

## ELECTIVES

### ACCOUNTING (1 credit)

**Grade: 10-12**

Course curriculum is designed to provide students a strong foundation in accounting principles. Students will learn what business transactions are and how accountants use a double-entry system (debits and credits) to keep track of these transactions. Next students will study the complete accounting cycle of recording transactions, preparing financial statements, and "closing the books" for small, single-owner service and merchandising businesses. This course prepares students for post-secondary accounting courses.

**Required Material:** Excel software is required.

### ART HISTORY (1 credit)

**Grade: 9-12**

Art History is a year-long elective designed to enable students to develop knowledge of the history and theory of art and the relationship between artist, artwork, and society. Students will research and critique periods, styles, and works of art from early civilizations through modern and contemporary art.

### ASTRONOMY (.5 credit)

**Grade: 9-12**

Why do stars twinkle? Is it possible to fall into a black hole? Will the sun ever stop shining? Since the first glimpse of the night sky, humans have been fascinated with the stars, planets, and universe that surrounds us. This course will introduce students to the study of astronomy, including its history and development, basic scientific laws of motion and gravity, the concepts of modern astronomy, and the methods used by astronomers to learn more about the universe. Additional topics include the solar system, the Milky Way and other galaxies, and the sun and stars. Using online tools, students will examine the life cycle of stars, the properties of planets, and the exploration of space.

### BUSINESS LAW (.5 credit)

**Grade: 9-12**

This course is designed to provide students with the knowledge of some of the vital legal concepts that affect commerce and trade, after first gaining some familiarity with how laws are created and interpreted. Students will then be introduced to the types of businesses that can be created to engage in commerce as well as the contractual and liability considerations that can impact a business. Laws that affect how a business is regulated will also be reviewed, particularly the impact of administrative rules and regulations on a business. Global commerce and international agreements, treaties, organizations, and courts that can affect business will be discussed to get a better sense of what it means to "go global" with a business.

Consumer and environmental protections will be explained as well as bankruptcy options, should a business go insolvent. Lastly, no business exists without experiencing some kind of dispute or another, and so we will review the options that exist for dispute resolution and alternative dispute resolution to provide a better understanding of how best to deal with such matters.

### CONTEMPORARY NOVELS (.5 credit)

**Grades: 9-12**

For this course, students will read a set of novels and novellas that were written during the twentieth century and reflect themes common to contemporary literature, such as the ability of the human spirit to rise above seemingly-impossible circumstances. Through creative projects and writing assignments, students will identify and analyze each novel's themes and also compare and contrast the novels' treatment of common themes. Please note that, like most contemporary literature, the novels assigned for this course contain realistic situations and language. In addition to the novels

listed, each student will read another contemporary novel of his or her choosing that the instructor must approve. MLA (Modern Language Association) documentation is required on all papers submitted. The following novels are read during this course.

- Picture Bride By Yoshiko Uchida
- Night By Elie Weisel
- To Kill a Mockingbird By Harper Lee
- Fallen Angels By Walter Dean Myers
- The Old Man and The Sea By Ernest Hemingway
- Rita Hayworth and Shawshank Redemption By Stephen King

### CREATIVE WRITING (.5 credit)

**Grades: 9-12**

For many hundreds of years, literature has been one of the most important human art forms. It allows us to give voice to our emotions, create imaginary worlds, express ideas, and escape the confines of material reality. Through creative writing, we can come to understand ourselves and our world a little bit better. This course provides students with a solid grounding in the writing process, from finding inspiration to building a basic story to using complicated literary techniques and creating strange hybrid forms of poetic prose and prose poetry. By the end of this course, students will learn how to discover their creative thoughts and turn those ideas into fully realized pieces of creative writing.

### DIGITAL PHOTOGRAPHY (.5 credit)

**Grade: 9-12**

Have you ever wondered how photographers take such great pictures? Have you tried to take photographs and wondered why they didn't seem to capture that moment that you saw with your eyes? The Digital Photography I course focuses on the basics of photography, including building an understanding of aperture, shutter speed, lighting, and composition. Students will be introduced to the history of photography and basic camera functions. Students will use the basic techniques of composition and camera functions to build a portfolio of images, capturing people, landscapes, close-up, and action photographs.

**Required Materials:** digital camera of 2 megapixels or more with a minimum 3x zoom lens. Digital zooms are permitted but not recommended. Download free Gimp software. Various props for staging photographs. Student must have access to a computer in order to download the photo editing software.

### EARTH-SPACE SCIENCE (1 credit)

**Grade: 9-12**

Be captivated by the wonders and beauty of the third planet from our Sun, Earth. Be amazed by what awaits your discovery within our solar system and beyond. It is your turn to explore the universe. Earth/Space Science is a laboratory course focusing on the study of space, geologic structures and forces, the waters on our planet, and the atmospheric forces that shape our world. Through experimentation and investigation, students will explore the earth cycles including the geosphere, hydrosphere, cryosphere, atmosphere, and the carbon cycle. Students will learn about scientific inquiry, geologic time, space exploration, the solar system, and the universe. Students will use web 2.0 tools, interactive experiences, higher-order thinking, collaborative projects, and real-world application through labs and a variety of assessments. Upon completion of the course, students will have a clear understanding of the dynamic forces at work in the world around them, becoming better caretakers of our planet, Earth.

**Student Provided Lab Materials:** one sheet of plain white paper, several sheets of old newspaper, or wax paper if available, one water-based marker (Note: do not use permanent marker), one spray bottle containing water (place on

"mist" setting), digital camera, if available, chocolate chip cookie, toothpicks (flat and round), paperclips, graph paper, stopwatch, timer, or clock with second hand, ruler or meter stick, 4.6 meters of adding-machine tape, or strips of paper taped together to form a continuous line (4.6 meters long), colored pencils, crayons, or markers, digital camera to take and submit a photograph of your time scale (optional), 1 Styrofoam ball. Alternately, you may obtain a similar sphere, preferably white, such as a table-tennis ball, and attach this sphere to a short piece of string, 1 dowel rod, pencil, or other long holder for the Styrofoam ball. Optional: empty aluminum soda can, shallow pan (baking, or pie pan, or storage bowl will do), water, stove top burner, two oven mitts or hot pads, plastic bucket or bowl, toothbrush, measuring cup, 1 un-inflated balloon (when inflated, the balloon should have a round shape and be approximately the size of a soccer ball), About 30 cm (12 inches) of string or yarn, pan, raw egg, cracking device such as a teaspoon, paper towels or newspaper.

