PLEASE VISIT hths.hcstonline.org to APPLY ONLINE.
APPLICATIONS WILL BE AVAILABLE SEPTEMBER 30th.
THE DEADLINE TO SUBMIT AN APPLICATION IS OCTOBER 26, 2018.
LETTERS OF RECOMMENDATION DEADLINE IS NOVEMBER 2, 2018.

Course Descriptions for HTHS Academies 2019-2020

Design and Fabrication: (D|Fab)
- Architecture & Design
- Computer Science
- Engineering Technology (Metal Fabrication)
- Engineering Technology (Robotics)
- Industrial Design & Animation
- Wood Technology

Performing Arts:
- Music and Audio Technology
- Dance
- Drama
- Musical Theatre
For more information and to register visit: hthspa.org

Media + Visual Arts:
- Audio/Visual Production
- Broadcasting Technology
- Graphic Technology
- Fine/Studio Arts
- Interactive Media

Biomedical Science

Environmental Science & Sustainability

Culinary Arts:
- Culinary Arts
- Baking & Pastry
- Food Service Management

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* Students in all academies take state-mandated science, english, history, math, and world language classes
* AP Classes are available to students in all academies (please see brochure for info on academic classes)
THE ACADEMY FOR DESIGN AND FABRICATION (D|Fab)

The Academy for Design and Fabrication (D|Fab) prepares students for college-level study and/or careers in architecture, fine art, interior design, urban planning, industrial design, industrial engineering, mechanical engineering, mechatronics, automotive technology, digital fabrication, wood technology, and computer programming. Freshmen rotate through Career and Technical Education (CTE) courses throughout the year. They are also exposed to the multitude of career possibilities in these fields through field trips and guest speakers. Cycling the students through the pathways in this manner exposes them to the variety of careers related to these areas, provides basic skills (such as sketching, Adobe InDesign, Photoshop, AutoCad, and 3DMax, etc), and shows students how these fields are interconnected beyond the classroom.

COURSES:

Architecture & Design
Architecture is the art and science of designing our built environment. The Architecture Studio is, first, a place for work; second, a place to make discoveries; and third, a place for discussion and critique. Students develop the ability to communicate their ideas by way of 2D representation and compositing, physical and digital model making. This eventually leads to direct-to-manufacture techniques for the production of models, components and assemblies via 3D printers, laser-cutters and CNC machines. There are opportunities for students to participate in structured learning experiences such as museum visits, building tours, visits to architecture firms and, potentially, internships. At the end of this four-year course sequence, students are prepared for postsecondary studies in a wide variety of design-related fields.

Computer Science
This interdisciplinary major involves the design and development of computing systems applications. This major has roots in mathematics, engineering and applications. Students will learn a variety of programming languages such as Java, C, and C++, that will enable them to create independent projects in programming developing, code writing, and even web design. Through this course and these programs, students will learn the fundamentals of computer science concepts that can be applied across the programming languages, preparing students for high level computer science courses. Exposure to these technologies will put any young creative programmer on a path to bankable skills, and open their minds up to endless possibilities. Upon completion of this course, students will have received a thorough introduction to the skills and tools needed in order to remain competitive and succeed in an emerging market.

Engineering Technology (Metal Fabrication)
Metal Fabrication is a course where students learn about workshop safety, different types and shapes of metallic materials, how we leverage technology to safely manipulate these materials and their applications in manufacturing engineering. Students will use all types of industry-standard equipment and processes including pressure to form, hot arcs and sparks to cut, melt, weld and grind. They will utilize manual and CNC technology for precision and mass production. Students will learn how things work, how they are made, and how they break in order to properly fix them. Students will learn proper workplace safety and procedures which will benefit them in future endeavors in engineering and manufacturing fields. We work hard to develop creativity and skills through the many free-form projects in this course. This course is for students interested in working with their hands and making their ideas come to life.

