

**UNION COUNTY
VOCATIONAL-TECHNICAL
HIGH SCHOOL**



**ACADEMIC PROGRAM GUIDE
2017-2018**

Dear Parents/Guardians and Students:

The Academic Program Guide is designed to help you select an appropriate course of study for the next academic year. Inside you will find course descriptions detailing the contents and requirements for all of the courses offered at the Union County Vocational-Technical High School. In addition, this Guide contains important information regarding academic policies and procedures, including our grading policy, QPA calculation, and graduation requirements. Please look over this guide carefully, and feel free to contact me or your child's school counselor any questions or concerns you may have.

Sincerely,

Jeffrey Lerner

Principal
Union County Vocational-Technical High School

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SCHEDULING

Students will register for courses via the PowerSchool Parent Portal and complete a course registration form which must be returned to the appropriate school counselor. Students and parents should carefully read over all course descriptions and pre-requisites before selecting classes. Students will only be allowed to request courses for which they meet the pre-requisite requirements.

Every attempt will be made to honor a student's course requests; however, conflicts may occur due to scheduling constraints, in which case, students will be enrolled in the courses selected as alternates. Therefore, alternate choices should be selected carefully when planning a schedule of courses and ranked in order of preference.

ELECTIVE COURSE SCHEDULING

Classes that do not fulfill a specific graduation requirement are considered elective courses. Students may choose elective courses from any of the following three categories:

1. Core Content Courses (Vocational Education, Social Studies, Mathematics, Science, World Language)
2. Interdisciplinary Courses
3. Vocational Courses at another UCVTS School*

*Scheduling priority is given to students in the school where the vocational course is offered. Students wishing to enroll in a vocational course outside of UC TECH may do so only if space permits and the course is educationally beneficial to the student. Vocational courses in other UCVTS schools are available to UC TECH students on a limited basis. Please keep this in mind when making elective and alternate choices.

SCHEDULE CHANGES

Schedule changes will **not** be made for reasons of convenience or because of teacher preference. Only changes which are educationally beneficial to the student will be considered.

Scheduling changes will **not** be considered for any of the following reasons:

1. Course content or standards differing from student expectations.
2. Inability of a student to relate well to a given teacher.
3. Dropping a course in order to lighten one's load.
4. Participation in extra-curricular activities and/or athletics.

DROP/ADD PERIOD

Students have two weeks from the start of a semester to request a schedule change. All requests must be made in writing to the student's school counselor and will only be made if the change is educationally beneficial to the student.

ADVANCED PLACEMENT (AP) COURSE REQUIREMENTS

Advanced Placement (AP) courses are college-level courses that give students the opportunity to earn college credit or placement while still in high school. Due to the academic rigor of these courses, enrollment in an AP course has the following eligibility requirements:

1. Students **must** attend an AP Information Session for the course(s) of their choice in the spring of the preceding year.
2. Students and parents/guardians **must** read and sign a contract outlining course policies and expectations.
3. Students **must** have earned a grade of 85 or above in all prerequisite courses or have obtained a recommendation from the subject area instructor.

All AP courses are designed for those wishing to work diligently in order to prepare for the AP Exam administered by the College Board in May.

GRADING POLICY

Grades may be interpreted as follows:

A	90-100
B	80-89
C	70-79
D	65-69
F	64 or below

For full year courses, each marking period grade counts for 20% of the student's final course grade. Midterm and final examinations each count for 10% of the final course grade.

For semester courses, each marking period grade counts for 40% of the student's final course grade. The final semester examination counts for 20% of the final course grade.

QUALITY POINT AVERAGE

A Quality Point Average (QPA) will be calculated for each student. The final course grade is multiplied by the number of credits received for the course. The total credits and the total quality points are then divided to produce the QPA as in the *example* below:

Subject	Grade	Credits	Quality Points
Vocational	95	10	950
English	90	5	450
Social Studies	94	5	470
Math	87	5	435
Science	90	6	540
World Language	90	5	450
Fitness	98	3.75	367.5
Health	99	1.25	123.75
Total		41	3786.25

$$3786.25 / 41 = 92.3476$$

QPA is calculated only when a course has been completed.

