

## COURSE CATALOGUE

### Agriculture Science

#### Agriculture Science

**1st Year Students / Double Period / Alternating Cycle / One (1) credit**

Agricultural Science and Natural Resources is a general course designed to reinforce and extend students' understanding of science by associating scientific principles and concepts with relevant application in Agriculture. Students will examine major phases of Environmental, Plant and Animal science along with specific biological concepts that govern management decisions in the Agriculture industry. Laboratory work will enable students to investigate the biological processes that occur in major agricultural plant crops including tissue culture. Important agricultural fields of study will be introduced to the students such as forestry, wildlife management and natural resource conservation. Students will also establish a SOE Program with the Connecticut Agricultural Experiment Station and The New Haven Department of Parks, Recreation and Trees as well as participate in Agricultural Science activities of the FFA. The Agricultural Biology section is designed to reinforce and extend students' understanding of biological science by associating scientific principles and concepts with relevant application in Agriculture. Students will utilize the Scientific Method while examining major areas of Plant and Animal science along with specific biological concepts that govern the growth and reproduction of living organisms as they pertain to the Agricultural industry. This one semester course strongly promotes a hands-on approach to teaching and learning in Agriculture. Laboratory activities emphasize how and why producers raise animals and grow crops and plants. This course will enhance student achievement in the basic learning area of applied science. Students will utilize their knowledge to implement management decisions and practices in Agriculture.

#### Agriculture Biology

**2nd Year Students / Double Period / Alternating Cycle / One (1) credit**

The primary purpose of this course is to provide a broad overview of key concepts of Biology with an emphasis on major Agriculture species. It is designed to offer content and skills necessary for advanced agriculture study, college preparation, and good citizenship. Agriculture Biology investigates the world's flora and fauna, habitats and agriculture production. Student skills are developed and guided in working cooperatively and individually to solve problems utilizing the Scientific Method. Specific emphasis is on laboratory practica and field activities.

Laboratory work will explore the foundational knowledge and advanced skills for applying technology to developing and improving bioremediation, bioprocessing, and expanding the understanding of biological systems. Curriculum units include: introduction to biology, microscopy, introduction to agriculture, greenhouse projects, cell biology and reproduction, organisms that inhabit land and water environments, management practices for domestic animals, fundamentals of nutrition, and Agriculture Business.

#### Plant Life Science I

**3rd Year Students / One (1) credit**

Plant Science is a course designed to provide a comprehensive overview of Greenhouse Management including the Floral Design industry. The content will develop and reinforce students' understanding of the cultivation, processing and marketing of plants within the "Green" Industry. Students will also examine the major varieties of annuals, perennials, bulbs, trees, shrubs and vines grown in the New England region. This course is intended to prepare students majoring in Plant Science for more advanced and specialized education in the field. Laboratory activities emphasize procedures for greenhouse management, vegetable

production and floral design. Students will utilize their knowledge to operate and manage collaborative programs with local businesses. This is the first course in the Plant Science concentration sequence.

### **Plant Life Science II: Special Topics**

**4th Year Students / One (1) credit. Requires Previous Course Sequence or Permission of Instructor and Advisor**

This is the second course in the Plant Science sequence. Plant Science is a course designed to provide a comprehensive overview of Greenhouse Management including the Floral Design industry. The content will develop and reinforce students' understanding of the cultivation, processing and marketing of plants within the "Green" Industry. Students will also examine the major varieties of annuals, perennials, bulbs, trees, shrubs and vines grown in the New England region. This one semester course is intended to prepare students majoring in Plant Science for more advanced and specialized direction. Laboratory activities emphasize procedures for Greenhouse management, vegetable production and floral design. Students will utilize their knowledge to operate and manage collaborative programs with local businesses.

### **Veterinary Science I**

**3rd Year Students / One (1) credit**

This course contains three main components: Chemistry with an agriculture / animal science focus, Genetics, and animal small organ systems. The Chemistry component includes introductions to laboratory safety, procedures, techniques, and the Scientific Method. Units include discussions and experiments in matter, the periodic table, atoms, solutions, acids and bases, and food chemistry and culminate in laboratory report writing. The Genetics section will discuss cell structures and function, meiosis and mitosis, principles of selective breeding, and small animal care experiences as well as attendance in the Small Animal CDE The Animal/Veterinary Science component is designed to provide a comprehensive overview of Veterinary technology skills including basic parasitology, breed identification, tools and animal behavior. This is the first course in the Veterinary Science concentration sequence.

### **Veterinary Science II / Special Topics**

**4th Year Students / One (1) credit. Requires Previous Course Sequence or Permission of Instructor and Advisor**

This is the second course in the Veterinary Science sequence. This course contains three main components: Chemistry with an agri-culture / animal science focus, Genetics, and Animal Anatomy and Physiology (Large and Small Animals). The Chemistry component includes introductions to laboratory safety, procedures, techniques, and the Scientific Method. Units include discussions and experiments in matter, the periodic table, atoms, solutions, acids and bases, and food chemistry and culminate in laboratory report writing. The Animal/Veterinary Science section is designed to provide a comprehensive overview of the livestock industry within the United States and globally. Students will also examine the major breeds of domestic and livestock animals including elements of proper housing and nutrition, and breeding. Activities emphasize procedures for breeding, care, feeding, and handling as well as processing and merchandising within the livestock industry. They will also gain laboratory and field experience in bacteriology, histology, pathology, genetics, and biotechnology.

## Agriculture Technology

### Agricultural Power, Structures, and Technology I

**1st Year Students / Double Period / One Semester /One (1) credit**

Instruction will be provided on FFA, SOE, employability/careers, and safety within the agricultural technology field. Special emphasis will be placed on hand wood-working tools, hand metal-working tools, and power tools used in the agricultural technology world. Topics include but will not be limited to introductions to: tractor driving; internal combustion engines; power technology; safe use and maintenance of grounds keeping equipment; and, tissue culture. Due to our satellite program at the Pardee Greenhouse, students will be engaged in the additional following topics: greenhouse structures, greenhouse crop production, floral design, vegetable production, hydroponics, interior landscaping, landscape design, installation and maintenance, and the utilization of computers in agriculture.

### Agricultural Power, Structures, and Technology II

**2nd Year Students / Double Period / One Semester /One (1) credit**

Instruction will be provided on FFA, SOE, employability/careers, and safety within the agricultural technology field. Topics include but will not be limited to: designing shops; maintaining and repairing tools; selecting wood materials; using plans; painting and glazing; grounds maintenance equipment (2-cycle and 4-cycle engines) – engine overhaul, repair, and maintenance; and, tissue culture. Due to our satellite program at the Pardee Greenhouse, students will be engaged in the additional following topics: greenhouse structures, floral design, vegetable production, hydroponics, interior landscaping, landscape design, installation and maintenance, and the utilization of computers in agriculture.