**ENGINEERING DESIGN (.5 credit)**

**Grade: 9-12**

Engineering and Design is part of the STEM (Science, Technology, Engineering, and Mathematics) education and career path. By building real-world problem-solving and critical thinking skills, students learn how to innovate and design new products and improve existing products. Students are introduced to the engineering design process to build new products and to the reverse engineering process, which enables engineers to adjust any existing product. Students will also address how fluid power is used by engineers to make difficult maneuvers easier, increasing efficiency and minimizing effects on the environment. Students then identify how engineering and design have a direct impact on the sustainability of our environment and the greening of our economy. Finally, students incorporate the engineering design process, environmental life cycle, and green engineering principles to create a decision matrix to learn how to solve environmental issues. **Prerequisite:** It is helpful if students are familiar with renewable and nonrenewable resources. Many of the principles discussed in this course can be better addressed through the use of broken machines, toys, and electronics. Collection of these materials prior to the course will greatly help the student in the course.

**ENGINEERING AND INNOVATION (.5 credit)**

**Grade: 9-12**

The Engineering and Innovation course will provide students with an understanding of the field of engineering and introduction to the concepts of invention and innovation, as well as some of the skills and tools necessary to invent and innovate. This information will provide students with the ability to invent and innovate in their field of choice.

Students will learn details about the scope and nature of the field of engineering. They will also learn about the history of invention and innovation and how those activities play a role in the advancement of human society. Students will be introduced to patents, regulations, and ethical and professional standards that apply in the fields of engineering and invention. Students will also learn about analytical modeling and problem solving, interpreting the results of models and experiments, and understanding how bias impacts outcomes. In addition, students will learn about innovations and inventions in the fields of biomedicine and the environment and how those fields have impacted the health and well-being of society. Lastly, students will learn about career choices and organizations and resources available for individuals who wish to incorporate invention and innovation into their careers and lives.

**Prerequisites:** For topics in this course, it is helpful for students to be familiar with general concepts of the world of business as well as the basics of conducting research on websites. If students are unfamiliar with these topics, it is recommended that they familiarize themselves with conducting online searches for business-related topics on the Internet by visiting sites such as Business.USA.gov or business magazine websites such as Forbes.com or BusinessWeek.com. These websites will provide an

introduction to what is currently happening in the business world as well as give students an opportunity to practice navigating websites.

**ESSENTIALS OF BUSINESS (.5 credit)**

**Grade: 9-12**

This semester-long course is an introduction to the goals, processes, and operations of business enterprises for students. The main focus is on the functions that a company – whether a multinational corporation or a corner grocery store – must manage effectively to be successful. These include accounting, finance, human resource management, marketing, operations management, and strategic planning. Attention is also given to the legal environment in which businesses operate, and the importance of business ethics and corporate citizenship.

**FINANCIAL LITERACY (.5 credit)**

**Grade: 9-12**

This course is designed to help students budget, keep a checkbook and filing system, deal with debt and credit, and become wiser consumers. Students will learn how money and the dynamics surrounding it affect their relationships, their lifestyles, and their retirement. Find and evaluate financial information from a variety of sources when making personal financial decisions. Introduction to Personal Finance topics:

- About Money—Principles One, Two, and Three
- About Money—Principles Four and Five
- Budgeting and Being Responsible With Your Checkbook and Paperwork
- Dealing With Credit/Debt
- Being a Wise Consumer
- Money, Family, and Friends
- Money and Lifestyle
- Money and Becoming an Adult: School, Marriage, Home Ownership, and Children
- Looking Toward the Future; Planning Ahead for Retirement

**FIRE AND EMERGENCY SERVICES (.5 credit)**

**Grade: 9-12**

Emergency and fire-management services are essential infrastructure components of a community. They provide a resource for dealing with numerous types of emergencies, including fires, motor vehicle, and industrial accidents, and medical emergencies. In addition, these services provide fire prevention and community-outreach programs.

This course provides students with the basic structure of these organizations as well as the rules and guidelines that govern pre-employment education requirements. The vehicles, equipment, and emergency-mitigations strategies that are commonly used in the emergency- and fire-management field are also explored. Students will understand the goals of an emergency-management service and how they are implemented and managed, including personnel, budget, and labor-management challenges in the organization. Finally, the course also provides students with an overview of large-scale emergency incidents that overwhelm local agencies. Various preparedness plans are discussed. In the end, students will have been exposed to the typical characteristics and framework of modern emergency- and fire-management organizations and will have a better understanding of a career in this field.

**FORENSICS: Using Science to Solve a Mystery (.5 credit)**

**Grade: 10-12**

This course is the overview of modern-day forensic science careers at work using science concepts to collect and analyze evidence and link evidence to the crime and suspects in order to present admissible evidence in courts of law. Modern-day forensic science practices have come into being thanks to the contribution of science and legal professions seeking ways to study crime scenes and criminal activities in an effort to stop crime. Of particular interest in this course are the various applications of medicine in the field of forensic science.

This course identifies science concepts and critical thinking in the area of forensic science. Following the presentation of the concepts, students are encouraged to conduct online research exploring examples and applying the concepts just learned. Links to case studies and interactive learning tools are supplied along with high-quality research sites. Projects are assigned throughout the course that allow students to actively apply the information just learned. These projects include simulated crime-scene investigation, actual DNA separation, development of a cyber-security plan, and the identification of specific forensic skills used during the course of a very large murder case.

The focus of this course is to assist students in making career choices. Secondary school students who complete this course will have gained an awareness of the diversity of careers available in the forensic field. In addition, attention is drawn to many similar careers in medicine and computer science. Included in this overview of careers is the consideration of job descriptions and availability, educational and training requirements, licensing and certification, and typical annual salaries. Students who take this class will become equipped to make more informed career choices in regards to the forensic and medical science fields. At the same time, students will survey the history and scope of present-day forensic science work.

