

New Courses 2020-2021 School Year-Please refer to the Program of Studies for complete descriptions

Introduction to Engineering Design **Full Year-5 Credits** **Level 3**
Prerequisite: Open to all **Course Description:** Students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3D modeling software, and use an engineering notebook to document their work.

Principles of Engineering **Full Year-5 Credits** **Level 3**
Prerequisite: Open to all **Course Description:** Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration, and presentation.

Applications of Computer Science I **Semester-2.5 Credits** **Level 3**
Prerequisite: Open to all **Course Description:** Introduces students to the basics of robotics programming as well as topics with computing in society. Students will build, control, and program robots to solve problems. There will be many opportunities for students to participate in engaging hands-on activities that have real-world applications. Activities in this course will involve math, physics, and engineering topics. With computing and society, students will learn and explore topics involving safety and security, ethics and laws, and interpersonal and societal impact.

Applications of Computer Science II **Semester-2.5 Credits** **Level 3**
Prerequisite: Applications of Computer Science I **Course Description:** Continues to practice robotics programming and computing in society. Students will build, control, and program robots to solve problems. There will be many opportunities for students to participate in engaging hands-on activities that have real-world applications. Activities in this course will involve sports, medicine, art, and a competition. With computing in society, students will learn and explore additional topics involving safety and security, ethics and laws, and interpersonal and societal impact.

Dictators **Full Year-5 Credits** **Level 4**
Prerequisite: Open to grades 10-12, taken or enrolled in honors classes
Course Description: Examine the challenges of the 20th and 21st century and the struggle of democracy in the face of powerful dictatorships. We will examine the rise of dictators such as Hitler, Stalin, and Pol Pot, Kim Jong-Un, Robert Mugabe, Omar Al-Bashir, Bashar Al-Assad, and Idi Amin, and study the effects they had on the nations in which they ruled. This course will give students a greater understanding of the political, economic, and social dynamics of the 20th and 21st century.

Honors Algebra III **Full Year-5 Credits** **Level 4**
Prerequisite: Algebra II, Teacher recommend. **Course Description:** Advanced studies in algebra and pre-calculus, the topics covered include functions, modeling, statistics, sequences, and logical reasoning. Students will model and analyze problem situations through systems of equations, inequalities, and regression. They will explore and apply linear, quadratic, radical, rational, exponential, logarithmic, and trigonometric functions. Develop an understanding using algebraic, numerical, and graphical methods. A graphing calculator (TI-83 or TI-84) is highly recommended because it is used extensively.

AP Calculus BC **Full Year-5 Credits** **Level 5**
Prerequisite: Pre-Calculus, Teacher Recommendation, A placement test may be used **Course Description:** A firm foundation in calculus is necessary for pursuing careers in science, mathematics, business, and some social sciences. Topics to be studied include polynomial, trigonometric, logarithmic, and exponential functions and their graphs; polar and parametric curves; limits; differentiation; integration; applications of each of these; definite integrals; basic and advanced techniques of integration; series. Summer reading and/or a special project may be required. A graphing calculator (TI-83 or TI-84) is highly recommended because it is used extensively.

AP Statistics **Full Year-5 Credits** **Level 5**
Prerequisite: Algebra II, Teacher recommend., 12th Grade
Course Description: Major concepts and tools for collecting, analyzing, and drawing conclusions from data are covered. Students are exposed to four broad conceptual themes: Exploring Data: Describing patterns and departures from patterns, Sampling and Experimentation: Planning and conducting a study, Anticipating Patterns: Exploring random phenomena using probability and simulation, and Statistical Inference: Estimating population parameters and testing hypotheses. A graphing calculator (TI-83 or TI-84) is highly recommended because it is used extensively.

Accounting II **Full Year-5 Credits** **Level 4**
Prerequisite: Accounting I, Teacher recommend. **Course Description:** Continues to explore accounting in more detail, expanding upon the topics learned in Accounting I, students learn accounting for corporations, forming and dissolving business organizations, and management. Emphasis on problem solving and critical thinking skills, and a common core of accounting knowledge. Accounting II is appropriate for students who are preparing for business majors or those who plan to go directly into business. The use of technology is an integral part of this accounting course.

AP Computer Science A **Full Year-5 Credits** **Level 5**
Prerequisites: Teacher Recommendation **Course Description:** Students will use the Java programming language and need an appropriate background in text based programming, students will undertake the challenge of completing tasks in object oriented program design. Emphasis will be placed on data abstraction, encapsulation, inheritance, data representation, functional decomposition, and many algorithms prevalent in Computer Science today.

Independent Sports Communications **Full Year-5 Credits** **Level 3**
Prerequisite: Teacher recommend. and Athletic Dir. approval
Course Description: Work directly with the athletic director to build and sustain an effective communications plan for the Athletic Department. Projects will include, weekly sports updates via social media, weekly spotlights for players and coaches, updating the sports website and other project ideas that will further promote the athletic department. The class will also be in charge of creating an end-of-season highlight film after each sports season that will be played during the season sports banquet.

Communications 3 **Full Year-5 Credits** **Level 3**
Prerequisite: Comm. 1 & Comm. 2 **Course Description:** Independent, student-driven, and self-paced course in WAVM after school in collaboration with the Chapter 74 internship program. Students will have the opportunity to conceptualize, develop, produce, and edit projects that are of particular interest to themselves. The opportunity for creating a short film, video series, radio show, or community driven project are potential opportunities. Students will be given benchmarks and deadlines for their projects. The ability to work with others, to be self driven in the communications field, to take advice/criticism about their work, creativity, and responsibility with school equipment on and off campus are all a necessity for this course.

Music Theory **Full Year-5 Credits** **Level 3**
Prerequisite: The ability to read basic music notation, open to Gr. 10-12
Course Description: This course introduces the student to the critical, analytical, and creative skills associated with music theory. These will include the use of proper notation, aural dictation, understanding of meter, rhythm, scales, key signature and melody. Students will compose and perform several compositions using the above skills. Score analysis, form and structure, and the changing compositional techniques and styles used throughout music history will be explored. The goal of this course is to enable the musician to better understand the music he/she performs and to allow for the creativity of the student to take focus in composition.