

Courses to Add to 2019-2020 Course Description Guide:

General Electives:

Innovation and Entrepreneurship:

This course discusses the basics every student needs to organize successful, technology-driven innovation in both entrepreneurial and established organizations. It begins by examining innovation-based strategies as a source of competitive advantage and then examines how to build organizations that excel at identifying, building, and commercializing technological innovations. Major topics include: how the innovation process works; creating an organizational environment that rewards innovation and intrapreneurship; designing appropriate innovation processes; organizing to take advantage of internal and external sources of innovation; and structuring entrepreneurial and established organizations for effective innovations that consider environmental, social, and economic impacts. This course promotes leadership skills with a project-based and collaborative approach to real-world, 21st century challenges. Students in this course will participate in dynamic and competitive activities that emphasize critical and creative thinking. It also introduces students to new trends prevalent in the business and technology sectors.

Yearbook:

In this course students will gain skills in one or more of the following areas: page design, advanced publishing techniques, copy writing, editing and photography while producing a creative, innovative yearbook which records school memories and events. There is an emphasis on journalism skills in this class in addition to social media. Participants gain useful, real world skills in time management, marketing, communication, writing, teamwork, and design principles.

Research and Design:

During this course, students will acquire and use knowledge to solve technological problems using the engineering design process. Learners will be given the choice to select a challenge to collaborate on and work through with peers who have similar interests. A large portion of this course will allow students to focus on the school's Career and Technical Student Organization (CTSO) activities including but not limited to: SkillsUSA, Health Occupation Student Association (HOSA), Science Club, Robotics, and Research and Design. This course will prepare students to become technological thinkers and innovators through practical applications of math, science, and technology.

Financial Literacy:

This course is required for graduation and will emphasize finance, economics, business, and entrepreneurial literacy as it applies to everyday life situations. Personal decision-making regarding budgeting, career choices, investments, loans, and insurance will be covered. An additional focus of this course will be dedicated to preparing students for the post-secondary world in which they will build appropriate interview skills and create proper resumes. Students will also explore various career options as they relate to finances, educational training, and preparedness.

Math:

Modern Math:

This course will focus exclusively on the use of mathematics to solve real-world problems. It will take on a project-based type of structure in which students will research problems and present solutions utilizing mathematical concepts. Various topics will be integrated into the projects including: statistics and probability, coding, finances, and career-specific math. Targeted focus will also be placed on the mathematical practice standards including: making sense of problems and persevering in solving them, reasoning abstractly and quantitatively, constructing viable arguments and critiquing the reasoning of others, modeling with mathematics, using appropriate tools strategically, attending to precision, looking for and making use of structure, and looking for and expressing regularity in repeated reasoning. Additional emphasis will be placed on collaboration skills, subject-specific discourse, group communication, creativity, analytical thinking, and mathematical application.

Calculus:

This course is intended for those students who have successfully completed Pre-Calculus. A thorough knowledge of algebra, geometry, and trigonometry is mandatory. The fundamental purpose of this course is to develop the students' understandings of the concepts of calculus and to provide experience with its methods and applications. The course emphasizes a multi-representational approach to calculus, with concepts, results, and problems being expressed graphically, numerically, analytically, and verbally. The connections among these representations also are important. Students will learn to appreciate the value of calculus as the mathematics of change and motion. This course will prepare students for further study in all branches of higher mathematics, science, and related fields. Topics that will be included are: limits and continuity, differentiation with applications, and integration with applications. Calculus is not only the language for expressing physical laws in precise terms, but it is also a tool for studying these laws. Technology is used regularly to reinforce these approaches, to confirm written work, to implement experimentation, and to assist in interpreting results. The Mathematical Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

AP Calculus BC:

AP Calculus BC is roughly equivalent to both first and second semester college calculus courses. It extends the content learned in AB to different types of equations (polar, parametric, vector-valued) and new topics (such as Euler's method, integration by parts, partial fraction decomposition, and improper integrals), and introduces the topic of sequences and series. The AP course covers topics in differential and integral calculus, including concepts and skills of limits, derivatives, definite integrals, the Fundamental Theorem of Calculus, and series. The course teaches students to approach calculus concepts and problems when they are represented graphically, numerically, analytically, and verbally, and to make connections amongst these representations. Students learn how to use technology to help solve problems, experiment, interpret results, and support conclusions.