The QPA appearing on the high school transcript is **unweighted** and includes all subjects with the exception of repeated coursework. An official QPA can be obtained from the student's school counselor.

FAILURES

Students that fail a course that is required for graduation must attend summer school and successfully complete the course before the next course in that subject area's sequence can be taken. It is the student's responsibility to find and enroll in an approved equivalent of the failed course. The transcript will show the student's failing grade in the course, which will be included in the QPA. The transcript will also show that the student repeated the class and the grade that was earned. Grades earned in repeated coursework are not included in the QPA.

ACADEMIC PROBATION

Students whose work falls below acceptable standards of achievement (70%) may be placed on academic probation. A conference with a school administrator, counselor, parent(s), and student may be required so that the academic expectations of the Union County Vocational-Technical High School may be reviewed. Options to help a student, such as peer tutoring, individualized instructional plans, or extra assistance from the faculty may be implemented. The school administrator may also take action on a case-by-case basis, including limiting a student's co-curricular options and participation in extra-curricular activities.

GRADUATION REQUIREMENTS

Students must earn 120 credits to graduate with a high school diploma endorsed by the New Jersey Department of Education. The **required** coursework for UC TECH is as follows:

Subject Area	Freshmen Year	Sophomore Year	Junior Year	Senior Year
Vocational Education 4 years	<i>Varies by Program – Please See Vocational Education Requirements</i>			
English 4 years	World Literature	Early American Literature <i>or</i> American Literature+	Modern American Literature <i>or</i> British Literature+	British Literature <i>or</i> AP Literature & Composition
Social Studies 3 years	World History	United States History I	United States History II	
Mathematics* 4 years	Combined Algebra	Geometry/Trigonometry	Math Analysis	Calculus <i>or</i> AP Calculus I/AB <i>or</i> Probability & Statistics <i>or</i> AP Statistics
Science 4 years	Biology and Scientific Inquiry & Analysis	Chemistry	Physics	Additional Science Course
World Language* 2 years	Spanish I	Spanish II		
Fitness/Health 4 years	Fitness I & Health I	Fitness II & Health II	Fitness III & Health III	Fitness IV & Health IV
Visual and Performing Arts 4 years		Dance Appreciation		
Financial Literacy		Financial Literacy		

*Initial placement determined by UCVTS.

AWARDS AND HONORS

Honor Roll: Awarded each Marking Period to students earning an 80 or above in all subjects.

High Honor Roll: Awarded each Marking Period to students earning a 90 or above in all subjects.

National Honor Society: Open to junior and senior students who meet the Society's standards for academics, character, leadership, and service. Students must have a QPA of 92 or above in order to be considered.

Spanish Honor Society: Open to junior and senior students earning a 92 or above in Spanish, and an overall QPA of 85 or above. Students must meet the Society's standards for academics, character, leadership, and service.

TECHNICAL CONCENTRATIONS VOCATIONAL EDUCATION

Subject Area	Freshmen Year	Sophomore Year	Junior Year	Senior Year
Vocational Education <i>4 years</i>	Introduction to Systems Applications	Technical Concentration I	Technical Concentration II	Technical Concentration III

Course Title: Introduction to Systems Applications
Grade Level: 9

Course Number: 01_1101_050
Credits: 2.5

In the Computer Applications class freshmen learn the Microsoft Office Suite (Word, Excel, PowerPoint, and Access) and Publisher. Students are expected to be able to apply what they have learned for work and presentations in their other classes and for a possible job in the business world. In addition to doing textbook projects, students learn practical applications for the real world. They create presentations for family gatherings, business presentations, business trips, buying and selling stocks, purchasing a home, cars, computers, cameras, etc. Freshmen learn to search the Internet with a plan and determination to find the proper information for the project at hand. They learn to incorporate music and videos into these presentations. Students will have the opportunity to obtain their Microsoft Office Specialist certification in Word, PowerPoint, and Excel upon completion of the course.