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Engineering Technology (Robotics)
Engineering Tech students focus their education and training on the necessary technical skills and the correlated mathematics, science, and technology needed to enter the changing field of engineering technology & automation. This program utilizes state-of-the-art equipment to diagnose, test, repair, fabricate, and replace parts and components. Course topics may include fundamental concepts of robotics, automated manufacturing, engineering design, and design analysis. Advanced topics include electrical/mechanical components, electrical drives, pneumatic/hydraulic control circuits and programmable logic controllers (PLCs). This program leads to the opportunity for students to acquire an industry-recognized Level 1 Siemens Mechatronic Systems Certification (SMSCP).

Industrial Design & Animation
Industrial designers design products conceiving, making, and producing the things we use in our everyday lives. This course is designed to integrate thinking and making, cultivating students prepared to meet the challenges of our time. Students will utilize industry-standard software including Autodesk Inventor, 3Ds Max Design, Solidworks and others to develop innovative products while considering their effect on our environment. Elements of animation and virtual reality are utilized to bring their creations to life. In addition, students acquire skills enabling them to fabricate their working prototypes utilizing direct-to-manufacture techniques such as a 3D printing, laser cutting and CNC machining.

Wood Technology:
Wood Technology courses include both design and fabrication; students in wood technology will work hand-in-hand with other CTE students to design and build projects. Coursework includes not only design and fabrication but also computer-aided design and manufacturing (CAD-CAM). Students will first be introduced to the technology of woodworking: jointer, planer, table saw, band saw, drill press, shaper, router, CNC machining, sharpening, joinery, assembly and finishing. Courses are project-based, class sizes are small, safety is at the core, and technique and procedure drive the projects. There is open laboratory time for working on independent projects. This provides the opportunity for advanced practice with emphasis on complex planning and structures.

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PERFORMING ARTS ACADEMY

High Tech High School’s Award-Winning Performing Arts Program consists of the following programs: Dance, Drama, Music/Audio Technology, and Musical Theatre. Students audition while in 8th grade and commit to one of these four majors throughout their four years at High Tech. Students will study closely with their primary instructors (who are professionals in their own fields), as well as outside professionals. As productions require teamwork, Performing Arts students frequently work collaboratively, and there will be many times when majors overlap and students work together on interdisciplinary projects. The Performing Arts curriculum is developed around a central theme: strong support from teachers that allows students, through individualized instruction, to shape their own educational experiences and accomplishments in the context of a challenging, exciting and fun environment. The Performing Arts Academy pathway allows students to pursue rigorous Advanced Placement courses in addition to their Core Requirements.

For more information and to register visit: hthspa.org
All interested students must audition for these programs. Audition date is Saturday, January 5, 2019. Snow date is Saturday, January 12, 2019

COURSES:

Dance
DANCE offers a comprehensive curriculum based on modern and ballet technique supplemented by improvisation, choreography, jazz, hip hop, yoga, Pilates, dance history, anatomy, nutrition, injury prevention, and college and career preparation. In addition to training with High Tech’s professional faculty, students will also have the opportunity to study with guest artists and learn legendary choreography. Dancers will have many opportunities to perform their own work as well as that of their instructor and guest artists throughout the year. At High Tech, dancers grow and develop their artistry and technique in an environment that is challenging, focused and supportive.

Drama
DRAMA offers an intensive program of study designed to develop a passionate, believable and articulate actor who demonstrates intelligence, discipline and imagination. The training includes voice & speech, physical expressive techniques, character development, dramatic literary analysis, improvisation, production and theatre history, monologue and scene study, college prep and audition techniques. Students in the program have many performance and production opportunities each year. Their work with guest artists from colleges and from the industry helps them acquire a significant repertoire and a substantial portfolio.

Music and Audio Technology
MUSIC AND AUDIO TECHNOLOGY immerses students in the world of contemporary music and audio production. Students are offered hands-on studio instruction in basics of keyboard theory, MIDI composition and arrangement, the elements of analog and digital recording, sound synthesis and live sound/stage production. Based on college-level curriculum, the music courses at HTHS prepare students for rigorous post-secondary training. Students graduate with the skills needed to pursue a professional career in music, including sight singing, keyboard proficiency, and an extensive knowledge of music history and its relevance to contemporary music styles. Music and Audio Technology students are also required to take instrumental music or performance ensemble.