Science:

Forensics:

This course includes the applications of forensic science concepts (which involves biology, chemistry, and physics) to analyze and investigate evidence that may be discovered in a criminal investigation. There is a heavy focus on reading case studies and case law in this course. An emphasis is also placed on being able to write and defend conclusions in a concise manner supported with evidence either from class or from the lab experiences presented. Students will regularly analyze evidence, apply scientific practices, and present their findings. Classroom activities will include: laboratory investigations and activities, research projects, famous case studies, lab practicums, careers within the forensic field, and the infusion of technology throughout the scope of the course. Topics specific to the forensics field will include: an introduction to civil and criminal law; crime scenes & protocols; physical and trace evidence specifically including hairs and fibers; fingerprints; human remains involving entomology (bugs), anthropology (bones), and odontology (teeth); serology involving blood typing, blood spatter, and drugs & toxicology; fires & explosions including arson, explosives, and ballistics; DNA; and white collar crime including forgeries & document analysis and cyber forensics.

Marine and Environmental Science:

This hands-on and project-based course is designed for students with an interest in environmental science as it relates to the biosphere in general in addition to the many aspects of the marine world, specifically those bodies of water that surround our local community. As a part of the class, learners will develop the ability to identify real-world environmental issues that exist within the various ecosystems on earth and within aquatic habitats. Cause and effect relationships between populations and environmental stability will be explored. Students will evaluate claims regarding loss of biodiversity and its effect on Earth's ecosystems. By examining the availability of natural resources and occurrences of natural hazards, students will design, evaluate, and refine solutions to reduce the human impacts on Earth's systems. Students will also explore the composition of the ocean, marine organisms - their habitats, tides, waves, and coasts, and how humans are impacting oceans on a global scale. Classroom activities include laboratory investigations and activities, research projects, problem solving, data collection, and strategic thinking to increase student awareness of the importance of the marine community in our ever-changing world. Students will also utilize the greenhouse for fieldwork and experiments.

English:

Public Speaking and Communication:

This course is intended to facilitate the development of advanced communication skills in order to prepare students to excel in a variety of academic, professional, and personal experiences. Students will engage in speaking, listening, reading, and writing assignments that explore both the theoretical foundations as well as the practical applications of effective communication. They will engage with texts from history to present-day in order to analyze and model effective rhetorical techniques and appeals. Students will learn how to research, outline, draft, and deliver presentations for a variety of scenarios; from short informal presentations and group discussions, to longer formal speeches. They will explore practical workplace and interpersonal

communications, as well as investigate the implications of modern social media. Timely issues and current events relative to the course will be explored in depth. Throughout the year, students will be expected to engage in the provided public speaking opportunities. They will learn to develop and deliver appropriate and effective messages for specific audiences, purposes, and contexts by using logical arguments, critical thinking, and listening skills. This course is designed to allow significant autonomy in the topics for discussion, research, and presentation. Through instructor and peer feedback, students will gain real-world insight into their strengths and needs in all modes of communication.

History:

Sociology:

In this course, students will investigate the role of social institutions in forming and maintaining social norms and expectations for individuals, groups and organizations and for addressing social problems. Topics will include: socialization, research methods, diversity and inequality, cooperation and conflict, and social change. Practical application and active student involvement are emphasized.

Human Rights and Genocide:

This course offers a survey of major genocidal events from the early Twentieth Century to the present. While presenting the historical facts within a broader context of world affairs, a primary concern of the course is to explore the ethical and philosophical implications of modern mass atrocities, particularly genocide. The Holocaust will be the major focus of the course, although other genocides, including Armenian, Cambodian, and Rwandan genocides will also be presented. By focusing on the choices of individuals who experienced this history—through primary sources, eyewitness testimonies, personal reflections, poetry, and images—students are given a lens to thoughtfully examine the universal themes and questions about human behavior inherent in a study of the Holocaust. Students are also prompted to draw connections between history and the world today. Crimes against humanity such as those in the Balkans in the 1990s as well as Darfur and the Sudan in more recent years will also be discussed. The course leads students through an examination of history while fostering their skills in ethical reasoning, critical thinking, empathy, and civic engagement.

