State of Maine Fire Fighting Certification - Firefighter 1 & 2

Examples of Career Possibilities – Fire Fighter, Emergency Medical Technician, Nurse, Paramedic, Police Officer, Military

Introduction to Applied Technology I

Grade 9-10

Introduction to Applied Technology is a hands-on, project-based program that, through classroom participation and the shop lab, students develop specific academic, career, interpersonal and technical skills that are essential for success in a chosen MCST program as a Junior or Senior. Students experience parts of other school programs through projects using small engines, welding, carpentry skills, etc. The program enables students to explore a wide variety of career and occupational areas. Upon successfully completing the program, students can choose another program as a junior or senior. Flexible scheduling is offered.

Machine Shop

Grades 10-12

- **Learn to shape and form metal using machines**
- **Use manual and computerized lathes and mills**
- **Design and machine school and student projects (Past Student Projects: Engine parts, air engines, cell-phone holders, mechanical gears...)**

The two-year Machine Shop program is designed to teach students how to use and make parts. Students discover that a Machine Shop is the heart of modern manufacturing. They will learn how to use tools and machines to shape, create and form metal into functioning pieces of machinery and tools. The course prepares students for post secondary education or to directly enter the workforce.

Articulation Agreements

Central Maine Community College, Northern Maine Community College, Southern Maine Community College, Kennebec Maine Community College

Dual Enrollment Agreement

Central Maine Community College – 4 Credits

Examples of Career Possibilities – Machinist, CNC Programmer, Gunsmith, Mechanical Engineer, Marine Engineer, Artist, Tool and Die Maker

Marine Technology

Grades 10-12

- **Learn to install and repair marine systems (fuel, plumbing, electrical, engine)**
- **Learn to lay and infuse composite materials (Fiberglass, Carbon Fiber, Kevlar)**
- **Gain valuable experience to use in a variety of marine related professions**

The one-year Marine Technology program prepares students for a successful career in the marine industry. Boatbuilding and system repair basics include both traditional and modern construction techniques from resin infusion to electrical system repair. The program focuses on providing a clear understanding of the boatbuilding and repair processes. Strong emphasis is placed on modern materials, methods, and techniques. Special priority is given to safety, safe work habits, and proper personal protection.

Examples of Career Possibilities – Boat Builder, Fisherman, Marine Repair Technician, Marine Sales, Laminator, Marine Engineer, Artist

Medical Science For Health Occupations

Grades 10-12

- **Learn anatomy and physiology and medical terminology directly related to medical professions**
- **Explore medical careers and regional medical facilities**
- **Course taught by a Registered Nurse with 40 years of experience**

The one-year Medical Science for Health Occupations course is designed for students who are interested in pursuing a career in the healthcare field. The course integrates anatomy and physiology and advanced biology and explores the role of ethics. This “hands on” applied course consists of skills lab, career exploration, medical field projects and integrated research projects. This program prepares students for careers or post-secondary programs related to the healthcare field.

Articulation Agreement

Southern Maine Community College – 3 Credits

Beal College – 6 Credits

Dual Enrollment Agreement

Central Maine Community College – 3 Credits

Examples of Career Possibilities – Physician, Physician Assistant, Physical Therapist, Occupational Therapist, Registered Nurse, Nurse Practitioner, Paramedic, Medical Assistant, Radiologist

Outdoor Leadership

Grades 10-12

- **Learn a variety of outdoor skills, Earn multiple industry credentials, Develop leadership capabilities**

The 2-year Outdoor Leadership program will provide the basic training and skills necessary to students that are interested in pursuing postsecondary education and/or employment in the many professions that relate to the outdoors. Additionally, graduates will gain the skills and confidence they need to pursue leadership positions in any industry. Students will be challenged physically, mentally, and academically while developing their potential for leadership, teamwork, and service using the outdoor world as their classroom.

Year 1 - Course topics may include: Basic Outdoor Skills, Canoe and SUP, Winter Camping, Snowshoeing/ X-Country Skiing, Trail Building, Basic Survival, Leave No Trace Ethics, Fly Fishing, Team Building and Leadership, Map and Compass, Boater's Safety, Outdoor Cooking, and Naturalist Studies.

Year 2 - Course topics may include: Sea Kayak, Ocean Navigation, Advanced Canoeing, Rock Climbing, Search and Rescue, Mapping/Surveying/GIS, Teaching and Service, Conflict Resolution, Expedition Planning, Sailing, and Lifeguarding.

Possible Certifications

Registered Maine Guide/Wilderness First Aid/Leave No Trace Trainer/Basic Search and Rescue/Lifeguard/Mid-Coast Nature Steward/Maine Boating Safety

Examples of Career Possibilities – Adventure Educator, Recreational Guide, Field Scientist, Park Ranger, Forester, Marine Patrol, Game Warden, Military, Search & Rescue, AmeriCorps Member, Teacher, and Camp Counselor, among others.