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**Musical Theatre**

MUSICAL THEATRE combines acting technique, dance choreography, music & voice theory as well as theatre production to bring a complete performance experience to the focused learner. Classes explore human and social conditions, performance skills, audition technique, text analysis, theater history, technical theater, culture, and the concepts of community teamwork through the performing arts. Studying Musical Theatre helps develop transferable skills: creativity, leadership, responsibility, analytical and critical thinking, self-confidence, attention to detail, discipline, and perseverance, all of which are highly desirable in business and other fields. This award-winning program participated in Papermill Playhouse’s Adopt-A-School Program through 2017- which included guest workshops, field trips, performances and showcases with some of the top professionals in Musical Theatre.

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MEDIA + VISUAL ARTS ACADEMY

The Media + Visual Arts Academy allows students to explore a variety of vocational pathways as freshmen, attending classes such as: Audio/Visual Production, Broadcasting Technology, Graphic Technology, Fine/Studio Arts, Interactive Media, Photography and Journalism/Writing for Media. By the end of sophomore year, students will be prepared with the skills and/or technology needed to focus on one program of study in junior and senior year.

Juniors will commit to a two-year vocational program where they will begin their vocational study in earnest preparation for post-secondary study and/or employment. Students will choose from one of the courses they participated in while underclassmen. Having chosen a field in which they are prepared to excel, students at this level participate in a studio environment that cultivates innovative and exceptional projects in their respective subjects. Seniors are expected to have gained a sufficient working knowledge of the basic theoretical and technical concepts that they can begin working with local industries and colleges to begin the transition to the workforce. This will take the form of internships, part-time jobs, independent projects, and college-level courses. All of this is geared to placing a student in the right pathway for their post-secondary future. The Media + Visual Arts pathway allows students to pursue rigorous Advanced Placement courses in addition to their Core Requirements.

COURSES:

Audio/Visual Production
Students will learn about the process of making movies including development, pre-production, production, post-production and distribution. Students will be responsible for creating their own short motion picture and will be graded on the effort they put into their project. Assignments will include screenwriting, storyboarding, scene design, casting, crewing, shot lists, in-class productions, revisions, re-edits and the final project. Students will write a resume, which will address the various departments of motion picture production. The main goal of the class is to help all students attain marketable skills in the motion picture industry.

Broadcasting Technology
Broadcasting focuses on creating programs for Radio and Television. The student will learn the creative and technical aspects of producing complete Broadcast Projects. Journalistic reporting is stressed and the dynamics of effective communication is reinforced through electronic news gathering and Internet research. Through High Tech’s own Radio Station, WHIT, the student will have the opportunity to develop and produce his/her own radio programs. A new state-of-the-art Digital Radio Station with enhanced web streaming capabilities has been constructed in the School’s Cafeteria. The new WHIT Web Page will allow for easier access with more sophisticated educational resources. This course will set the foundation for a career in Communications and Journalism.

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Media + Visual Arts continued

**Graphic Technology**
This program of study is recommended for any student who is interested in learning how to create documents electronically and draw on a computer. The student will learn to operate a Macintosh computer, compose electronic page layouts and illustrations, publish on the desktop, use a digital camera, scan photos and manipulate images. This program extends the students’ knowledge and skills through project-based learning. Students will plan, design, and develop media projects for the school and community. Projects may include the HTHS yearbook ad pages, brochures, and special event programs.

**Fine/Studio Arts**
This program offers a systematic approach to visual problem solving starting with simple basic concepts and elements, and progressing to a complex understanding of visual language. Aesthetics and art appreciation will be discussed in order to develop the student's judgment and artistic taste. Portfolio development and field trips to museums and galleries will augment the in-class activities.

**Interactive Media**
Interactive Media is a course in creating animation, games, and interactive experiences. Students will learn the basics of 3D modeling and animation and move towards creating interactive works. Students will work together in both solo and collaborative environments and work with industry standard programs. They will also learn how to prepare themselves for applying for schools and working in the industry.