### Agricultural Power, Structures, and Technology III

**3rd Year Students / Double Period / One Semester /One (1) credit**

Instruction will be provided on FFA, SOE, employability/careers, and safety within the agricultural technology field. Topics include but will not be limited to: using electricity/electrical controls; constructing small buildings; irrigation systems and hydraulics; aquaponics and bioremediation; plumbing; and, tissue culture. Due to our satellite program at the Pardee Greenhouse, students will be engaged in the additional following topics: greenhouse structures, floral design, vegetable production, hydroponics, interior landscaping, landscape design, installation and maintenance, and the utilization of computers in agriculture.

### Agricultural Power, Structures, and Technology IV

**4th Year Students / Double Period / Full Year Two (2) credits. Requires Previous Course Sequence or Permission of Instructor and Advisor**

Instruction will be provided on FFA, SOE, employability/careers, and safety within the agricultural technology field. This is an advanced independent study, involving research in an area of agriculture power, structures and technology agreed to by instructor and student. Emerging fields of and current issues in agriculture are encouraged to enhance student learning and self-directed study. Students will be required to plan, conduct, document and conclude with a Power Point presentation, regarding the progress and outcomes of their independent study.

## Aquaculture Science

### Aquaculture Science

**1st Year Students / Double Period / Alternating Cycle / One (1) credit**

This course serves as an introduction to Aquaculture as it relates to the laboratory and worldwide marine and fresh water environments. The course includes studies of the scientific method, classification, microscopy, marsh transects, the water cycle, earth science, the periodic table and science experiments designed to improve CAPT readiness. Laboratory and field experiments reinforce student understanding in the scientific method while facilitating mastery of basic scientific concepts. The information and skills taught in this course are integrated in laboratory and field experiences in and around New Haven harbor aboard research vessels, and on local marshes and streams. The first half has a strong emphasis on the scientific method, natural resource management/earth science and ecosystem dynamics. The second half will focus on small groups designing controlled experiments. School wide winners will be entered in the New Haven Science Fair in March.

### Aquaculture Biology

**2nd Year Students / Double Period / Alternating Cycle / One (1) credit**

The primary purpose of this course is to provide a broad overview of key concepts of Biology with an emphasis on major Aquaculture species. It is designed to offer content and skills necessary for advanced aquaculture study, college preparation, and good citizenship. Aquaculture Biology investigates the world's waters as they relate to marine biology, marine life, habitats and aquaculture production. Student skills are developed and guided in working cooperatively and individually to solve problems utilizing the Scientific Method. Specific emphasis is on laboratory practica and field activities. Field trips on Long Island Sound extensively study this estuary aboard our research vessels. Marsh, stream, lake studies and coastal processes are essential to fulfill the program objectives.

Laboratory work will explore the foundational knowledge and advanced skills for applying technology to developing and improving bioremediation, bioprocessing, enhancement of biocultivation hatchery techniques for aquatic species and expanding the understanding of biological systems. Curriculum units include: Introduction to biology, microscopy, introduction to aquaculture, aquarium projects, cell biology and reproduction, organisms that inhabit marine and freshwater environments, management practices for finfish, Crustaceans, and Mollusks, fundamentals of nutrition, and Aquaculture Business.

### Aquaculture Biotechnology I

**3rd Year Students / Double Period / One Semester / One (1) credit**

In this course, students will gain cutting-edge knowledge and laboratory experience in the fast-growing field of biotechnology. Course topics include DNA: the Code for Life, Protein Synthesis, Mendelian Genetics, Genetic Manipulation through Recombinant DNA Technology, Microbiology, and Biotech Careers. The class content is supported by high-tech laboratory investigations where students perform actual procedures used in the biotechnology industry, NOT merely simulations. Lab activities include DNA extraction, electrophoretic analysis of DNA and proteins, transferring genes coding for fluorescent proteins into bacteria using recombinant DNA, ELISA immunoassays, and DNA fingerprinting. Instruction methods include PowerPoint presentations, research papers, visiting scientists, and field trips. This course provides the knowledge and skills that will prepare students for a future in genetics, microbiology, biotechnology, and many areas of medical science. Each year, two biotechnology students participate in Discovery to Cure summer internships at Yale University Medical Laboratories.

### **Aquaculture Biotechnology II**

**4th Year Students / Double Period / Full Year Two (2) credits. Requires Previous Course Sequence or Permission of Instructor and Advisor**

This is the second class in the Aquaculture Biotechnology sequence. This course is designed to provide students with an interest in biotechnology the opportunity to design and implement applications concerning the marine environment. The course begins with various standard procedures in microbiology and progresses through several short and long term projects originating from the "Microbes for Hire" curriculum, designed by the Center of Marine Biotechnology and the Maryland Sea Grant Extension Program. Laboratory experiments include: The Kombucha Biofilm-Bacteria, yeast, tea and symbiosis, using bacterial signals to measure chemical impacts, osmosis and Halobacteria, and Halobacteria and DNA extraction. Each student will also be responsible for a long-term study of his or her choice, with teacher approval, which will culminate in a research paper to be submitted in the last marking period.

### **Aquaculture Chemistry/Water Quality**

**3rd Year Students / Double Period / One Semester /One (1) credit**

This class will cover the use of the periodic table, including atomic mass, atomic number and the structure of the atom. At the completion of this course, the student will have had exposure to the role of Chemical Reactions and Principles that are involved in Aquatic Sciences and Biology. Basic Atomic structure, Chemical Bonding, Acid Base Reactions and Solutions will be covered. Stoichiometry, Reaction Kinetics, Equilibria and Thermochemistry will also be examined. Computer generation of lab reports is seen as an essential component of this class as well as designing, implementing and monitoring experiments.

Students will carry out research on topics related to Chemistry. Water Quality Monitoring of Long Island Sound and controlled tank systems will be performed. Relevant learning will include: experimental and control setups, independent and dependent variables, writing hypotheses, designing and writing experimental procedures, observation and data collection, data analysis and conclusion and assessing validity of conclusions.

Course work will consist of field and laboratory studies, conventional lab experiments, lectures, presentations and periodical literature research.