Residential Construction

Grades 10-12

- **Learn basic construction techniques**
- **Build a variety of buildings (Past Projects: Tiny houses, guest cottages, homes, gazebos)**
- **Gain valuable work experience to use for employment**

This two-year program is designed to introduce students to the skills necessary to succeed in the construction industry. The hands-on portion of this program is where students learn the basics in building construction. Students will have the opportunity to do some of the following: use hand and power tools, basic house framing and construction, roofing, inside and outside finishes, window and door installation, and reading blueprints. The instructor and program are certified through NCCER.

Certifications

10 hour and 30 hour OSHA card

NCCER Certification and National Registry

Articulation Agreements

Eastern Maine Community College – 7 Credits

Central Maine Community College – 1 Credit

Dual Enrollment Agreement

Eastern Maine Community College – 3 Credits

Examples of Career Possibilities – General Contractor, Sub-Contractor, Carpenter, Cabinet Maker, Hardware Sales, Architect, Draftsman, Woodworker

School to Career Program

The goal of the School to Career (STC) program is to assist students in making appropriate choices and plans for their education/career paths during and after high school. The philosophy of this program recognizes that classroom learning provides only part of the skills and knowledge students will need to succeed in their chosen profession or career.

Cooperative Education

Grades 10-12

- **Up to 1 applied academic credit. Students are eligible to earn a maximum of 2 credits for work experiences during high school.**
- **Gain the experience employers are looking for.**

Through this program high school students earn credit for paid, supervised work in the community. A State of Maine Cooperative Education Agreement among the parent(s), student, school and employer is completed at the beginning of the year. Employers/ supervisor evaluate work ethic, on the job skills, and workplace responsibilities. Number of hours worked varies, but students generally work an average of 10 - 15 hours per week. Students must provide their own transportation to and from the job site.

Pre-requisites:

Students must be 16 years old and have a job.

Students must have taken or be enrolled in the Career Exploration Class

Career Exploration Class

Grades 10 - 12

1 credit (applied academic)

This course is a required for participation in the Cooperative Education Program. Students not enrolled in Cooperative Education are eligible to enroll in this course.

This course helps students learn the decision making process for education and career choices during high school and beyond. Class activities focus on the development of work-ready skills, which are essential for success in today's workplace. Students explore the answers to self-defining questions: "Who am I", "Where do I want to go?", "How do I get there?"

Certifications

WorkReady™ Certificate

Small Engine Technology

Grades 10-12

- **Learn how to break down, trouble-shoot, and rebuild engines.**
- **Work on lawnmowers, snowmobiles, four wheelers, dirt bikes, chainsaws, etc...**
- **Work on student, school, and community projects.**

Lawn mowers, snow throwers, ATVs and other power and recreational equipment make our lives easier and more enjoyable. This one-year course offers students a solid foundation of small engine operation and repair. Students learn the basics that an entry-level technician needs to gain employment or to further their education in order to turn a job into a career. This course helps students learn problem-solving abilities along with a thorough knowledge of the use of shop manuals and online research. Due to the increasing complexity of small engines in general, most employers prefer to hire technicians who graduate from formal training programs. At the discretion of the instructor, students are encouraged to bring in their own projects as long as they align with the curriculum and instructional goals,

Certifications

EETC Certificates – Equipment and Engine Training Council

Examples of Career Possibilities – Small Engine Technician, Diesel Technician, Automotive Technician, Motorcycle Technician, Sales

Welding/Fabrication I & II

Grade 10-12

- **Learn how to weld with Stick, MIG, TIG, and Fluxcore**
- **Design and Fabricate custom projects**
- **Learn how to program and use a robotic welder and PlasmaCam.**

This two-year program provides a foundation in welding safety and conventional stick welding required for entry-level metal fabrication. Additional industrial welding skills are covered as well. Also included are skills for cutting metal using a variety of methods and machines. First year students learn the skills needed for two types of welding. Second year students expand on their welding knowledge and skills with three additional welding processes. In addition, second year students who have shown significant progress with the welding process will be able to work with the industrial welding robot.

Certifications

Certified Welder AWS (American Welding Society)

Articulation Agreements:

Central Maine Community College – 3 Credits

Southern Maine Community College – 3 Credits

Dual Enrollment Agreement

Eastern Maine Community College – 3 Credits

Examples of Career Possibilities – TIG/MIG Welder, Stick Welder, Fabricator, Engineering Technician, Manufacturer, Welding Supervisor, Underwater Welder, Mechanical Engineer, Welding Inspector