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**BIOMEDICAL SCIENCE ACADEMY**

The Academy for BioMedical Sciences paves the way for a wide range of careers. The depth and scope of courses reveals an array of future relevance in microbiology, pharmacy, chemistry, nursing, nutrition and dietetics, neurobiology, medical or dental school, forensic science, or science research in areas such as immunology and cancer. The biomedical pathway is challenging and requires a deep understanding of how to apply science technology, engineering, and math to solve complex problems. The rigorous and relevant Biomedical Science sequence allows students to investigate the roles of biomedical professionals as they study the concepts of human medicine, physiology, genetics, microbiology, and public health. Students engage in activities such as investigating the death of a fictional person to learn content in the context of real-world cases. They examine the structures and interactions of human body systems and explore the prevention, diagnosis, and treatment of disease, all while working collaboratively to understand and design solutions to the most pressing health challenges of today and the future. Each course in the biomedical science sequence builds on the skills and knowledge students gain in the preceding courses. The Biomedical Science Academy pathway requires students to pursue rigorous Advanced Placement courses in addition to their Core Requirements.

**COURSES:**

**Principles of BioMedical Science (9th Grade)**
In the introductory course of the PLTW Biomedical Science program, students explore concepts of biology and medicine to determine factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person’s life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.

**Medical Terminology (9th Grade)**
In Medical Terminology courses, students learn how to identify medical terms by analyzing their components. These courses emphasize defining medical prefixes, root words, suffixes, and abbreviations. The primary focus is on developing both oral and written skills in the language used to communicate within health care professions.

**Probability and Statistics (9th Grade)**
Probability and Statistics courses introduce the study of likely events and the analysis, interpretation, and presentation of quantitative data. Course topics generally include basic probability and statistics: discrete probability theory, odds and probabilities, probability trees, populations and samples, frequency tables, measures of central tendency, and presentation of data (including graphs). Course topics may also include normal distribution and measures of variability.

**Emergency Medical Technology (10th Grade)**
Emergency Medical Technology courses place a special emphasis on the knowledge and skills needed in medical emergencies. Topics typically include clearing airway obstructions, controlling bleeding, bandaging, methods for lifting and transporting injured persons, simple spinal immobilization, infection control, stabilizing fractures, and responding to cardiac arrest. The courses may also cover the legal and ethical responsibilities involved in dealing with medical emergencies. These courses may prepare students to obtain certification in Emergency Medical Response (EMR), CPR, or First Aid.

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Science: BIOMEDICAL continued

**Human Body Systems (10th Grade)**
Students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis. Exploring science in action, students build organs and tissues on a skeletal Maniken®; use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases.

**AP Biology (10th Grade) *approval required***
Adhering to the curricula recommended by the College Board and designed to parallel college-level introductory biology courses, AP Biology courses emphasize four general concepts: evolution; cellular processes (energy and communication); genetics and information transfer; and interactions of biological systems. For each concept, these courses emphasize the development of scientific inquiry and reasoning skills, such as designing a plan for collecting data, analyzing data, applying mathematical routines, and connecting concepts in and across domains. AP Biology courses include college-level laboratory investigations.

**Medical Interventions (11th Grade)**
Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

**AP Seminar (11th Grade)**
Designed by the College Board to parallel college-level courses in critical thinking and communications, AP Seminar courses provide students with the opportunity to explore complex real world issues through cross-curricular lenses. Course topics vary and may include local, civic, or global issues and interdisciplinary subject areas. Courses typically emphasize research, communication, and critical-thinking skills to explore the issues addressed. Students may also examine source materials such as articles and other texts; speeches and personal accounts; and relevant artistic and literary works.

**AP Chemistry (11th Grade) *approval required***
Following the curricula recommended by the College Board, AP Chemistry courses usually follow high school chemistry and second-year algebra. Concepts covered may include the structure of matter; bonding of intermolecular forces; chemical reactions; kinetics; thermodynamics; and chemical equilibrium. For each concept, these courses emphasize the development of scientific inquiry and reasoning skills, such as designing a plan for collecting data, analyzing data, applying mathematical routines, and connecting concepts in and across domains. AP Chemistry courses include college-level laboratory investigations.