**FOUNDATIONS OF PROGRAMMING (.5 credit)**

**Grade: 9-12**

Do you want to learn the skills required to be competitive in today's high tech workforce? Foundations of Programming (FoP) will teach students the fundamentals of programming using the computer language Python. The course provides students with the concepts, techniques, and processes associated with computer programming and software development. Students will also explore the many programming career opportunities available in this high-demand field.

**Required Materials:** A computer is required; tablets and Chromebooks can't be used for this course.

**HEALTH (.5 credit)**

**Grade: 9-12**

This Health course will help you develop the knowledge and skills you need to make healthy decisions that allow you to stay active, safe and informed. The lessons, discussions, research, and writing activities are designed to introduce students to important aspects of the main types of health: emotional and mental, social and consumer, and physical. Students will explore nutrition, understanding and avoiding disease, first aid and CPR, and human sexuality. You will find out about the components of a healthy lifestyle and ways to approach making healthy choices and decisions.

**NOTE:** This course does not fulfill NYSED CPR and Automated External Defibrillators instructional requirement. This requirement must be fulfilled by the student's individual school district.

**HISTORY OF THE HOLOCAUST (.5 credit)**

**Grade: 9-12**

Holocaust education requires a comprehensive study of not only times, dates, and places, but also the motivation and ideology that allowed these events. In this course, students will study the history of anti-Semitism; the rise of the Nazi party; and the Holocaust, from its beginnings through liberation and the aftermath of the tragedy. The study of the Holocaust is a multi-disciplinary one, integrating world history, geography, American history, and civics. Through this in-depth, semester-long study of the Holocaust, high school students will gain an understanding of the ramifications of prejudice and indifference, the potential for government-supported terror, and they will get glimpses of kindness and humanity in the worst of times.

**INTRODUCTION TO ANATOMY & PHYSIOLOGY (1 credit)**

**Grade: 11-12**

This elective course will provide students with the fundamental concepts in human anatomy and physiology. Students can prepare for higher education, further their studies in a biological interest, and have a foundation for a health-related profession. The course content will include basic structure and function of eleven body systems as well as units on the blood, growth and development, and nutrition and metabolism. Students will master the systems of the human body, structural names and locations, and physiological contributions of these structures through activities, discussions, research, and writing assignments. This course is recommended for mature high school juniors and seniors who are highly self-motivated. The ability to memorize medical terms is essential in this course.

**Textbook Provided:** *Structure Function of the Human Body*

**INTRODUCTION TO CAREERS IN FINANCE (.5 credit)**

**Grade: 9-12**

Introduction to Careers in Finance course provides the fundamentals of the financial services industry in the United States and explores the jobs and career opportunities that the industry offers.

Unit 1: Finance Overview and Financial Services: Unit 1 introduces the financial services industry and the financial systems that operate in the US and internationally.

Unit 2: Securities Analysis and Investments: Unit 2 examines securities markets and investment companies, looks at how companies evaluate and mitigate risk, and discusses the valuation of stocks and bonds.

Unit 3: Principles of Corporate Finance: Unit 3 discusses the roles and responsibilities of corporate finance and accounting, analysis of financial statements, capital budgeting, and capital structure.

Unit 4: Banking Services: Unit 4 focuses on banking services, including how the industry is organized and regulated and how risks are managed.

Unit 5: Risk Management and Insurance: Unit 5 looks at the insurance industry, including how it is organized and regulated, how it addresses risks, and the career opportunities it offers.

**INTRODUCTION TO COMPUTER SCIENCE (1 credit)**

**Grade: 9-12**

An interactive introductory course for students brand new to programming that teaches the foundations of computer science using the Python language. This year-long course will prepare students for AP Computer Science A as well as teach students how to think computationally and solve complex problems, which are skills that are important for every student.

**INTRODUCTION TO CAREERS IN MARKETING (.5 credit)**

**Grade: 9-12**

After completing this course, students will have a fundamental understanding of the principles of marketing. They will be able to explain the marketing process, marketing strategic planning, the marketing environment, and the trends, opportunities, and challenges in the marketing world today.

**Overview of Marketing:** Students will explore the role of marketing in an organization and evaluate the ways in which marketing creates value for a product or service. They will be able to evaluate how marketers understand and segment their markets, identify the steps of the marketing research process, and describe various data collection techniques.

**Marketing Strategic Planning:** This unit focuses on the importance of strategic planning and the five steps of the strategic planning process.

**The Marketing Environment and Consumer Behavior:** This unit focuses on the marketing microenvironment and macroenvironment, as well as why consumers behave the way they do.

**The Marketing Mix:** This unit focuses on the Four P's of the marketing mix: product, price, place, and promotion.

**Marketing Today:** This unit focuses on how technology has impacted every area of marketing, and the world of global marketing.

**INTRODUCTION TO NEUROSCIENCE (.5 credit)**

**Grade: 10-12**

Have you ever wondered what happens when you think about things? This course is an online, introductory, half year course in neuroscience that covers topics in: the structure and chemistry of the brain; how our senses work and how our brain directs our movements; how the brain influences behavior and how behavior influences the brain; and lastly, the ever changing, growing and healing brain. This course is designed to be foundational for students interested in biology, neuroscience, biochemistry, psychology, psychiatry, social work and/or counseling.

**Textbook Provided:** *Neuroscience, Exploring the Brain, 3rd Edition, Mark F. Bear, Barry W. Connors, Michael A. Paradiso; Lippincott Williams & Wilkins, 2007. Individual school districts purchase textbook.*

**Pre-requisite:** Successful completion of Biology

**INTRODUCTION TO OFFICE APPLICATIONS I (.5 credit)**

**Grade: 9-12**

Office Applications I is a semester-length, high school elective that explores the use of application skills in Microsoft® Word®, Publisher®, and PowerPoint®. Students will use these applications to design, develop, create, edit, and share business documents, publications, and presentations. This course provides key knowledge and skills in the following Microsoft Office® applications: Microsoft Word, Publisher, and PowerPoint.