TECHNICAL CONCENTRATION OPTIONS:

Automotive Technology
Commercial Art
Cosmetology
Criminal Justice
Culinary Arts

Digital Media Design
Electrical Technology
Green Construction Technology
Information Technology

EXERCISE PHYSIOLOGY & RELATED HEALTH SCIENCES VOCATIONAL EDUCATION

Subject Area	Freshmen Year	Sophomore Year	Junior Year	Senior Year
Vocational Education <i>4 years</i>	Foundations of Exercise Science	Medical Terminology and Emergency & Clinical Care and Dynamics of Healthcare	Scientific Principles of Nutrition and Introduction to Physical Therapy and Anatomy & Physiology I and Emergency & Clinical Care	Medical Terminology and Exercise Prescription for Special Populations and Fundamentals of Health & Wellness

Courses are offered in partnership with Rutgers University School of Health Related Profession. Students have the opportunity to earn dual credit.

Course Title: Foundations of Exercise Science
Grade Level: 9

Course Number: 01_1501_050
Credits: 5

The first year of the Exercise Physiology and Related Sciences serves as both an introduction to the field of health and fitness sciences as well as foundation for the material to be covered in future years. The course will be organized into 3 primary sections. *Introduction to Exercise Science*, which provides a history and overview of the field of fitness and health sciences as well as offer general information on

physical fitness, *Introduction to Anatomy and Physiology* which will present mechanics, organization, interaction, and cellular functioning of various body systems, and *Introduction to Nutrition* will cover the major components of food as well as selected topics in sports and performance nutrition. The course will stress professional behavior and good character to prepare students for future interactions with clients, co-workers, and other professionals. The course introduces many major concepts that create the foundation required for future high school and college courses.

Course Title: Dynamics of Health Care in Society[#]

Course Number: 01_2503_050

Grade Level: 10

Credits: 2.5

In this course, students will learn about the environment and components of the health care field of employment. Topics will include ethics, professional behavior, decision making, problem solving, management, infection control, safety on the job, health careers, stress, time management skills, the history of health care, communication, getting a job and job satisfaction. Students will participate in varied activities and projects to help understand and implement the importance of teamwork and interpersonal relationships throughout their careers. This course will serve as a foundation for the students in exploring the fundamentals of health care in today's society.

Course Title: Scientific Principles of Nutrition[#]

Course Number: 01_3501_050

Grade Level: 11

Credits: 2.5

Pre-Requisite: Successful completion of Dynamics of Health Care

This course designed to explore the science and nutrition of food. It will provide students with an understanding of the history and origin of food, the harvesting and production of food, along with the processing of food, and the culinary arts. The digestion process, functions of certain nutrients in the body as well as some effects of specific nutrient deficiency will also be addressed. In addition, food safety and food borne illnesses' along with the role of food in health, disease prevention, and its affects to the body, both acute and chronic, will also be examined. Guest speakers may be invited to share their knowledge in the food and nutrition sciences .Students will be participating in various activities including field trips, internet based projects, and occasional laboratory based exercises to help summarize and implement the broad disciplines of food science and nutrition.

Course Title: Introduction to Physical Therapy

Course Number: 01_3502_050

Grade Level: 11

Credits: 2.5

Pre-Requisite: Successful Completion of Introduction to Exercise Physiology

The course is designed to provide an introduction to the profession of physical therapy. Students explore the principles and practices of therapists in the health care industry. Being introduced to clinical skills in the areas of physical therapy enables students to gain understanding of rehabilitative care in multiple settings. After completion of this course, students may choose to seek higher education for specific degrees/licensure in a variety of fields such as physical therapy, occupational therapy, speech therapy, sports medicine, athletic training, chiropractic medicine, biology, or exercise science.

Course Title: Anatomy and Physiology I[#]

Course Number: 01_3503_050

Grade Level: 11

Credits: 5

Pre-Requisite: Successful completion of Dynamics of Health Care

Human Anatomy and Physiology is designed for the advanced biology student contemplating a health-related profession. The intent of the course is to provide an in depth study of the human body with an emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. The essential principles that will be presented include: basic anatomical and directional terminology, principles of cell biology and a survey of the Integument, Skeletal system, Muscular system, and Nervous system, including the sensory organs. As the course progresses, students will integrate all parts into the whole, reflecting on the

unifying theme of homeostasis. An integral part of the course will be the laboratory component, including dissections of varying higher order species to simulate human anatomy.