### **Aquaculture Chemistry/ Water Quality II: Special Topics**

**4th Year Students / Double Period / Full Year / Two (2) credits. Requires Previous Course Sequence or Permission of Instructor and Advisor**

This course will concentrate on the methodologies and techniques used by regulatory agencies and industry to monitor water quality and treat water and wastewaters. These methodologies include chemical analyses protocols as outlined in "Standard Methods for the Examination of Water and Wastewater", "Operation of Wastewater Treatment Plants", and other sources. Biological analysis protocols will include Aquatic Toxicity Testing as outlined by the Environmental Protection Agency, Potable Water Bacteria Tests as performed by CT Health Department, Benthic Macroinvertebrate Studies as outlined in "Rapid Bioassessment in Wadeable Streams and Rivers by Volunteer Monitors" by CT DEP, and Planktonic Community Studies as prescribed by the CT DEP. Treatment of water and wastewater will be covered as is outlined in "Operation of Wastewater Treatment Plants" by the California State University and Water Pollution Control Association, and CT Health Department Subsurface Disposal Criteria. The class will participate with local and state agencies, and area universities to investigate water quality and environmental issues. The course will emphasize the use of environmental monitoring techniques including biological taxonomy, chemical analyses, use and maintenance of field sampling and laboratory equipment, and quality assurance and quality control. General

environmental science topics will be integrated throughout the course. Report generation of studies performed will be the culmination of the course. Coordination with local regulatory or watershed agencies to perform ongoing research is a possibility.

### **Aquaculture Life Sciences I: Finfish/Shellfish Culture**

**3rd Year Students / Double Period / One Semester / One (1) credit - Prerequisite: Aquaculture Biology**

In this class, students will learn about the history and methods of farming finfish for ornamental purposes, human consumption, and enhancement of wild and recreational stocks. They will develop skills in the classification and identification of finfish. Time will be devoted to studying the life history and ecology of different finfish species, their anatomy, morphology and physiology. They will cover extensive and intensive culture methods, water quality management, bio-remediation, pathology, nutrition, aquaculture and the environment, as well as commercial operations. Students will construct and maintain small-scale aquaculture systems, collect data, and write reports. Attempts will be made to breed fish.

Participants will learn through hands-on experiences the techniques and methods employed in the commercial shellfish industry along the New England Coast, with particular emphasis being placed on the propagation techniques currently being used in Long Island Sound. The course is also structured to give students a greater understanding and realization of the extreme importance of protecting Long Island Sound as a natural resource. The students will learn the life cycle of commercially important bivalves, perform the water quality tests used in shellfish hatcheries, participate in activities that will teach them the anatomy, morphology and physiology of shellfish, learn the biological parameters that are necessary for the survival and spawning of shellfish in closed systems and participate in the design, construction, use and maintenance of various systems used to culture shellfish. This course is the first in the Aquaculture Life Science concentration sequence.

### **Aquaculture Life Sciences II: Special Topics**

**4th Year Students / Double Period / Full Year / Two (2) credits. Requires**

This course is the second in the Aquaculture Life Science sequence. Students choose one of the following two modules:

#### **Aqua Life Science 2: Finfish Production**

FinFish Production is an advanced course in Aquaculture Science for seniors. It is designed to expand upon and enhance the investigations begun in the Aquaculture Production courses offered in the student's junior year and establish a foundation for more advanced studies in aquaculture, fish husbandry or marine sciences in post-secondary education. It provides the learner with hands-on career experiences in a wide spectrum of scientific techniques employed in aquatic studies. Hands-on work is a requirement. Student abilities to apply both quantitative and qualitative reasoning, problem solving and higher order thought processes will be facilitated by the instructor in many curricular areas including, but not limited to: tank systems, culture methods, feed and habitats, live feed husbandry, water quality, sampling techniques, data collection, and HACCP certification.

Students will be graded on their class participation, field work in a variety of settings, materials and information acquired on field trips, class notes, portfolio, PowerPoint presentations, quizzes, tests and laboratory practicals.

Each student will select an area of interest, create a specialized plan of study, and pursue their chosen aspect of aquaculture through in-depth research for their entire senior year. Students will be required to submit a

research project that follows a specific format provided by the instructor. Failure to complete the research project will result in loss of credit, regardless of prior class standing.

### **Aqua Life Science 2: Shellfish Production**

Shellfish Production is an advanced course in Aquaculture Science for seniors. It is designed to expand upon and enhance the investigations begun in the Aquaculture Production courses offered in the student's junior year and establish a foundation for more advanced studies in aquaculture, shellfish husbandry or marine sciences in post-secondary education. It provides the learner with hands-on career experiences in a wide spectrum of scientific techniques employed in aquatic studies. Hands-on work is a requirement. Student abilities to apply both quantitative and qualitative reasoning, problem solving and higher order thought processes will be facilitated by the instructor in many curricular areas including, but not limited to: microalgae production, recirculating systems, culture methods, feed and habitats, hatchery technology, handling techniques, nursery systems, data collection, and HACCP Certification.

Students will be graded on their class participation, field work in a variety of settings, materials and information acquired on field trips, class notes, portfolio, PowerPoint presentations, quizzes, tests and laboratory practicals.

Each student will select an area of interest, create a specialized plan of study, and pursue their chosen aspect of aquaculture through in-depth research for their entire senior year. Students will be required to submit a research project that follows a specific format provided by the instructor. Failure to complete the research project will result in loss of credit, regardless of prior class standing.



## Aquaculture Technology

### Aquaculture Technology I

**1st Year Students / Double Period / Alternating Cycle / One (1) credit**

This course introduces freshman students to several marine technology and aquaculture technology areas. As so much of the emerging aquaculture industry is dependent upon traditional nautical, sail training, and seamanship skills, therefore, students are provided exposure to and experiences in a variety of marine related areas. Units of instruction cover in depth small boat safety, rowing, sailing, seamanship, outboard engine operation and the DEP approved CT Safe Boating Certificate Course. Special instructional areas include: trouble shooting and emergency procedures, nautical science, introduction to navigation, boat maintenance and repair and basic small vessel construction techniques.

### Aquaculture Technology II

**2nd Year Students / Double Period / Alternating Cycle / One (1) credit**

This course is designed to provide an overview of the technology scope and sequence options offered to students during their junior and senior years. Students will be introduced to the basic theoretical and practical skills involved in the following four areas:

- (1) Marine Construction – Students will obtain knowledge and skills for inboard and outboard vessel maintenance and design.
- (2) Marine Mechanics – Students will learn about basic tool identification/use, as well as the function/operation of, and routine maintenance on, two- and four-stroke outboard engines.
- (3) Ocean Engineering – Students will complete units in three dimensional modeling using current CAD technology, basic electronics, and hydraulic systems.
- (4) Vessel Operations – Students will build upon existing seamanship skills and achieve basic proficiency in powerboat operations. Throughout the process, students will be exposed to various career opportunities in Marine- and Ocean-related industries/fields. With the successful completion of the four sequences/units, students will be better able to determine which of their choices for junior/senior year technology classes they would like to pursue in greater depth.