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Biomedical Innovation (12th Grade)
Biomedical Innovation courses help students apply their knowledge and skills to answer questions or solve problems related to the biomedical sciences. These courses help students design innovative solutions for emerging health challenges and address topics such as clinical medicine, human physiology, medical innovation, water contamination, public health, molecular biology, and forensic autopsy, and public health. These courses may also provide students with the opportunity to work with a mentor or advisor from a university or hospital, physician’s office, or industry. Students may design and complete an independent project as part of the course.

AP Research (12th Grade)
Designed by the College Board to parallel college-level courses in independent research, AP Research courses provide students with the opportunity to conduct an in-depth, mentored research project. Course topics include research methods, ethical research practices, and accessing, analyzing, and synthesizing information to address a research question. Courses culminate with an academic thesis paper and an oral defense of the research design, approach, and findings.

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ENVIRONMENTAL SCIENCE & SUSTAINABILITY ACADEMY

The Academy of Environmental Science & Sustainability introduces students to various environmental concepts and issues while cultivating an atmosphere for critical thinking and analysis of potential sustainable solutions. Students are provided with the unique experience of being exposed to all different types of sciences which allows for flexibility for those students who know they are interested in science but not sure which area they want to pursue yet. Students acquire the skills needed to address environmental issues and to understand the state of the environment by applying scientific principles, concepts, and methodologies in order to understand the interrelationships of various environmental impacts. Integral components of the Environmental Science Academy include learning research skills; using computer applications, such as Geographic Information Systems; and conducting statistical analyses. Students identify and analyze solutions to environmental problems by conducting hands-on laboratory exercises and field studies. Students learn about sustainability and how to look at the natural world in a sustainable way. The skills will be applied to a research project in junior and senior years. Students meet their educational goals through a Soil Resources Lab, Water Resources Lab, Ecology Lab, and Geospatial Lab. Students participate in outdoor excursions where they collect water and soil samples that allow students to conduct research on water quality, tides, ecosystem functionality, water properties and hydropower. The Environmental Science Academy pathway allows students to pursue rigorous Advanced Placement Science courses in addition to Core Science Requirements and Environmental Courses.

REQUIRED COURSES:

**Geology (9th Grade)**
This dual-enrollment (HCCC GEO 111) course is designed to give students an understanding of general principles of physical geology and appreciation of the natural world from a scientific perspective. The course focuses on the chemical and physical properties of minerals, the composition of igneous, sedimentary, metamorphic rocks and earth processes responsible for rock and mineral formation. Topics are explored within the general context of plate tectonic theory and include: minerals and rocks, weathering and erosion, geological time, earthquakes, volcanoes, mountain building, landforms, and natural resources. Laboratory work involves the practical application of geological principles such as rock and mineral identification and geological data analysis. Laboratory exercises are designed to increase understanding of course material and to expose students to a variety of tools and topics in geological sciences.

**Meteorology (9th Grade)**
This dual-enrollment course (HCCC ENV 105) is designed to give the students a comprehensive introduction to the building blocks of atmospheric science to help them develop a basic understanding of why and how atmospheric disturbances occur and their long-lasting consequences. Topics include atmospheric composition/structure, atmospheric circulation/distribution dynamics, predicting weather and global climate change. Real time satellite images; videos and other supplementary visual aids compiled by NOAA; National Geographic; USGS; USEPA and other online sources will be integrated into the lectures to breathe life into this subject and to remain current.
Science: ENVIRONMENTAL continued

Probability & Statistics (9th Grade)
We are constantly creating hypotheses, making predictions, testing, and analyzing. Our lives are full of probabilities. Statistics is related to probability because much of the data we use when determining probable outcomes comes from our understanding of statistics. We will cover a range of topics, some which include: independent events, dependent probability, combinatorics, hypothesis testing, descriptive statistics, random variables, probability distributions, regression, and inferential statistics.