Course Title: Emergency & Clinical Care[#]

Course Number: 01_3504_050

Grade Level: 11

Credits: 1.25

Pre-Requisite: Successful completion of Dynamics of Health Care

Core Requirement: This course will be used to satisfy the UCVTS third year health requirement.

Students will be trained to respond to community emergencies through the American Red Cross' first aid course. Topics such as bleeding, head injuries, illnesses, trauma, poisoning, behavioral incidents, splinting, substance abuse, skeletal injuries and motor vehicle accidents will be addressed. Professionalism and HIPAA law will be emphasized throughout the course. Guest speakers may be invited to share their experiences and expertise. Throughout this course, the focus will be on understanding many ways that students can make a difference as health care providers in their own communities. Students will be trained in various patient care skills, such as turning and positioning, transfer techniques, wheelchair transport and bed making.

Course Title: Medical Terminology[#]

Course Number: 01_4501_050

Grade Level: 12

Credits: 5

Pre-Requisite: Successful completion of Dynamics of Health Care

This course is a study of the language related to medical science and allied health specialties with emphasis on word analysis, construction, definition, pronunciation, spelling, and standard abbreviations. The program is system structured to facilitate association of terminology with anatomy and physiology, symptomatology, diagnostic operative and therapeutic procedures.

Course Title: Exercise Prescription for Special Populations

Course Number: 01_4502_050

Grade Level: 12

Credits: 5

Pre-Requisite: Successful completion of Dynamics of Health Care

Exercise Prescription for Special Populations is an interactive course based in project based learning and analysis of the current research in the field of Exercise Science. Students will study the pathology of common diseases and conditions currently impacting the population. Students will then progress to the creation, design and implementation of exercise programs that will provide safe and effective results for these clients taking into account their medical histories and backgrounds. Students will also participate in a review course for their Personal Trainer Certification exam. This course is designed to prepare students to be able to plan and implement fitness programs for healthy individuals. Students will explore the field of personal training, including client consultation and business planning. Practical experiences will allow students to practice the skills needed to develop fitness programs and motivate clients. Upon completion of the course, students will sit for the American College of Sport's Medicine Certified Personal Trainer exam.

Course Title: Fundamentals of Health and Wellness[#]

Course Number: 01_4503_050

Grade Level: 12

Credits: 1.25

Pre-Requisite: Successful completion of Dynamics of Health Care

Core Requirement: This course will be used to satisfy the UCVTS fourth year health requirement.

This course is adapted to the needs of the allied health student whose specialization will be as a part of a health care team. The general goal is to provide a survey or introduction to human disease by a method that is somewhat less intensive than the classic and general systematic pathology that is offered to medical students. It is intended to provide the student with a better understanding and appreciation of the human body in both health and disease. An examination of health problems, disease processes, and discussions of normal functions for comparisons occur. Classification, symptoms, and terminology associated with disease and wellness are discussed. An orientation to treatment, diagnosis, and prognosis is presented.

SCHOOL OF DESIGN VOCATIONAL EDUCATION

* Courses marked with an asterisk may be available to students from other UCVTS schools based on availability. UCTECH students are given priority enrollment in these courses.

Subject Area	Freshmen Year	Sophomore Year	Junior Year	Senior Year
Vocational Education <i>4 years</i>	Visual Form I and	Visual Form II and	Computers in Graphics II and	Typography Principals and
	Visual Techniques I	Visual Techniques II and	CAD & 3D Modeling and	Computer Aided Design for Interiors and
		Computers in Graphics I and	Introduction to Interiors & Architecture and	
		Drafting & CAD	Expressive Imaging	AP Art History

Course Title: Visual Form I

Course Number: 01_1301_050

Grade Level: 9

Credits: 2.5

Beginning studio course with an exploration of the elements and principles of visual form including color. Traditional and electronic media used to investigate the visual impact of communications media, human environments, and utilitarian objects. Students will explore visualizing as a creative process of visual thinking and concept development in the planning of applied design. Various methods, formats, and presentations used for visualizing design concepts are explored.

Course Title: Visual Techniques I

Course Number: 01_1302_050

Grade Level: 9

Credits: 2.5

Beginning studio course using drawing as a communications skill for applied design disciplines. Emphasis on visualizing concepts for design projects in a wide range of materials and media. Students will understand the differences between drawing as art, in which form and personal expression are primary, and drawing as a means of visual communication. Students will develop competence in the foundation skills of presentational drawing as required for a college admissions portfolio.