### Marine Construction I

**3rd Year Students / Double Period / One Semester / One (1) credit**

Students will use CAD programs including Solid Works and Multisurf to learn the elements of three dimensional designs. Designs of boat models or other parts can be cut-out using our computer driven router (CNC router and CAM software). Students will also be responsible for school projects such as maintaining boats in the fleet, building floating docks and completing special projects for the Science Department. Small craft design topics include hull types, hydrostatic calculations and balancing the rig of a sailboat. Class discussions will include the topics of manufacturing, hull construction, composite materials used in boatbuilding, marine finishes and marine systems. Geometry and Algebra I should have been completed prior to taking this course. This course requires students to document their progress and to include reflective writing. This is the first course in the Marine Construction concentration sequence.



### **Marine Construction II**

**4th Year Students / Double Period / Full Year / Two (2) credits. Prerequisites: Algebra I & II and Geometry**

Previous Course Sequence or Permission of Instructor and Advisor this is the second course in the Marine Construction sequence. The focus of this course is on the individual design and/or construction of a student boat project. To begin this process, students will research historic vessels and write about the relevance of their chosen hull type. More detailed investigations on hydrostatics, balancing the rig of a sailboat, power requirements and stability will be required for students wanting to build their designs. Students competent in Algebra and Geometry are encouraged to enroll in this course. This course requires students to record the steps of the design process and to include reflective writing, shop drawings and complete plans.

### **Marine Propulsion I**

**3rd Year Students / Double Period / One Semester / One (1) credit**

Participation in this course will provide students with a working knowledge and experience in mechanics and the workings of outboard engines. Emphasis will be placed on engine systems and how the engines work, with special attention given to common problems and repairs. Knowledge of the fundamental and specialized tools used, safe working practices, and what constitutes a safe working environment will be achieved through hands on experience with engines. Outboard engines will be broken down, the parts cleaned or replaced, the engines rebuilt and then brought to the test tank to test and monitor operation. Outboard manufacturer's maintenance and repair videos will be used to enable students to work independently at workstations. The topics/units that students will receive instruction in will include ignition systems, engine cooling systems/ water pumps/ propellers/ lower units, fuel systems (fuel injection and carburetion), lubrication systems, 2-stroke and 4- stroke cycles, engine rigging, winterization and maintenance. This is the first course in the Marine Propulsion concentration sequence.

### **Marine Propulsion II**

**4th Year Students / Double Period / Full Year / Two (2) credits. Requires Previous Course Sequence or Permission of Instructor and Advisor**

This is the second course in the Marine Propulsion sequence. Participation in this course will provide students with a working knowledge and experience in mechanics and the workings of outboard engines. Emphasis will be placed on engine systems and how the engines work, with special attention given to common problems and repairs. Knowledge of the fundamental and specialized tools used, safe working practices, and what constitutes a good working environment will be achieved through hands on experience with engines. Outboard engines will be broken down, the parts cleaned or replaced, the engines rebuilt and then brought to the test tank to test and monitor operation. Outboard manufacturer's maintenance and repair videos will be used to enable students to work independently at workstations. The topics/units that students will receive instruction in will include ignition systems, engine cooling systems/ water pumps/ propellers/ lower units, fuel systems (fuel injection and carburetion), lubrication systems, 2-stroke and 4- stroke cycles, engine rigging, winterization and maintenance. Time permitting, MP II students may also experience units dealing with Metal Fabrication (cutting and welding) and marine diesel engine principles and operation.

### **Ocean Engineering I**

**3rd Year Students / Double Period / One Semester / One (1) credit. Prerequisites: Algebra I & II, Geometry**

This course introduces students to various areas of physics through application to marine technology and the engineering process. The curriculum includes units on Drafting, Computer-Assisted Drafting/Design (CAD), Analog Electronics, Mechanisms, Pneumatics, Hydraulics and Sub-Sea Physics. These disciplines are brought together in a semester-ending project wherein students design, construct and test a Remotely-Operated Vehicle (ROV) which must perform a variety of underwater tasks. Emphasis is placed on the completion of short-term projects, daily in-class work, and the group project to end the semester. Mathematics and algebraic expressions are utilized frequently. Geometry, Algebra I and Algebra II should have been completed successfully prior to taking this course. The course requires students to document their daily and weekly progress and include reflective writing about their experiences and projects. Students who are highly self-motivated and willing to challenge themselves will succeed in this course. This course is the first in the Ocean Engineering concentration sequence.

### **Ocean Engineering II**

**4th Year Students / Double Period / Full Year / Two (2) credits. Requires Previous Course Sequence or Permission of Instructor and Advisor**

This is the second course in the Ocean Engineering sequence. This course explores in greater depth those topics begun in the junior year course, and expands into further areas of current marine technology. Students continue to develop their skills by completing advanced units in CAD, Digital Electronics, Mechanical Engineering, Programming, Robotics, and Underwater Technology/Systems. Emphasis is once again placed on the completion of both short- and long-term projects, as well as daily class work. Class projects include the use of sidescan sonar to map a portion of Long Island Sound and the construction, testing and use of a hydrophone, a Conductivity/Temperature/Depth sensor, fresh water Remotely-Operated Vehicle (ROV) for intra-class competition, and an Autonomous Underwater Vehicle (AUV). The final project involves the construction of an ROV for entry in the National ROV Competition, wherein all phases of project management are studied and incorporated into daily class work. Mathematics and algebraic expressions are utilized a great deal. Completion of (or concurrent enrollment in) Pre-Calculus is preferred, as trigonometric concepts will be used. This course requires students to document the steps of the engineering process and to include reflective writing on their experiences. A high degree of self-discipline and academic motivation is understood to be a prerequisite for successful completion of this course.

### **Vessel Operations I**

**3rd Year Students / Double Period / One Semester / One (1) credit**

Participation in this course is designed to train the student as a large vessel crew member and to eventually become captain of a motor launch, charter boat, ferry, fishing vessel, or to develop the knowledge and skills that could lead to a career in the Merchant Marine, the Navy or the Coast Guard. Students taking this course will be introduced to the coast Guard Regulations applicable to the construction, maintenance and operation of vessels and to obtaining various Coast Guard licenses. They will be introduced to what is involved in the operation of large vessels and how to navigate by various methods. Advanced seamanship skills will be learned such as light cargo handling and towing. They will become familiar with all of the systems that are present aboard a vessel and how each functions to support the operation of the vessel. The use of various communication systems and radar will be practiced. There will also be instruction in watch standing

procedures, emergency procedures, heavy weather procedures, and the Coast Guard Auxiliary Coast Watch Program. This is the first course in the Vessel Operations concentration sequence.

### **Vessel Operations II**

**4th Year Students / Double Period / Full Year / Two (2) credits. Requires Previous Course Sequence or Permission of Instructor and Advisor**

This is the second course in the Vessel Operations sequence. Participation in this course is designed to train the student as a large vessel crew member and to eventually become captain of a motor launch, charter boat, ferry, fishing vessel, or to develop the knowledge and skills that could lead to a career in the Merchant Marine, the Navy or the Coast Guard. Students taking this course will be introduced to the coast Guard Regulations applicable to the construction, maintenance and operation of vessels and to obtaining various Coast Guard licenses. They will be introduced to what is involved in the operation of large vessels and how to navigate by various methods. Advanced seamanship skills will be learned such as light cargo handling and towing. They will become familiar with all of the systems that are present aboard a vessel and how each functions to support the operation of the vessel. The use of various communication systems and radar will be practiced. There will also be instruction in watch standing procedures, emergency procedures, heavy weather procedures, and the Coast Guard Auxiliary Coast Watch Program.