Geospatial Technology (9th Grade)
Geospatial Technology will focus on the spatial analysis of environmental problems by using Geographic Information Systems (GIS). Students will learn the basic skills of ArcGIS and ArcGIS Online. Students will learn how to upload data, create layers, and create maps. Students will be introduced to the various ways to collect data from existing sources and to generate their own data by using GPS units and the Collector App for ArcGIS. The course will culminate in a study of a real world environmental problem where the students will conduct an analysis of the data in ArcGIS to develop solutions and present their findings in StoryMap by ESRI. Students will receive dual-enrollment credit from Hudson County Community College for this course.

Soil Resources (10th Grade)
In this course, Soil Resources will introduce students to major topics of Fundamentals of Soil Genesis, Classification, Morphology, Fundamentals in Soil, Chemistry & Mineralogy, Fundamentals in Soil Fertility & Nutrient Management, Soil Biology & Soil Ecology, Influences & Management of Soil Physical Properties, and Soil and Land Use Management.

Water Resources (10th Grade)
This Water Resources class introduces the science and policy behind managing our Earth's precious water resources. Topics include the importance of water to society, hydrologic processes, environmental activities that influence water resources, watershed health based on soil composition, water laws, and pressing water resource issues. Our goal is to not only gain a water science knowledge base, but to also apply that knowledge to the solving of issues and managing of water resources in an efficient and ethical manner.

Apiculture I & II (10th Grade & 11th Grade)
Apiculture provides an in-depth look at the ecology, biology, and management of the honey bee. Students learn about bee biology, ecology, and management from both lectures and hands-on instruction. Students will establish new colonies, follow their development, and learn to diagnose problems associated with bee culture. Students completing this class should be able to establish and care for a honey bee colony. Students will also learn to prepare honey for market and to manage bees for crop pollination. Inquiry and discussion with apiarists, entomologists, and audio and visual lectures and field trips are sources of additional information. The goal of the class is to gain an understanding of the following: 1) the biology of bees 2) the relationship between bees, plants and people, and 3) the agriculture of honey, pollen, propolis, and wax.

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Science: ENVIRONMENTAL continued

**Agriculture and Society I & II (10th Grade & 11th Grade)**
Agriculture and Society will focus on learning about the various types of agriculture systems, such as conventional, urban, sustainable, permaculture, and organic. Students will critically analyze human’s impact through agriculture and food production on the environment. Systems thinking will be applied to this course where the students will gain an understanding of the following systems, nutrients and water that are being impacted by agriculture. Students will obtain hands-on experience with the following: hydroponics, aquaponics, and organic gardening.

**AP Chemistry (10th Grade) *approval required**
Following the curricula recommended by the College Board, AP Chemistry courses usually follow high school chemistry and second-year algebra. Concepts covered may include the structure of matter; bonding of intermolecular forces; chemical reactions; kinetics; thermodynamics; and chemical equilibrium. For each concept, these courses emphasize the development of scientific inquiry and reasoning skills, such as designing a plan for collecting data, analyzing data, applying mathematical routines, and connecting concepts in and across domains. AP Chemistry courses include college-level laboratory investigations.

**Urban Ecology (11th Grade)**
Urban Ecology will focus on the study of ecology in our built environment. Students will compare and contrast the ecological processes and environmental service systems in urban, suburban and rural areas. Case studies of various cities will be studied to identify the nature that exist as well as the resiliency of these cities to climate change. Students will conduct lab and field studies in the NY-NJ metro area to enhance their learning in the classroom. Students will receive dual-enrollment credit from Hudson County Community College for this course.

**Environmental Field & Research I (11th Grade)**
Environmental Field & Research I will focus on introducing students to the engineering design process and STEM research. Students will generate research ideas and will learn about the basics of STEM research design, such as conducting background research, proposal writing, statistical and graphical data interpretation, writing a STEM research paper, and presenting a STEM research project. Students will work on STEM research projects on environmental topics, such as water quality, forest field studies, invasive species, climate change, and stormwater management. Students will also be introduced to public policies and regulations that impact environmental service systems. Students will participate in field experiences to enhance their learning in the classroom.