Course Title: Visual Form II

Course Number: 01_2301_050

Grade Level: 10

Credits: 2.5

Pre-Requisite: Successful completion of Visual Form I

Studio course with an advanced exploration of the elements and principles of two and three-dimensional visual form. Traditional and electronic media used to investigate the visual impact of communication media, human environments, and utilitarian goals. This course will explore a variety of physical materials including those used for art-making, industrial, photographic and digital media applications and introduce a variety of approaches and processes used for art-making and design problem solving.

Course Title: Visual Techniques II

Course Number: 01_2302_050

Grade Level: 10

Credits: 2.5

Pre-Requisite: Successful completion of Visual Techniques I

Studio course exploring a variety of techniques of visualization, including electronic media, to develop and present design concepts. Students will explore a wide range of visual techniques, elements and compositional principles for art-making and design applications. Emphasis on communicating ideas for realization as architectural and interior spaces, communication graphics, consumer products, packaging, and information design. Through the exploration of two and three-dimensional studio projects, students will investigate elements and principles of the visual organization of two-dimensional, sculptural, environmental,

architectural, and interior space.

Course Title: Drafting & CAD

Course Number: 01_2303_050

Grade Level: 10

Credits: 2.5

Pre-Requisite: Successful completion of Visual Form I & II and Visualizing Techniques I & II

A comprehensive studio course introducing the standards, methods and applications of drafting and CAD in the field of design. Emphasis is on lettering, freehand sketching, problem solving, and the instrument and computer aided development of presentation and working drawings. Orthographic and axonometric projection, dimensioning, sections, geometric construction, and descriptive geometry. Special consideration will be given to the place of these tools in the entire continuum of the creative problem solving process in industrial design, Architecture and Interior design fields.

Course Title: Computers in Graphics I

Course Number: 01_2304_050

Grade Level: 10

Credits: 2.5

A studio course introducing the principles of design problem-solving, including practical applications in identity, information, promotion and advertising. Issues of visual form, the design process, client and market requirements, research, and personal expression are addressed. This course provides the foundation skills for the use of graphics software as a tool for visualizing and creative problem-solving in design.

Course Title: CAD & 3D Modeling

Course Number: 01_3302_050

Grade Level: 11

Credits: 2.5

Pre-Requisite: Successful completion of Drafting & CAD

This course presents a comprehensive introduction to the methods and applications of three dimensional modeling using Computer Aided Design systems. Emphasis is placed on use of CAD hardware and software such as Autodesk Inventor and 3D printing as design tools in the creative problem solving process.

Course Title: Computers in Graphics II

Course Number: 01_3301_050

Grade Level: 11

Credits: 2.5

A studio course providing advanced instruction in drawing, type, image editing, and image creation software. Studio projects explore design elements and principles including various methods of image creation and visual communication. This course provides further study in the skills needed for the use of graphics software as a tool for visualizing and creative problem-solving in design.

Course Title: Introduction to Interiors & Architecture

Course Number: 01_3303_050

Grade Level: 11

Credits: 2.5

Pre-Requisite: Successful completion of Drafting & CAD

Studio course introducing students to ideas, principles, and methods of solving interior and architectural problems. Students will explore the interior/architectural concepts of space, form, function, and technology in residential, business, industrial, public and multi-use purposes as well as explore the roles of the interior designer & architect in integrating social, technical, aesthetic and cultural information into the process of design.

Course Title: Expressive Imaging

Course Number: 01_3304_050

Grade Level: 11

Credits: 2.5

A studio course on the creation, use, and manipulation of images as a form of visual communication. Focus on the methods, theory, and the technology of image creation. Projects will include exploration of digital photography, xerography, graphic rendering, painting and drawing, collage and montage, computer imaging, and hand rendering.

Course Title: Typography Principals
Grade Level: 12

Course Number: 01_4301_050
Credits: 2.5

A studio style course introducing a foundational body of typographic knowledge and visual skills required for the practicing designer. An emphasis is placed upon historic and contemporary typographic design, the vocabulary of typography, formal components of letterforms and page composition.