### **Elective Courses**

#### **Anatomy and Physiology**

**Elective Course/ Single Period/ Full Year/ One (1) Credit**

Prerequisite: Satisfactory completion of agriculture or aquaculture biology and instructor approval required.

This is an intensive year-long course with laboratory, lecture and independent research components. Laboratory activities include the dissection of a cat or other representative mammal. Lab work includes histology, dissection and supporting activities where systems such as the digestive, circulatory, respiratory, urogenital, muscular, central nervous and skeletal systems are explored. Comparisons to human anatomy are emphasized. Students will be expected to work with a lab partner to complete the dissection. Lectures supplement the dissection to gain knowledge about the physiology of the mammal. Concepts gained in prerequisite courses will be applied. Throughout the course, students are expected to conduct research on issues pertinent to the body system being covered. This research will be shared in the form of research papers and PowerPoint presentations.

#### **Aquatic Ecology**

This concentrated half-year elective course involves the study of natural environmental systems and how they interact. The aquatic environment is both familiar and alien: here in the New Haven area, lakes and estuaries are in great abundance, yet they are habitats to which we are not native. The native inhabitants are subject to forces and constraints that terrestrial creatures do not experience. In the course of the semester, students will explore the physical factors that govern all ecosystems with a focus on aquatic ecosystems, and become acquainted with the strange organisms that live there. Students survey the various types of aquatic systems, including the amazing diversity of aquatic habitats found right here on The Sound School campus. Frequent field work in the surrounding area is part of this course. In addition, we will consider our dependence on aquatic systems as resources, and explore how best to conserve and manage them. Students will be expected to apply ecology principles to the saltwater environment and be involved in multiple inquiry-based investigations, such as: exploring the food chain/energy web, investigating how a salt marsh recycles, performing productivity studies of the salt marsh, or studying the distribution of native or invasive species in

inter-tidal zones. Emphasis is placed on the completion of lab work, group projects, PowerPoint presentation of research completed, and satisfactory performance on periodic quizzes and tests.

### **Chemistry**

**1st year students /single period /full year /One credit**

This course examines the composition of various substances and the changes they can go through. It also shows you how chemistry touches our lives almost everywhere and every day, in medicine, the clothes we wear, the games we play, as well as the industries that make the things we use. The periodic table and simple compounds are covered as well as the basics of Chemistry. This is a complete up-to-date course on Chemistry.

### **Environment and Adaptation**

**Elective / Single Period / Half Year / One half (1/2) Credit**

This single-period elective course is an overview of the evolutionary processes that shape each of the Earth's organisms to fit the specific set of conditions in which it is found. Each characteristic of every living organism is a solution to a particular problem.

Topics covered include Mendelian genetics, DNA, evolution theory, mechanism of evolution, timeline of life on Earth, and biome analysis. Group projects and PowerPoint presentations will be included in assessment methods.

### **Exploring Agriscience**

**1st & 2nd Year Students/ One (1) credit - (Elective) Offered periodically.**

This "Hands-on" course is designed to introduce students/individuals to the dynamic industry of Agriculture. Research has shown that most Americans have a misconception of Agriculture. This course provides students with an overview of the different aspects of the Agriculture industry and an understanding of the role of agriculture in our lives. It starts with the basic and general information such as career opportunities, safety, FFA, SAE and then provides competency based instruction on basic agricultural science skills and applications. Units of instruction include but are not limited to the following: technology in the world of agriculture, personal safety, growing plants, animal industry, exports and imports, cattle industry, crop production, scientific research of soil, plant structures and their uses, ethical treatment of animals, biotechnology in agriculture: tissue cultures, and careers in agricultural science.

### **Field Research Methods**

This course concentrates on field scientific inquiry and performance of ongoing field studies. Relevant work includes physical, chemical, and biological assessments of streams, wetlands, tidal marshes, and estuaries. The course emphasis is placed on utilization of measurement instruments and data collection tools and methods. The opportunity exists for participation in Federal, State, and municipally funded research projects.

### **Oceanography**

Oceanography is a full year, one credit elective course focused on topics such as plate tectonics, physics and chemistry of seawater, ocean currents, climate/ocean interaction and human interaction with the oceans. The topics are studied through use of a text, a variety of individual and group projects and through open classroom discussion of relevant current events. Students usually take oceanography as seniors, but juniors and freshman are frequently included on the class roster.

## Physics

**3<sup>rd</sup> and 4<sup>th</sup> Year Students / Single Period / One (1) credit**

Prerequisite: Satisfactory completion of (or concurrent enrollment in) Pre-Calculus and instructor approval required.

The study of Physics is essentially an orderly, systematic approach to understanding how the physical universe functions. This should be thought of as one of the required courses for those interested in engineering, science and mathematics. It is an applied math course showing students where many skills are put to use, with an emphasis on conceptual and logical methods of problem solving. Competence in Algebra is a prerequisite; topics will be reviewed, but students are expected to put in time outside of class to strengthen any weak areas. Topics covered in the classroom and explored through laboratory exercises include: vectors, mechanics, gravity, heat, electricity, light and sound.

## Small Business Entrepreneurship

This course prepares students to operate a small business that sells rents or leases goods and services to a worldwide market. Students thoroughly investigate how small businesses are run and the tools necessary for a successful venture. These include business plan development, purchasing agreements, marketing skills, advertising programs, accounting ledgers, customer service programs and employee / employer relationships

Students will simulate a business launch / start up using *The School Store* as a working model. The student coursework involves data collection and report generation via Word, Excel, Publisher and other basic PC software so that students can generate reports, track sales, predict sales, forecast cash flow, create inventory ledgers, and create product catalogs as well as basic clerical activities.

In addition, students learn money management skills which they can use now and throughout life, such as creating a budget, balancing a checkbook, setting up filing systems, bill paying, tracking expenditures, as well as other accounting activities.

The course includes field trips to area businesses

## English

### English I

**1st year students / One (1) year / One (1) credit**

Freshman English is the study of the individual and society. The course introduces a variety of genres from selected literary periods, a variety of projects, computer instruction, and foundational instruction in literacy skills and reading comprehension. Literary skills range from the review of plot structure to identifying themes and analyzing figurative language. The focus of literature texts is on world classics as well as contemporary literature that have helped to define and shape of our society. Students will develop their writing craft through studying the writing process and through practice in writing a variety of genres. This course uses a multidisciplinary, multicultural, progressive approach to teaching literature.