**Required Materials:** A computer with 2013 Microsoft Word, Publisher and PowerPoint is required.

**INTRODUCTION TO OFFICE APPLICATIONS II (.5 credit)**

**Grade: 9-12**

Office Applications II is a semester-length, high school elective course that explores the use of application skills in Microsoft® Excel® and Microsoft® Access®. Students will use these applications to design, develop, create, edit, and share business spreadsheet and database documents. This course provides key knowledge and skills in the following areas: Microsoft Excel and Access. **Required Materials:** A computer with 2013 Microsoft Excel and Access is required.

**INTRODUCTION TO HOSPITALITY AND TOURISM SYSTEMS (.5 credit)**

**Grade: 9-12**

Travel and tourism is now the largest industry in the world: In the United States alone, over 7.5 million people work in this industry, and in 2010, 60 million international visitors came to the United States, spending \$134 billion. All of the sectors of the travel and tourism industry work together to serve this growing market of visitors, who have a significant impact on the U.S. economy. This course establishes a foundation for the concept of tourism, travel, and hospitality as a system. Students will learn about the various segments of the travel and tourism industry and how they are interrelated and integral to international and domestic travel and tourism. This discussion will include travel agencies, tour companies, the airlines and other transportation sectors, lodging facilities, cruise lines, and marketing companies.

**JAVASCRIPT (.5 credit)**

**Grade: 9-12**

In this course, students will learn how to start programming with JavaScript. Students will learn the basics of JavaScript including testing, functions, objects, arrays, loops, conditional code, operators and syntax basics. Students will learn timing and animations, and how to debug. The class will conclude with a robust project that incorporates everything they learned in the semester.

**Pre-requisite:** Students must take Web Design before taking this course.

**JOURNALISM (.5 credit)**

**Grade: 11-12**

Understanding the role of the free press in America helps us to be better informed and more able to analyze media. In this course, you will explore the history of journalism in the United States from its inception in the colonies and its key role in the first amendment, all the way up to present day issues regarding "right to know" and the changing landscape of journalistic media in the 21st century. You will acquire the skills and information needed to actively participate in the consumption, analysis, and creation of news media and will have the opportunity to investigate the constantly evolving career opportunities within the field of journalism.

**KEYBOARDING AND APPLICATIONS (.5 credit)**

**Grade: 9-12**

Keyboarding and Applications is a semester-long elective that teaches students keyboarding skills, technical skills, effective communication skills, and productive work habits. In this course, students will learn about proper keyboarding technique. Once students have been introduced to keyboarding skill, lessons will include daily practice of those skills. Students will gain an understanding of computer hardware, operating systems, file management, and the Internet. In addition, they will apply their keyboarding skills and create a variety of business documents, including word processing documents and electronic presentations. **Required Materials:** Windows operating system, word processing software, and electronic presentation software.

**MARINE SCIENCE (1 credit)**

**Grade: 9-12**

As our amazing planet continues to change over time, it becomes increasingly more apparent how human activity has made environmental impacts. In the marine science course, you will delve deep into Earth's bodies of water and study geologic structures and how they impact the oceans. You will investigate characteristics of various populations, patterns of distribution of life in our aquatic systems and ongoing changes occurring every day in our precious ecosystems. You will be amazed and enlightened at just how much our oceans and lakes affect climate, weather, and seasonal variations. You will have the opportunity to explore the relationships among living organisms and see how they are affected by our oceans currents, tides, and waves. Hold on, it is one amazing journey.

**Student Provided Lab Materials:** camera, access to a body of water, two baby food jars (minimum), food coloring (four colors), index cards, hot/cold water, salt, spoon, shrimp, lobster, or crab (living or dead), pan or bucket to put animal in, ruler, four zip lock bags (large enough for hand), solid shortening (Crisco or other brand), clock with second hand or stopwatch, duct tape (optional), one oyster with shell, one squid (whole), a pan to put the specimen in, a knife, preferably with a smooth, sharp blade, flathead screwdriver (to open the valves), round toothpick (to use as a probe). Please note that dissection of living animals is optional. Students have a "drawing" option for these particular assignments and extra credit activities.

**MARKETING & SALES FOR TOURISM AND HOSPITALITY (.5 credit)**

**Grade: 9-12**

This course is designed as an introduction to the study of tourism and hospitality marketing and sales. Students will be introduced to marketing theory and application of the basic principles of marketing as applied in hospitality and tourism. The relationship between marketing and other functions such as advertising, sales techniques, and public relations in order to maximize profits in a hospitality organization is addressed. Students will have an opportunity to explore this multi-faceted world, identifying multiple career paths and opportunities.

**Pre-requisite:** Students must have taken Introductory to Hospitality and Tourism Systems prior to this course.

**MEDICAL TERMINOLOGY: A Short Course (.5 credit)**

**Grade: 10-12**

Would you like to speak the same language as the medical professionals? This is a course for students who are pursuing a medical career where they will learn the foundation of medical terms in the field. Students will master the basics of medical terminology and begin speaking and writing medical terms. Students will build a working medical vocabulary of the most frequently encountered suffixes, prefixes, and word roots in context to the human anatomy and physiology.

**MEDIEVAL HISTORY (.5 credit)**

**Grade: 10-12**

Medieval History covers the history and civilization of Europe and the Mediterranean area from ca. 500 to ca. 1500, a period spanning from the collapse of the Roman Empire through the dawn of the Italian Renaissance. Topics covered in this course include the transition from the Roman to the early medieval world; the formation of Byzantine and Islamic societies; the emergence of Barbarian kingdoms; Viking invasions; feudalism; European expansion; late-medieval government; the disasters of the late Middle Ages; religious thought and practice; women's roles in medieval society; the highlights of medieval and Renaissance culture; and the legacy of the Middle Ages.

**Pre-requisite:** Students should either have completed or be enrolled in Global Studies.

**MUSIC APPRECIATION (.5 credit)**

**Grade: 9-12**

This one semester course introduces students to the elements, instrumentation, and historical periods of music. Students will learn the significance of surroundings and time periods and how they both influenced the music of the day. Students will listen to and evaluate several types of music, and will be assessed through projects, presentations, and exams on the knowledge and understanding of music.