**AP Biology (11th Grade) *approval required**
Adhering to the curricula recommended by the College Board and designed to parallel college-level introductory biology courses, AP Biology courses emphasize four general concepts: evolution; cellular processes (energy and communication); genetics and information transfer; and interactions of biological systems. For each concept, these courses emphasize the development of scientific inquiry and reasoning skills, such as designing a plan for collecting data, analyzing data, applying mathematical routines, and connecting concepts in and across domains. AP Biology courses include college-level laboratory investigations.

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Science: ENVIRONMENTAL continued

Environmental Public Policy (12th Grade)
This course begins with an overview of present environmental policies as expressed in State and Federal legislation, and proceeds with an examination of both the process and substance of environmental policy. The history of the modern environmental movement and the impact it continues to have on public policy are explored. Topics include: environmental policy formation and implementation; influences of public interest groups, industry, the courts, and the media; issues concerning solid waste management, catastrophic events, and global climate change. The course explores as well the significance of the National Environmental Policy Act, the Endangered Species Act, the Clean Water Act, the Clean Air Act and Right-to-Know laws. Students are expected to participate in information gathering through active research from legislative histories, agency backgrounds, and, where appropriate, attending public hearings. Students will receive dual-enrollment credit from Hudson County Community College for this course.

Environmental Field & Research II (12th Grade)
Environmental Field & Research II will focus on advancing the students’ skills in developing projects using the engineering design process and STEM research that were learned in Environmental Field & Research I. Students will work on STEM research projects on various environmental topics, such as air pollution generated by fossil fuel combustion, biodegradation and bioremediation, biodiversity of the Meadowlands, smart growth, sustainable urban development, and the adaptive reuse of an urban building. Students will conduct a mini-environmental impact statement where they will assess the impacts of proposed building actions on the environment. Students will also be introduced to public policies and regulations that impact environmental service systems. Students will participate in field experiences to enhance their learning in the classroom.

AP Environmental Science (12th Grade)
This full year course is designed to fulfill the requirements of a one semester introductory college course in environmental science. It is interdisciplinary in nature and frequently draws from a wide variety of fields including geology, biology, environmental studies, chemistry, geography and environmental science. The recurring themes that we will investigate throughout the course are how science is a process that constantly changes the way we understand the world and that energy conversions underlie all ecological processes. Students are encouraged throughout the course to consider scientific principles and disciplines when completing activities, labs and fieldwork. The goal of this course is to provide students with the skills needed to methodically identify and analyze environmental issues both natural and man-made, evaluate the risks correlated to these issues, examine alternative solutions to resolve or prevent them, and develop their own views on these issues.

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CULINARY ARTS ACADEMY

The 4-year Culinary Arts program allows students to move into 3 areas: Culinary (chef, station chef, sous-chef), Baking and Pastry, or Food Service Management. Freshman year gives students the necessary introductions for each core area and will guide them to soundly decide what area of focus they would like to pursue during their sophomore, junior, and senior year. The introductory courses will introduce students to all facets of food service operations through immersive techniques. The first year also includes a Food and Nutrition course designed to provide students with knowledge and skills related to commercial food preparation and/or production, with a strong emphasis on nutrition, balanced diets, and satisfying special dietary needs. Topics typically include assessing nutrient content, the science of food and nutrition, physiology and utilization of nutrients. Course content may also cover additives, contaminants, food-borne illnesses, and food technology.

Each course of study introduces the students to the fundamentals of food safety and sanitation, principles of nutrition, and foundations in the basic fundamentals of commercial food preparation and practices. They progress to a wide variety of advanced culinary, baking & pastry, and food service management objectives as they grow with the program. Students work in the cafeteria kitchen preparing and learning how to prepare foods for staff and student meals, and any other events held at the school that help promote their skills and techniques for future success.