## English II

**2nd year students One (1) year / One (1) credit - Prerequisite: English I**

Sophomore English is the study of the individual and society, same as above, and reflection on philosophy, psychology, morals, values, and equality as explored through literature. Through the use of various texts and electronic media, students discover and analyze human behavior. The goal of this course is to help students increase their cognitive and interpretive skills; to prepare them for the Connecticut Academic Performance Test (CAPT) and the Scholastic Assessment Test (SAT); to improve their understanding of genres and literary periods; and to cultivate their ability to be self-guided, life-long learners. Students will develop their writing craft through studying the writing process and through practice in writing a variety of genres. This course uses a multidisciplinary, multicultural, progressive approach to teaching literature.

## English III

**3rd year students One (1) year / One (1) credit - Prerequisite: English II**

Junior English is the study and appreciation of the rich and varied multicultural heritage intrinsic in American Literature. Emphasis is placed on exposing students to a broad range of works that represent and explore the diverse perspectives on being American. The goal of the course is to help students increase their critical thinking skills by analyzing and interpreting literature; to prepare them for the Scholastic Assessment Test (SAT); to increase both written and oral communication skills. Students will develop their writing craft through studying the writing process and through practice in writing a variety of genres. This course uses a multidisciplinary, multicultural, progressive approach to teaching literature.

## English IV

**4th year students One (1) year / One (1) credit - Prerequisite: English III or Maritime Literature**

Senior English is the study of literature, communications, and artistic media, emphasizing their influence on and reflection of human history, values, and behavior in society and in individuals. The goal of this course is to help students increase their communication skills through the study of World and contemporary literature. Reading and interpreting classical as well as contemporary writing will help students reach their highest potential in the reading of the craft of writing. Students will develop their writing skills through weekly writing, as well as extended writing and research assignments. Emphasis is placed on assisting students in the college preparation process and vocational planning.

## Advanced Placement English Literature and Composition

**4th year students One (1) year / One (1) credit - Prerequisites: English III, writing test, Permission of instructor**

AP English is a rigorous year of reading, writing, thinking, and discussing. Students will read actively since the works taught require careful, deliberate reading. The approach to analyzing and interpreting texts involves learning how to make careful observations of textual detail, establishing connections among observations, and drawing from those connections a series of inferences leading to an interpretive conclusion about the work's meaning and value. Students will write analytical and creative pieces with an emphasis on explaining clearly, cogently, even elegantly, what is understood about literary works and students' interpretations. To that end, writing instruction will include attention to developing and organizing ideas in clear, coherent, and persuasive language, applying their study of the elements of style.

## English/History

**American Studies (Reconstruction through the 20<sup>th</sup> century)**

American Studies offers an interdisciplinary approach to learning about the history and literature of American Society and culture. In this course, students will examine American literature and history using novels, short stories, essays, poetry, music, historical documents, art, and other resources. Using historical eras as an organizing theme, history and literature are interwoven to tell the American Story. This full-year, double-period course is open to juniors for credit in both US History 2 (1 credit) and English 3 (1 credit).

## History

### World History

**1st year students One (1) year / One (1) credit**

Through a geographical approach, World history examines important themes and impacts on the development of civilization. From the development of early river valley civilizations and early forms of government through the empires of the ancient world, students discover the legacies of those who have gone before us and who have laid the groundwork for our current social system. Students then learn about the developments and advancements of Medieval Europe including the lasting impacts of documents like the Magna Carta and events like the Crusades. Additionally students will discover the advancements in science, religion, government, education and philosophy of the Renaissance and how they continue to impact our lives. Students will study the Civilizations and development of other geographic regions like the Middle East, Asia and Africa and the major world religions. Finally, students will gain an understanding of global interactions and impacts through a study of the Age of Exploration and the first Global Age. In addition to the textbook, resources such as historical documents, films and role-playing will be utilized to enhance the students' learning. Several group and individual projects will be assigned throughout the school year.

### United States History I

**2nd or 3rd year students One (1) year / One (1) credit**

US History I is a full year course, generally taken in the sophomore year, which can fulfill one of the three required credits in history and one of the two required credits in US History. US I is a survey course that attempts to cover all the major events from the Native American period before Columbus to the Civil War. Major themes of this course include the roots of the American identity, the origins of American political culture and the role and legacy of slavery in American society. Skills in reading, writing, critical thinking and analysis will be of particular concern in order to prepare students for the CAPT.

### Civics

**2nd, 3rd, or 4th year students One half (1/2) year / One half (1/2) credit**

Democracy depends upon the participation of an educated public. Understanding the institutions of government and its role in our everyday lives is the primary focus of this course. Using a thematic approach, students will explore the growth of democracy, federalism, and the importance of civic participation. Emphasis will be placed on strengthening study skills, critical thinking, and writing through individual study, participation in class discussion and involvement in group activities. Students will complete essays and presentations throughout the semester. Electives: Students may choose among the following semester electives to be paired with their one semester of Civics.

### Constitutional Law

**2nd, 3rd, or 4th year students One half (1/2) year / One half (1/2) credit - (Elective) (can be paired with the half year of Civics)**

An extension of the civics curriculum into a focused look at the judicial Branch of the Federal Government. This course will examine in depth the workings of the Supreme Court and the cases it has decided over the years. A focus will be placed on the understanding of Landmark decisions and their long-term effects on our



society. Students will create research papers and presentations to enhance and demonstrate their learning in this course.

### **Current Issues in Environmental Studies**

**2nd, 3rd, or 4th year students One half (1/2) year / One half (1/2) credit - (Elective) (can be paired with the half year of Civics)**

In this interdisciplinary elective course, students examine current issues effecting the environment on local, national, and global levels. Students research and discuss environmental topics based on a framework, which examines issues from historical, political, socio-economic, and scientific perspectives. The course also focuses on solutions to environmental problems, which can be as simple as one person bringing their own bags to the grocery store or as complex as the Kyoto Accords. Topics covered vary each year based on student interest, and cover issues from Acid Rain to Urban Sprawl. (.5 History Credit, open to Juniors and Seniors)

### **Maritime Culture 2nd, 3rd, or 4th year students**

**One half (1/2) year / One half (1/2) credit - (Elective) (can be paired with the half year of Civics)**

This is a team taught course intended to combine maritime history with an exploration of the cultural life of the sea especially as it was expressed in the sea music of the 19th Century. The course covers the maritime history of New England from the beginning of European settlement to the end of the age of sail at the end of the 19th Century. At the same time, students learn and analyze work songs (often called sea chanteys) and ballads which relate to the historical themes of each unit. Trips aboard the Schooner Quinipiack (and possibly other larger sailing vessels), the rowing dories and the 35 foot New Haven Sharpie are used to give students hands-on experience in maritime technology, the maritime environment and shipboard life. Trips to Mystic Seaport and overnight sails on large schooners are included in years when schedule and financial resources allow.