**MUSIC THEORY (.5 credit)**

**Grade: 9-12**

The course requires no prior instrumental, vocal, or music theory study. Using the piano keyboard as a visual basis for comprehension, the course materials explore the nature of music, integrating these concepts:

- rhythm and meter
- written music notation
- the structure of various scale types
- interval qualities
- melody and harmony
- the building of chords
- transposition

Throughout the series of assignments, ear training exercises are interspersed with the bones of composition technique, building in students the ability not only to hear and appreciate music, but step-by-step, to create it in written form as well. This highly interactive course culminates in the students producing original compositions, which while based on standard notation, demonstrate facets of personal expression. As the students' ability to perform increases in the future, they will better understand music and therefore better demonstrate its intrinsic communication of emotion and ideas.

**PALEONTOLOGY (.5 credit)**

**Grade: 9-12**

From Godzilla to Jurassic Park, dinosaurs continue to captivate us. In this course, students will learn about the fascinating creatures both large and small that roamed the earth before modern man. Watch interesting videos from experts at The Royal Tyrrell Museum, a leading paleontology research facility, and discover how the field of paleontology continues to provide amazing insight into early life on earth.

**PRINCIPLES OF BUSINESS AND FINANCE (.5 credit)**

**Grade: 9-12**

This course will introduce students to the fundamental structure of the American economy, the complexities of the global economy, and the principles, practices, and strategies associated with starting, managing, or simply working for a business. Through a combination of lessons and projects, students will trace a trajectory of their potential role in the American economy as consumers, laborers, and executives. With lessons on everything from marketing to writing formal business correspondence, from the basic structures and legal definitions of business to the operations and importance of financial institutions, students will emerge from this course with a thorough introductory understanding of the business world. Students will perform research, conduct interviews, and write papers on various topics designed to enrich their understanding of the American business environment. They will also navigate an interactive and creative project that spans the length of the course and asks students to engage their learning, imaginations and individual career motivation with the course material.

**PROGRAMMING WITH ALICE (.5 credit)**

**Grade: 9-12**

Alice is an innovative 3D programming environment that makes it easy to create an animation for telling a story, playing an interactive game, or a video to share on the web. Alice is a free software tool designed to be your first exposure to object-oriented programming. It allows you to learn fundamental programming concepts in the context of creating animated movies and simple video games. In Alice, 3-D objects (e.g., people, animals, and vehicles) populate a virtual world and you create a program to animate the objects. Alice is developed and supported at Carnegie-Mellon University with financial support from Oracle, Electronic Arts, Sun Microsystems, DARPA, Intel, Microsoft, NSF and ONR. The director of the project is Wanda Dann.

**PROGRAMMING WITH SCRATCH (.5 credit)**

**Grade: 9-12**

Learn to program with the visual computer programming language Scratch. Scratch was developed at MIT's Lifelong Kindergarten Group. It allows users to explore basic programming concepts while creating multimedia programs, games and simulations. This course will help users to learn basic programming concepts and problem solving skills and take a deeper dive into more complex concepts including variables, loops, string processing and lists.

**Requirement:** *Students under age 13 require parental/guardian permission and email address. A computer is required; tablets and Chromebooks can't be used. Students must be able to download files to be used with the web-based programming in Scratch.*

**PSYCHOLOGY (.5 credit)**

**Grade: 10-12**

What do you feel? How do you behave? What are your thoughts? Feelings, actions and thoughts are closely related and in this Psychology course, you will see how! Do you wonder things like why you learn the way you do, how you forget, and what makes you remember? Are you curious about mental disorders and what traditional and non-traditional therapy is all about? If experiments and role plays and dream interpretations sound interesting, then this is the class for you! In this course you will learn more about yourself and others including how to break a habit and how to cope with stress. The purpose of this course is to introduce you to the psychological facts, principles, and phenomena associated with each of the subfields within psychology.

**PUBLIC HEALTH: THE BIG PICTURE IN HEALTH CARE (.5 credit)**

**Grade: 9-12**

In this course, we discuss the multiple definitions of public health and the ways that these definitions are put into practice. We explore the five core disciplines and the ways that they interact to reduce disease, injury and death in populations. By understanding the roles of public health, we are able to gain a greater appreciation for its importance and the various occupations that one could pursue within the field of public health. Unit 1 introduces the definition of public health and provides a description that allows you to differentiate public health from other health care fields. The five core disciplines and the interactions between local, state, and federal organizations are also discussed. The history of public health concludes the introductory unit. Unit 2 focuses on specific information regarding the core disciplines of behavioral science and emergency preparedness and response. Unit 3 takes a detailed look at epidemiology and biostatistics. Unit 4 relates to environmental and occupational health issues. Finally, Unit 5 describes global health and the future of public health.

Because of public health's broad and multi-faceted nature, it is important to understand the details and the overall interactions and importance that make the field essential to modern society. There are many disciplines that work together on different levels within public health. Each public health worker contributes to the overall function of the field itself. By entering the field of

public health, you will play an integral part in improving the health and lives of a large number of people. The contributions of public health to society have shaped our modern world and will continue to do so in the future.

**RENEWABLE ENERGY (.5 credit)**

**Grade: 9-12**

The earth's population is growing rapidly, and we need to find new, innovative ways to ensure that we are able to provide for our global energy needs. Students will look at the reasons why sustainability is important, take a balanced and evidence-based look at climate change, and learn new ways that we can harness renewable resources.

**SOCIOLOGY (.5 credit)**

**Grade: 9-12**

Providing insight into the human dynamics of our diverse society, this is an engaging two-semester course that delves into the fundamental concepts of sociology. This interactive course, designed for high school students, covers cultural diversity and conformity, basic structures of society, individuals and socialization, stages of human development as they relate to sociology, deviance from social norms, social stratification, racial and ethnic interactions, gender roles, family structure, the economic and political aspects of sociology, the sociology of public institutions, and collective human behavior, both historically and in modern times.

**SPACE EXPLORATION (.5 credit)**

**Grade: 9-12**

In 1961, Yuri Gagarin became the first human to go to space. In 1969, Neil Armstrong became the first human to step on the moon. This comprehensive course will examine the history and future of space travel. Find out how we have put people in space in the past, and what it will take for us to reach new frontiers, including Mars and beyond.