Course Title: Computer Aided Design for Interiors
Grade Level: 12

Course Number: 01_4302_050
Credits: 2.5

A studio style course focuses on the exploration of the use of computer aided applications in the field of Interior Design. This course includes the use of technology in initial concept development, design refinement, and proposal presentation.

Course Title: AP Art History*
Grade Level: 11, 12

Course Number: 01_4303_050
Credits: 5

The AP Art History course should engage students at the same level as an introductory college art history survey. This course involves critical thinking and should develop an understanding and knowledge of diverse historical and cultural contexts of architecture, sculpture, painting and other media. This course examines and critically analyze major forms of artistic expression from the past and the present from a variety of cultures. While visual analysis is a fundamental tool of the art historian, art history emphasizes understanding how and why works of art function in context, considering such issues as patronage, gender, and the functions and effects of works of art.

TEACHER EDUCATION ACADEMY VOCATIONAL EDUCATION

Subject Area	Freshmen Year	Sophomore Year	Junior Year	Senior Year
Vocational Education <i>4 years</i>	Introduction to Education and	Differentiated Learning and	Methods of Instruction I <i>and</i> II	<i>Kean University courses</i>
	The Art of Teaching	Literacy, Numeracy and Technology in the Classroom and Psychology		

Course Title: Introduction to Education
Grade Level: 9

Course Number: 01_1201_050
Credits: 2.5

This course provides an introduction to education and teaching as a profession in the American educational system. It offers a variety of perspectives on education, including historical, philosophical, social, legal, and ethical issues in a diverse society. This course introduces students interested in a career in education to some of the concepts, practices, and procedures of contemporary American education. The organization and operation of American schools, their financial and legal support, their place and role in the community, as well as some of the historical and philosophical foundations upon which American education is predicated. Teaching as a profession is examined. This course uses K-12 classroom experiences, along with student-centered classroom activities and student-led lessons, to explore issues in schools and education. This course includes organizational structure and school governance, as well as, numerous educational concepts. The focus will

include answering questions that are imperative to making a decision of whether or not you want to pursue a career as a "Teacher."

Course Title: The Art of Teaching

Course Number: 01_1202_050

Grade Level: 9

Credits: 2.5

Pre-Requisite: Successful completion of Introduction to Education

This course provides an in depth exploration of the profession of teaching in the American educational system. This course develops the knowledge, skills and dispositions necessary to prepare future educators. The purpose of this course is to prepare teachers to make effective decisions in diverse classrooms. To accomplish this goal, emphasis is placed on producing master teachers who are self-reflective, lifelong learners and effective communicators.

Course Title: Differentiated Learning

Course Number: 01_2201_050

Grade Level: 10

Credits: 2.5

Pre-Requisite: Successful completion of Introduction to Education and the Art of Teaching

This course provides an in depth exploration of the physical, cognitive, moral and social growth and development for school age students, pre-school through teens. This course also includes the examination of the challenges of teaching diverse learners. Strategies for differentiated instruction covered in this course will include: pre-assessment of learning styles and preferences, monitoring and managing student learning, modifying lessons based on student readiness, tiered instruction, flexible grouping and authentic assessment. In addition, the categories of special education will be introduced.

Course Title: Literacy, Numeracy and Technology in the Classroom

Course Number: 01_2202_050

Grade Level: 10

Credits: 2.5

Pre-Requisites: Successful completion of Introduction to Education and the Art of Teaching

This course provides and in depth exploration of literacy, numeracy and technology in the American education classroom. This course is designed to focus on the priority of literacy and numeracy skills necessary for an effective classroom. Authentic learning can occur when activities or projects offer students an opportunity to directly apply their knowledge and skills to real-world situations. This course will expose the students to make the connection between numeracy, literacy and the Common Core State Standards for Math and English Language Arts. Technology in the classroom will be infused throughout each domain. Some technology resources that will be included but not limited to are: Google Apps, Dropbox, Storyboardthat, Microsoft Office, Turnitin.com. Additionally, this course will introduce students to research design and methodology. Students will learn how to critically evaluate the validity, reliability, and limitations of research results. Individual and group activities will involve peer critiques, evaluation of published research and on-line reviews.