### **20th Century History**

**2nd, 3rd, or 4th year students One (1) year / One (1) credit**

20th Century History is a full year course that can fulfill one of the three required credits in history and one of the two required credits in US History. Unlike a survey course that attempts to cover all the major events of a particular period, 20th Century covers several critical developments in depth. Each unit therefore, is longer and more detailed than those in other history courses. In addition, there is a particular focus on the development of essential skills such as writing and critical thinking. Central themes to be explored include the impact of technology and industry, the changing role of government in society, the concept of just war, the issue of race and ethnicity in American society, and the role of morality in individual and collective decision making. The units included in the course are:

- East Bridges of New York: America at the Peak of the Industrial Age
- The Great Depression and the New Deal
- World War II: A Just War?
- The Cold War, The Nuclear Arms Race and Just War Theory
- The Civil Rights Movement
- Vietnam War: A Just War?
- Watergate

## Mathematics

### Algebra I

**1st Year Students / Full Year / One (1) credit**

This course will teach students practical applications of algebraic concepts to real-life problems. Students will learn to solve equations and variable expressions, explore scientific notation, apply algebraic equations to geometric shapes, analyze data through matrices and graphs both manually and computer-generated, and discover coordinate geometry and functions. The goals of this program are to prepare the student for future success by helping them develop their abilities to explore and solve mathematical problems, work cooperatively with others and communicate ideas clearly. Students are graded on regular class work and homework assignments and periodic quizzes and tests.

### Geometry

**2nd Year Students / Full Year / One (1) credit**

Students will learn geometry through exploration activities and problems. Class participation is integral in the construction of definitions and discovering properties of geometric figures as they are introduced. Students develop conjectures regarding figures and the relationship among figures. This course is an excellent preparation for the CAPT, PSAT and SAT tests. Topics covered include:

- Inductive and Deductive Reasoning
- Sequences/Number Patterns
- Defining Line and Angle Relationships
- Defining Parallel and Perpendicular Lines
- Defining Polygons, Triangles and Special Quadrilaterals
- Pythagorean Theorem
- Geometric Constructions
- Triangle Congruence:SSS/SAS/ASA/AAS/HL
- Proofs
- Area, Surface Area, and Volume

Students are graded on regular class work and homework assignments and periodic quizzes and tests.

### Honors Geometry

**1st and 2nd Year Students / Full Year / One (1) credit**

Students will cover all of the material outlined above for Geometry with the addition of the following:

- Similarity Including Ratio, Proportion and Dilations
- Trigonometry
- Circles and Their Connections to Coordinate Geometry, Trigonometry and Transformational Geometry

Students are graded on class participation, regular class work and homework assignments, and periodic quizzes and tests. Additionally, all students are required to submit an original year-end project as approved by the teacher.

### **Algebra II**

**3rd and 4th Year Students / Full Year / One (1) credit - Prerequisites: Algebra I**

This course builds upon the concepts learned in Algebra I and Geometry. Students will learn how to use Algebra to model and solve real-life problems using systems of equations and inequalities, probability and statistics and graphs. Students will continue the exploration and application of functions, matrices and determinants, and quadratic functions. Further development of series and sequences and trigonometry will be covered focusing on practical applications to everyday life. Students will also become used to the Texas Instrument graphing calculator (TI-83 plus) as a tool to solve algebraic problems. This course is an excellent preparation for the PSAT and SAT tests. The goals of this program are to prepare the student for future success by helping them develop their abilities to explore and solve mathematical problems, work cooperatively with others and communicate ideas clearly. Students are graded on class participation, regular class work and homework assignments, and periodic quizzes and tests.

### **Honors Algebra II**

**3rd and 4th Year Students / Full Year / One (1) credit - Prerequisites: Algebra I**

This course builds upon the concepts learned in Algebra I and Geometry. Students will learn how to use Algebra to model and solve real-life problems using systems of equations and inequalities, probability and statistics and graphs. Students will continue the exploration and have an in-depth understanding of applications of functions, matrices and determinants, and quadratic functions. Further development of series and sequences and trigonometry will be covered focusing on practical applications to everyday life. Students will also become used to the Texas Instrument graphing calculator (TI-83 plus) as a tool to solve algebraic problems. This course is an excellent preparation for the PSAT and SAT tests. The goals of this program are to prepare the student for future success by helping them develop their abilities to explore and solve mathematical problems, work cooperatively with others and communicate ideas clearly. Students are graded on class participation, regular class work and homework assignments, and periodic quizzes and tests.

### **Consumer Mathematics**

**3rd and 4th Year Students / Full Year / One (1) credit**

This course focuses on real-life mathematics. Starting with basic mathematical skills of decimals, percents, fractions, measurement and statistics and building upon these to a firm understanding of Income, Banking, Credit, Transportation, Housing, Taxes, Insurance and Investments. The student will learn mathematical skills that are the basis for many practical applications in everyday life and be able to work cooperatively, critically analyze a problem and make an informed decision. Students are graded on class participation, regular class work and homework assignments, and periodic quizzes and tests.

### **Pre-Calculus**

**3rd and 4th Year Students / Full Year / One (1) credit - Prerequisites: Algebra I, II, & Geometry**

This course is intended for students planning on taking Calculus in the following year - either at Sound School or college. Topics to be focused upon include: Function and Graphs of Functions, Exponential and Logarithmic Functions, Trigonometry, Analytic Trigonometry, Solving Systems of Equations, Matrices, Sequences and

Series, Limits and Differentiation. Use of the graphing calculator will be emphasized throughout the curriculum. Students are graded on regular class work, nightly homework assignments and periodic quizzes and tests.

### Honors Pre-Calculus

3rd and 4th Year Students / Full Year / One (1) credit -

This course backfills and covers in more depth select Algebra 2 topics, such as polynomial functions, and introduces analytical geometry and trigonometric functions not typically covered in the standard Geometry curriculum. In addition, it introduces the concept of limits, and lays the requisite foundation for a successful transition to Advanced Placement or College Calculus. The pacing for this course is rigorous and structured to complete the entire textbook. Specific course topics include:

- Functions and their Graphs
- Polynomial and Rational Functions
- Exponential and Logarithmic Functions
- Trigonometric Functions
- Analytical Geometry, including Parametrics and Polar Coordinates
- Vector Analysis
- Systems of Equations and Inequalities
- Matrices and Determinants
- Sequences, Series, and Probability & Statistics
- Limits and an Introduction to Calculus

Students are graded on regular class work and homework assignments, and periodic quizzes and tests.

At least one long term project will be assigned. A personal graphing calculator is strongly recommended.