**SPECIAL EVENTS AND MEETING PLANNER (.5 credit)**

**Grade: 9-12**

Welcome to Planning Meetings and Special Events. Being a meetings and special events planner is an important job that's both demanding and rewarding. The Bureau of Labor Statistics projects this profession will grow by 43.7 percent between 2010 and 2020. It's not all fun and parties, though. In 2012, CareerCast ranked being an event planner as the sixth most stressful job, with soldiers and firefighters holding the top two positions. That's because a meeting coordinator is responsible for every detail of an event. Planners have to know how to communicate, be empathetic, and think of their clients. It's crucial to remember that in some instances the event will be a once-in-a-lifetime occasion, so it's important to get it right. Being a meetings and events planner can be an interesting career, one that you can be sure won't ever be boring.

**VIETNAM ERA (.5 credit)**

**Grade: 10-12**

What comes to mind when you think about the Vietnam Era? For many, that period represents a difficult time in U.S. history. It is defined by an unpopular war that claimed the lives of 58,000 Americans and some 3 million Vietnamese. In this course, you'll look at the history of the Vietnam War. The roots of the conflict stretch further back than you might know. You'll examine why the United States got involved in the conflict and why the United States failed to achieve its objectives.

**WEB DESIGN (.5 credit)**

**Grade: 9-12**

In this course, students will learn how to design a beautiful and functional website. Students will learn how to take their design and translate it into a live website using Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS) programming languages. HTML5 and CSS3 will be the standard versions used in the class. Students will understand design components of websites, including the use of color, layout and when to use different techniques, typography rules, and the importance of imagery. At the conclusion of the course, students will present a website to the class. Upon completion of this course, each student will have hands-on experience creating a fully functioning website.

**Requirements:** Student will be required to create a free account with Neocities.org and use it throughout this course.

**AP COURSES**

**AP ART HISTORY (1 credit)**

**Grade: 12**

The AP Art History course is a yearlong survey of art and architecture across centuries, cultures, and styles. In this course students will cover art and architecture created from the Ancient World to the 20th Century and beyond. They will develop an appreciation and understanding of art and architecture using these seven key concepts: Identification and Attribution, Visual Analysis, Contextual Analysis, Finding Meaning, Interdisciplinary Awareness, Reading Skills, and Writing Skills. By using these concepts, students will be able to identify works of art, artists, and styles.

**AP Exam:** Exam fees are to be paid by the student. The individual school district orders the exam on behalf of the student.

**AP CALCULUS AB (1 credit)**

**Grade: 12**

Students in this course will walk in the footsteps of Newton and Leibnitz. An interactive course framework combines with the exciting on-line course delivery to make calculus an adventure. The course includes a study of limits, continuity, differentiation, and integration of algebraic, trigonometric, and transcendental functions, and the applications of derivatives and integrals.

**AP Exam:** Exam fees are to be paid by the student. The individual school district orders the exam on behalf of the student.

**Required Materials:** Graphing calculator

**Pre-requisites:** Algebra I, Geometry, Algebra II, Pre-Calculus or Trigonometry/Analytical Geometry

**AP CALCULUS BC (1 credit)**

**Grade: 12**

Calculus BC can be offered by schools where students are able to complete all the Pre-requisites before taking the course. Calculus BC is a full-year course in the calculus of functions of a single variable. It includes all topics taught in Calculus AB plus additional topics, but both courses are intended to be challenging and demanding; they require a similar depth of understanding of common topics. The Calculus AB subscore is reported based on performance on the portion of the Calculus BC Exam devoted to Calculus AB topics. Pre-requisites before studying calculus, all students should complete four years of secondary mathematics designed for college-bound students: courses in which they study algebra, geometry, trigonometry, analytic geometry, and elementary functions. These functions include linear, polynomial, rational, exponential, logarithmic, trigonometric, inverse trigonometric and piecewise-defined functions. In particular, before studying calculus, students must be familiar with the properties of functions, the algebra of functions, and the graphs of functions. Students must also

understand the language of functions (domain and range, odd and even, periodic, symmetry, zeros, intercepts, and so on) and know the values of the trigonometric functions at the numbers 0,  $\frac{\pi}{6}$ ,  $\frac{\pi}{4}$ ,  $\frac{\pi}{3}$ ,  $\frac{\pi}{2}$ , and their multiples.

**AP Exam:** Exam fees are to be paid by the student. The individual school district orders the exam on behalf of the student.

**Required Materials:** Graphing calculator

**Pre-Requisites:** Algebra I, Geometry, Algebra II, Pre-Calculus or Trigonometry/Analytical Geometry.

**AP COMPUTER SCIENCE A (1 credit)**

**Grade: 11-12**

The AP® Computer Science A course is equivalent to the first semester of a college level computer science course. The course involves developing the skills to write programs or part of programs to correctly solve specific problems. AP® Computer Science A also emphasizes the design issues that make programs understandable, adaptable, and when appropriate, reusable. At the same time, the development of useful computer programs and classes is used as a context for introducing other important concepts in computer science, including the development and analysis of algorithms, the development and use of fundamental data structures, and the study of standard algorithms and typical applications. In addition an understanding of the basic hardware and software components of computer systems and the responsible use of these systems are integral parts of the course.

**Technology Requirements:** Students must have access to a computer system that represents relatively recent technology (PIII). Schools need to have Java and Bluj software already installed on a designated machine(s) before the course starts and enough memory in their lab machines (128 MB) so that students will be able to compile and run Java and Bluj programs efficiently.

**AP Exam:** Exam fees are to be paid by the student. The individual school district orders the exam on behalf of the student.

**Pre-requisites:** Algebra I is required. Algebra II is highly recommended.

Prior coding experience is highly recommended. An online preparation course is highly recommended and that is Introduction to Computer Science.