The Culinary Arts Academy collaborates with an extraordinary group of industry partners as part of our Advisory Committee. The committee’s input, combined with our extremely knowledgeable staff, establishes a professionally focused and solid foundation that prepares students for future success in the Culinary field. Committee members assist in giving students industry exposure and networking opportunities in, and out of, the classroom. The Culinary Arts Academy also works closely with chosen colleges to help the students gain college credits and gain expertise into our program. The Advisory Committee has acknowledged the utmost importance for students to have a SERVSAFE® FOOD PROTECTION MANAGER CERTIFICATION prior to graduating. Obtaining the certification is a senior requirement for all students in each program of study. Also, students in the culinary program will be participants in the Skills USA Championships which is a competitive event that showcases the best career and technical education students in the nation. Contests begin locally and continue through the state and national levels.

The Culinary Arts pathway allows students to pursue rigorous Advanced Placement courses in addition to their Core Requirements.

9th Grade: Marking period (Q1, Q2, Q3, Q4) rotations for all pathways:
- Culinary Arts
- Baking and Pastry
- Food Service Management
- Nutrition (not offered beyond 9th)

10th Grade:
- 2 Marking Periods (Q1, Q2) of pathway
- 1 Semester (SS) of preferred chosen pathway

11th & 12th Grade:
- Full year of preferred chosen pathway

*Course descriptions subject to change as we update our curriculum annually
* Students in all academies take state-mandated science, english, history, math, and world language classes
* AP Classes are available to students in all academies (please see brochure for info on academic classes)
CULINARY ARTS continued

Pathways:

**Culinary Arts**
This course of study prepares students for a career as a chef, station chef, or sous-chef. Students are introduced to the fundamentals of food safety and sanitation, principles of nutrition, and the fundamentals of commercial food preparation and practices. They then progress to a wide variety of advanced culinary objectives. Students work in the newly renovated cafeteria kitchen preparing and learning how to prepare foods for staff and student meals, and any other events held at the school that will help promote their skills and techniques for future success. At the end of 4 years students will be prepared to start an entry level position in the food service industry or continue to build upon their studies in a post-secondary environment. Topics include Food Safety and Sanitation, Nutrition, Culinary Math, Stocks Sauces & Soups, Pantry & Breakfast Cookery, Storeroom & Purchasing Operations, and Production Skills and International Cuisine.

**Baking & Pastry**
This course of study prepares students for a career as a baker or pastry chef. Students are introduced to the fundamentals of food safety and sanitation, culinary math and the fundamentals of commercial food preparation and practices. They then progress to a wide variety of advanced bakery and pastry objectives. Students work in the newly renovated cafeteria kitchen preparing and learning how to prepare breakfast and dessert items for staff and student meals, and any other events held at the school that will help promote their skills and techniques for future success. At the end of 4 years students will be prepared to start an entry level position in the food service industry or continue to build upon their studies in a post-secondary environment. Topics include Baking, Culinary Math, Cookies, Pies & Tarts, Quickbreads, Pate a Choux, Meringue, Cakes, Chocolates, Laminated Doughs, Breads, Ice Cream, Plated Desserts, Petit Fours, and Menu Planning.

**Food Service Management**
This course of study prepares students for a leadership role in management. Students are introduced to the fundamentals of food safety and sanitation, principles of nutrition, and the fundamentals of commercial food preparation and practices. They then progress to a wide variety of advanced food service management objectives. Students work in the newly renovated cafeteria kitchen learning how to manage a food service operation by preparing the cafeteria and luncheon room for staff and student meals, and any other events held at the school that will help promote their skills and techniques for future success. At the end of 4 years students will be prepared to start an entry level position in the food service industry or continue to build upon their studies in a post-secondary environment. Topics include Business, Communication Skills, Menu Planning and Facilities Design, Principles of Management, Principles of Marketing, Human Resource Management, and Entrepreneurship.

*Course descriptions subject to change as we update our curriculum annually
* Students in all academies take state-mandated science, english, history, math, and world language classes
* AP Classes are available to students in all academies (please see brochure for info on academic classes)