### Calculus

**4th Year Students / Full Year / One (1) credit - Prerequisites: Algebra I, II, Geometry, Pre-Calculus**

This course prepares students for further study of Calculus in college. Topics covered in the course include (but are not limited to): Infinite Limits & Differentiation, Applications of Differentiation, Integration, Log/Exponential & Transcendental Functions, Differential Equations, Infinite Series and Advanced Integration Techniques. Use of the graphing calculator will be indispensable throughout the curriculum. Those students who would choose to take the AP Calculus AB exam will be given the requisite list of topics/skills to master by the test date, and allowed to take the test if they demonstrate sufficient knowledge of the material. Students are graded on nightly homework assignments, weekly problem sets, practice AP exams, periodic tests and graded problem presentations.

### World Languages

**French I** \*(PLEASE NOTE that French Courses will not be offered after 2012)

**Offered in Grades: 9,10,11,12 / One (1) credit - (Offered Alternate Years)**

French I is an introduction to French language and culture. It is designed for students with little or no previous background in the language and stresses the development of listening comprehension and speaking skills. Vocabulary topics include general interest subjects, such as family, home, school, food, shopping and leisure time. Students are introduced to the culture of the Francophone world, with special emphasis on the geography of France and its heritage. They also begin to read short passages and write simple sentences in French.

**French II** \*(PLEASE NOTE that French Courses will not be offered after 2012)

**Offered in Grades: 9,10,11,12 / One (1) credit - Prerequisites: French I (Offered Alternate Years)**

French II is an intermediate level course designed to help students further develop their speaking, reading and writing skills. More advanced grammar concepts and cultural readings from the French-speaking world are presented. Students read short passages from literature as well as from contemporary sources. Special emphasis is placed on reading comprehension and composition skills. French II Honors includes additional cultural readings, translation, poetry and research projects.

**French III** \*(PLEASE NOTE that French Courses will not be offered after 2012)

**Offered in Grades: 10, 11, 12 / One (1) credit - Prerequisites: French II (Offered Alternate Years)**

French III continues the development of listening, speaking, reading and writing skills, with added emphasis on the analysis of literature. In class, students are expected to communicate in French whenever possible, using language that describes events in the past, present and future. Research papers and oral presentations are also required. Cultural activities focus on French history and literature.

**French IV** \*(PLEASE NOTE that French Courses will not be offered after 2012)

**Offered in Grades: 11, 12 / One (1) credit - Prerequisites: French III (Offered Alternate Years)**

French IV is designed to help students expand vocabulary through topical readings and analysis of literature. Advanced grammatical structures are presented and reinforced through written and oral presentations. Cultural studies of the French-speaking world include poetry, drama, short stories, articles and novels. The class is conducted in French.

**Italian I**

**Offered in Grades: 9,10,11,12 / One (1) credit - (Offered Alternate Years)**

Italian I is an introduction to Italian language and culture. It is designed for students with little or no previous background in the language and stresses the development of listening comprehension and speaking skills. Vocabulary topics include general interest and "survival" subjects, such as numbers, following directions, family, home, school, food, and shopping. Students are introduced to Italian culture and begin to read short passages and write simple sentences in Italian.

**Italian II**

**Offered in Grades: 9,10,11,12 / One (1) credit - Prerequisites: Italian I (Offered Alternate Years)**

Italian II is an intermediate level course designed to help students further develop their speaking, reading and writing skills. More advanced grammar concepts and cultural materials are presented. Students read short passages from literature as well as from contemporary sources. Special emphasis is placed on reading comprehension and composition skills.

**Italian III**

**Offered in Grades: 10, 11, 12 / One (1) credit - Prerequisites: Italian II (Offered Alternate Years)**

Italian III continues the development of listening, speaking, reading and writing skills, with added emphasis on the analysis of literature. In class, students are expected to communicate in Italian whenever possible, using language that describes events in the past, present and future. Research papers and oral presentations are also required. Cultural studies focus on the lives and works of Italian historical figures, authors, and artists.

### **Italian IV**

**Offered in Grades: 11, 12 / One (1) credit - Prerequisites: Italian III (Offered Alternate Years)**

Italian IV is designed to help students expand vocabulary through the discussion and analysis of literature. Advanced grammatical structures are presented and reinforced through writing assignments and oral presentations. Italian history and art are studied in depth. The class is conducted in Italian.

### **Spanish I (Honors option also available)**

**1st, 2nd, 3rd, and 4th year students / One (1) year/One (1) credit**

Spanish I provides an introduction to the Spanish language and the vast and diverse culture of the Spanish-speaking world. This course is designed for students with little or no previous knowledge of Spanish. Spanish I will provide the student with novice ability to understand, speak, read, and write Spanish. The student will gain insight and knowledge of the basic linguistic structure of the language as well as realistic recognition and usage of current idiomatic expressions. Instruction will seek to encourage the student to use the Spanish language as if it were native. Language imitation, memorization, role-playing, and interaction provide the learning foundation towards future creative production of the language placed in a setting of guided group cooperative learning.

### **Spanish II (Honors option also available)**

**1st, 2nd, 3rd and 4th year students / One (1) credit -Prerequisites: Spanish I**

Spanish II is an intermediate course designed to help students further their speaking, listening, reading and writing skills in Spanish. A student should have passed Spanish 1 or 2 years of middle school Spanish (with placement test) and have some basic communicative skills. More complex language structures are introduced to increase conversational, reading and writing ability. In addition to improving their language skills, the students will gain a deeper awareness and sensitivity to the values and cultures of Spain and Mexico, as well as those of the Central American, South American and Caribbean nations. The learning method and setting is that of communication in Spanish and group cooperative learning via language imitation, memorization, role playing and teacher/student interaction, as well as individual linguistic creation to express ideas, opinions and concepts.

### **Spanish III (Honors option also available)**

**2nd, 3rd, and 4th year students / One (1) credit - Prerequisites: Spanish II**

Spanish III continues the development of listening, speaking, reading and writing skills in Spanish, with added emphasis on literature, composition and analytical skills. In class, students are expected to communicate in Spanish whenever possible, using language that indicates past, present and future. Research papers and oral presentations in Spanish are also required. Cultural activities focus on Hispanic literature and events in Latin America, Spain and the United States.

### **Spanish IV (Honors option also available)**

**3rd, and 4th year students / One (1) credit - Prerequisites: Spanish III**

Spanish IV is designed to help students expand vocabulary through topical readings and analysis of literature. Advanced grammatical structures are presented and reinforced through writing and oral presentations. Cultural Studies of the Spanish-speaking world include poetry, drama, short stories, articles and novels. The class is conducted wholly in Spanish.

**\*We also offer Native Spanish Speaker I, Native Spanish Speaker II, Native Spanish Speaker III and Spanish V/AP Spanish (course descriptions are not available at the moment)**