**AP ENGLISH LANGUAGE AND COMPOSITION (1 credit)**

**GRADE: 11-12**

An AP course in English Language and Composition engages students in becoming skilled readers of prose written in a variety of periods, disciplines, and rhetorical contexts and in becoming skilled writers who compose for a variety of purposes. Both their writing and their reading should make students aware of the interactions among a writer's purposes, audience expectations, and subjects as well as the way generic conventions and the resources of language contribute to effectiveness in writing. The college composition course for which the AP English Language and Composition course substitutes is one of the most varied in the curriculum.

**AP Exam:** Exam fees are to be paid by the student. The individual school district orders the exam on behalf of the student.

**Pre-Requisites:** Teacher recommendation, English I, II (honors), with a B+ average

**AP ENGLISH LITERATURE AND COMPOSITION (1 credit)**

**Grade: 12**

Engages students in the careful reading and critical analysis of imaginative literature. Through the close reading of selected texts, students deepen their understanding of the ways writers use language to provide both meaning and pleasure for their readers. As they read, students consider a work's structure, style and themes, as well as such smaller-scale elements as the use of figurative language, imagery, symbolism and tone.

**AP Exam:** Exam fees are to be paid by the student. The individual school district orders the exam on behalf of the student.

**Textbook Requirement:** Students obtain reading material through school and local library

**Pre-requisite:** Junior English

**AP MACROECONOMICS (1 credit)**

**GRADE: 11-12**

This course places particular emphasis on the study of national income and price-level determination, and also familiarizes students with economic performance measures, the financial sector, stabilization policies, economic growth and international economics. Solid math and writing skills, along with a willingness to devote considerable time to homework and study, are necessary to succeed. Emphasis is placed on critical and evaluative thinking skills.

**AP MICROECONOMICS (1 credit)**

**GRADE: 11-12**

This course is designed to give students a thorough understanding of the principles of economics that apply to the function of individual decision-makers, both consumers and producers, within larger economic systems. It places primary emphasis on the nature and function of product markets. It also examines factor markets and the role of government in promoting greater efficiency and equity in the economy. Solid math and writing skills, along with a willingness to devote considerable time to homework and study, are necessary to succeed. Emphasis is placed on critical and evaluative thinking skills.

**AP MUSIC THEORY (1 credit)**

**Grade: 11-12**

The Music Theory course is the study of melody, harmony, texture, rhythm, form, musical analysis, elementary composition and, to some extent, history and style. Skills in musical dictation and listening, sight-singing, and basic keyboard harmony are an important part of the AP theory course.

**Requirement:** Students are required to meet weekly with the instructor via telephone or video conference as part of their required course participation.

**AP Exam:** Exam fees are to be paid by the student. The individual school district orders the exam on behalf of the student.

**Required Software and Technology:** Student must use Audacity (free download) and recording device (such as a microphone).

**AP PSYCHOLOGY (.1 credit)**

**Grade: 11-12**

AP Psychology is a college-level course providing students with an overview of the development of human behaviors and thoughts. Along with preparation for the AP Psychology exam, the goals of this course are to immerse students in modern psychological investigation techniques, to accentuate the ethics and morality of human and animal research, and to emphasize scientific critical thinking skills in application to the social sciences.

Psychology is a diverse social and biological science with multiple perspectives and interpretations. The primary emphasis of this course is to help students develop an understanding of concepts rather than memorize terms and technical details; the ultimate goal is to prepare students to successfully take the AP Psychology examination offered in May.

**AP Exam:** Exam fees are to be paid by the student. The individual school district orders the exam on behalf of the student.

**AP STATISTICS (1 credit)**

**Grade: 12**

Advanced Placement Statistics is designed to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Topics introduced include the exploratory analysis of data and numerical techniques to study patterns, methods of valid data collection, probability as the tool for anticipating what distributions of data should look like, and confirming models through statistical inference.

**AP Exam:** Exam fees are to be paid by the student. The individual school district orders the exam on behalf of the student.

**Pre-requisites:** Algebra I & II

**AP US GOVERNMENT & POLITICS (1 credit)**

**Grade: 12**

This course includes both the study of general concepts used to interpret U.S. government and politics and the analysis of specific examples. It also requires familiarity with the various institutions, groups, beliefs, and ideas that constitute U.S. government and politics.

**AP Exam:** Exam fees are to be paid by the student. The individual school district orders the exam on behalf of the student.

**AP US HISTORY (1 credit)**

**Grade: 11-12**

The AP U.S. History course focuses on the development of historical thinking skills (chronological reasoning, comparing and contextualizing, crafting historical arguments using historical evidence, and interpreting and synthesizing historical narrative) and an understanding of content learning objectives organized around seven themes, such as identity, peopling, and America in the world. In line with college and university U.S. history survey courses' increased focus on early and recent American history and decreased emphasis on other areas, the AP U.S. History course expands on the history of the Americas from 1491 to 1607 and from 1980 to the present. It also allows teachers flexibility across nine different periods of U.S. history to teach topics of their choice in depth.

**AP Exam:** Exam fees are to be paid by the student. The individual school district orders the exam on behalf of the student.

**AP WORLD HISTORY (1 credit)**

**Grade: 10-12**

Structured around the investigation of five course themes and 19 key concepts in six different chronological periods, from approximately 8000 B.C.E. to the present. Provides a clear framework of six chronological periods viewed through the lens of related key concepts and course themes, accompanied by a set of skills that clearly define what it means to think historically.

**AP Exam:** Exam fees are to be paid by the student. The individual school district orders the exam on behalf of the student.

**MATH**

**CONSUMER MATH (1 credit)**

**Grade: 9-12**

This comprehensive review and study of arithmetic skills apply to both personal and vocational business opportunities. Topics include whole numbers, fractions, percentages, basic statistics, and graphs. Practical applications in finance, taxes, budgeting, banking and home ownership are provided.

## SOCIAL STUDIES

### CIVICS / GOVERNMENT (.5 credit)

#### Grade: 12

Responsible citizenship, including civil and political participation is essential to maintain a representative government that truly represents the people of the United States. In this course, students learn about the structure of government and how it shares power at the local, state and federal levels. This course also explores founding principles that inspired the Constitution and Bill of Rights, preserving the freedoms that students experience daily. Students will examine the processes of each branch of government, the election process, and how citizens can impact public policy. The media, interest groups and influential citizens provide examples of how the government can be effected by informed and active participants. Students will examine the U.S. Court system, and become a part of the process by participating in the judicial decision making process. They will also discover ways the United States interacts with countries around the world, through domestic policy, foreign policy and human rights policy. Completion of this course will allow you to act as an informed citizen who is ready to participate in the American democracy!