AP Government:

AP U.S. Government and Politics provides a college-level, nonpartisan introduction to key political concepts, ideas, institutions, policies, interactions, roles, and behaviors that characterize the constitutional system and political culture of the United States. Students will study U.S. foundational documents, Supreme Court decisions, and other texts and visuals to gain an understanding of the relationships and interactions among political institutions, processes, and behavior. They will also engage in disciplinary practices that require them to read and interpret data, make comparisons and applications, and develop evidence-based arguments. In addition, they will complete a political science research or applied civics project.

World Language:

Spanish 4:

This senior year course will help students develop an understanding of how the world is organized and interconnected. It is designed to develop and refine the four communicative skills in the Spanish language as students discuss family, health, art, public figures, ecosystems, careers, and education within Spanish-speaking countries and how they relate to the United States. Through the study of current and past issues, students will make connections, comparisons, and develop a deeper understanding of their own language and culture and those of other communities. Students will develop the necessary skills to interpret and communicate in Spanish in both their educational and personal life.

AP Spanish:

The AP Spanish Language and Culture course emphasizes communication (understanding and being understood by others) by applying interpersonal, interpretive, and presentational skills in real-life situations. This includes vocabulary usage, language control, communication strategies, and cultural awareness. The AP Spanish Language and Culture course strives not to overemphasize grammatical accuracy at the expense of communication. To best facilitate the study of language and culture, the course is taught almost exclusively in Spanish. The AP Spanish Language and Culture course engages students in an exploration of culture in both contemporary and historical contexts. The course develops students' awareness and appreciation of cultural products (e.g., tools, books, music, laws, conventions, institutions); practices (patterns of social interactions within a culture); and perspectives (values, attitudes, and assumptions).

Health Science and Medicine

Sports Medicine:

Sports Medicine is a multi-level program designed for students interested in pursuing careers in fields such as athletic training, physical therapy, medicine, fitness, physiology of exercise, nutrition, kinesiology, and other related fields. The course includes theory and practical applications in the following areas: prevention, treatment, and rehabilitation of sports injuries; taping and wrapping of injuries; emergency procedures; nutrition; sports psychology; anatomy and physiology; fitness/conditioning/strength programs; and sports medicine careers. This program will also offer practical experiences with local sports medicine specialists. Students who complete the Sports Medicine course will possess the skills and competencies required for entry level work, including certification in Personal Training through the National Academy of Sport Medicine (NASM) as well as a foundation for pursuing post-secondary education.

Certified Nurse's Aide:

This course is an approved training program for any Health Science and Medicine student who wants to become certified as a nurse's aide. It consists of 90 hours of training, including 50 hours of classroom instruction and 40 hours of clinical experience in a New Jersey licensed long-term care facility. Students will receive a minimum of 16 hours of training in the areas of:

communication and interpersonal skills, infection control, promoting residents independence and respecting residents' rights, and safety/emergency procedures including the Heimlich maneuver. Learners will be required to complete various instructional modules prior to giving physical care to residents. The main purposes of the course are to: provide students with the basic nurse's aide knowledge and skills needed to care for residents of long-term care facilities and to prepare the nurse's aide to assume the responsibilities of a trained caregiver. Upon successful completion of the course, each student will be eligible to take the two part state licensing examination for a Certified Nurse's Aide.

Pharmacy Technician:

The Pharmacy Technician course was developed in response to a rising need for trained technicians to work in hospitals or retail pharmacies. This class will provide students with an in-depth study of pharmaceutical and medical terminology, basic anatomy related to the pharmacology of medications, the ethics of pharmacy practice, various prescription medications, patient care and interaction, and pharmaceutical calculations. It will give students hands-on practice in retail pharmacy procedures through a lab module. They will learn about the information necessary for processing prescriptions/physician's orders and apply that knowledge to fill mock prescriptions. The class also focuses on the clinical application and decision-making skills in the health care environment. Furthermore, it will prepare students to perform procedures including but not limited to HIPPA compliance equipment maintenance and patient education.