### ECONOMICS (.5 credit)

#### Grade: 12

Economic decisions affect us every day of our lives. Understanding economics means thinking about how scarcity, or limited resources, requires us to make choices and evaluate one option against others. In this course, you will recognize examples of economics in your daily life. You will see how the economic choices of larger groups, like businesses and governments, affect you and others. As you progress through the course, you will recognize that the costs and benefits of choices connect individuals and groups around the world. The purpose of this course is to help you become a smart consumer who understands the flow of an economy between individuals, businesses, governments, and the rest of the world.

## WORLD LANGUAGES

### FRENCH I (1 credit)

#### Grade: 8-12

A multi-media, game-based approach makes this introductory French course different from traditional approaches to language learning. Advanced teaching techniques are used to turn compelling adventures and activities into rigorous lessons in grammar and vocabulary. This course provides a solid foundation for reading, speaking, writing, and understanding French and cultivates a passion for the language through exposure to culture and dynamic experiences of real people and real places. This course also features adaptive learning technology that lets students select the learning style that's right for them.

**Requirement:** Student will need microphone and recording device capabilities on computer. Webcam is optional.

### FRENCH II (1 credit)

#### Grade: 9-12

Students with a beginning foundation in French will see their skills soar through compelling lessons that give them access to content so interesting that they forget that they are learning French. This unique learning methodology, which relies heavily on games and stories, works effectively to take students from a tentative understanding of French basics to a greater level of sophistication. This course concentrates on students' ability to articulate more and more complex thoughts and to understand authentic native language from a variety of enticing sources.

**Requirement:** Student will need microphone and recording device capabilities on computer. Webcam is optional.

### LATIN I (1 credit)

#### Grade: 9-12

There is a reason "all roads lead to Rome." Maybe it is because Romans built much of the ancient world's highway system. Maybe it is also because the Roman culture and Latin language laid the foundation for much of Western culture. In this course, students find out for themselves as they take their first steps on a lifelong journey of discovery. Students improve their command of the English language by studying Latin. Students also gain a better understanding of today's laws and culture by getting into the Roman mind. Latin I is the most comprehensive way to begin. The purpose of this course is to give students a foundation in Latin grammar and vocabulary. This course also acquaints students with Olympic gods and with the everyday life of the typical Roman. The course sets the students' feet on a journey as big as their imagination, with a passport to some of the world's most exciting places.

**Requirement:** Student will need microphone and recording device capabilities on computer. Webcam is optional.

### LATIN II (1 credit)

#### Grade: 9-12

A story of epic proportions. History-changing battles, great poets and statesmen, classic art and architecture, and a language that was heard throughout most of the known world. In Latin I, you read the opening credits of this epic movie. In Latin II, the plots and the characters that populated ancient Rome will come alive. In this course, you'll build on your knowledge of Latin grammar and vocabulary. In the process, you'll sense the beauty of the language and the passion of those who spoke it. Roman engineering, art, commerce and system of laws were all supported by a clear, expressive and flexible language - a language in which you will be able to communicate. This course will give you a solid grounding in the structure of the language. It will also give you a clear lens for looking into the heart and majesty of the Roman spirit.

**Prerequisite:** Latin I

**Requirement:** Student will need microphone and recording device capabilities on computer. Webcam is optional.

### LATIN III (1 credit)

#### Grade: 9-12

In Latin III, students take their knowledge and appreciation of Latin to the next level. Students read some of the best Latin prose and poetry ever written or spoken. Caesar tells how he conquered the three parts of Gaul. Cicero reminds Romans of the virtues that made their country great. Catullus shows how he could express the deepest human emotions in just a few, well-chosen words.

In Latin III, students visit the library of great authors. The library card gives them access to the timeless words of the greatest Roman poets, storytellers, and orators. Students' skills with the Latin language give them direct access to the beauty and power of these great authors' thoughts.

The purpose of this course is to strengthen students' Latin vocabulary as well as their appreciation for well-crafted writing. Students go directly to the source and recognize why Latin and those who spoke it are still relevant today.

**SPANISH I (1 credit)****Grade: 8-12**

A multi-media, game-based approach makes this introductory Spanish course different from traditional approaches to language learning. Advanced teaching techniques are used to turn compelling adventures and activities into rigorous lessons in grammar and vocabulary. This course provides a solid foundation for reading, speaking, writing, and understanding Spanish and cultivates a passion for the language through exposure to culture and dynamic experiences of real people and real places. This course also features cutting-edge adaptive learning technology that lets students select the learning style that's right for them.

**Requirement:** *Student will need microphone and recording device capabilities on computer. Webcam is optional.*

**SPANISH II (1 credit)****Grade: 9-12**

Students with a beginning foundation in Spanish will see their skills soar through compelling lessons that give them access to content so interesting that they forget that they are learning Spanish. This unique learning methodology relies heavily on games and stories, works effectively to take students from a tentative understanding of Spanish basics to a greater level of sophistication. This course concentrates on students' ability to articulate more and more complex thoughts and to understand authentic native language from a variety of enticing sources.

**Prerequisite:** *Latin I*

**Requirement:** *Student will need microphone and recording device capabilities on computer. Webcam is optional.*

**SPANISH III (1 credit)****Grade: 10-12**

In Spanish III, students will meet and virtually accompany four teens with Hispanic backgrounds as they learn about and travel to several Spanish-speaking countries. Students have many opportunities to use the Spanish they already know as well as to expand their vocabulary, knowledge of grammar, and experiences with Spanish-speaking countries. The purpose of this course is to provide many experiences where students can use Spanish. Completely immersed in Spanish, students speak, listen, read, write, and collaborate with other students in Spanish within this course. They also gain knowledge and perspectives about Spanish-speaking countries and from Spanish-speaking people.

**Prerequisite:** *Latin I*

**Requirement:** *Student will need microphone and recording device capabilities on computer. Webcam is optional.*