Course Title: Psychology

Course Number: 01_2203_050

Grade Level: 10

Credits: 5

This introductory Psychology course provides an overview of basic psychological principles that underlie human behavior and reactions to everyday life. Students are provided an opportunity to apply critical-thinking skills to psychological problems and issues. The basic tenets of psychology are presented from a historical perspective, with attention to research-based behavioral science. The following topics will be covered: The science of psychology, social psychology, sensation and perception, health and psychology, learning and intelligence, motivation, personality, developmental psychology, and abnormal psychology and therapy.

Course Title: Methods of Instruction I

Course Number: 01_3201_050

Grade Level: 11

Credits: 2.5

Pre-Requisites: Successful completion of Differentiated Learning and Literacy, Numeracy and Technology in the Classroom

This introductory methods course provides students opportunities to plan, assess learning, and observe classroom teachers undertaking best practices. This course will guide students in the selection, implementation, and evaluation of instructional strategies adapted to meet the needs of all students. By examining effective teaching practices, students will probe the theories and research various models. Students will consider how diverse learning styles can be affected by various instructional strategies. Students will discover basic principles of curriculum development and standards.

Course Title: Methods of Instruction II

Course Number: 01_3202_050

Grade Level: 11

Credits: 2.5

Pre-Requisites: Successful completion of Differentiated Learning and Literacy, Numeracy and Technology in the Classroom

This second part methods course provides students opportunities to plan, assess and examine effective classroom management. This course is designed to acquaint students with concepts and techniques of behavioral intervention and practical applications of principles of behavioral management techniques. A theoretical foundation of key concepts associated with effective classroom management will be explored. Students will apply strategies that employ a repertoire of skills and resources useful in a learning environment. School and community resources will be available to enhance learning environments that facilitate effective learning environments. This course will also examine the role of assessment and its effectiveness. Lastly, this course will include learning in the digital age.

SCHOOL OF SUSTAINABLE SCIENCES VOCATIONAL EDUCATION

Subject Area	Freshmen Year	Sophomore Year	Junior Year	Senior Year
Vocational Education <i>4 years</i>	AP Environmental Science	Sustainable Energy Technology & Integration and	AP Environmental and	<i>Kean University courses</i>
		Sustainable Design and	Sustainable Innovations & Design	
		Sustainable Engineering		

Course Title: AP Environmental Science*

Course Number: 01_1601_050

Grade Level: 9; available as Elective to 11, 12

Credits: 5

Core Requirement: This course may be used to satisfy the UCVTS fourth year science requirement.

The goal of the AP Environmental Science course is to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving or preventing them.

Course Title: Sustainable Energy Technology and Integration

Course Number: 01_2601_050

Grade Level: 10

Credits: 5

This course examines the current sources of energy and how they are used. Students will develop sustainable solutions for energy use on the community, state and national level, through problem based learning projects. Students will begin with an overview of how energy affects peoples' lives and the science of energy and how energy is generated for today's society. Topics covered: sustainable engineering, overall energy needs and impacts thermodynamics, heat transfer, and fluid mechanisms; atmospheric energy systems; field investigation; current and future urban energy systems.

Course Title: Sustainable Design

Course Number: 01_2602_050

Grade Level: 10

Credits: 2.5

The Sustainable Design Course is an overview of the concepts and strategies involved in sustainable design and architectural construction. The course covers the history of sustainable design, LEED categories, Build It Green, and local and federal agencies overseeing and mandating green design. Students will be entrenched in a problem based learning environment embedding the practical approach to solving current sustainable issues. Students will be researching certificates associated with sustainable design (Green Point Raters, LEED AP), in addition to market advantages associated with "Greening your Business and Communities".

Course Title: Sustainable Engineering

Course Number: 01_2603_050

Grade Level: 10

Credits: 2.5

This introductory course focuses on key sustainability concepts and the role of engineering in sustainability, the engineering design process and consideration of sustainability. Students will utilize life cycle assessments to quantify environmental and economic impacts of various design alternatives. Students will engage in a case study project as part of the course.

Course Title: Sustainable Architectural CAD

Course Number: 01_3601_050

Grade Level: 11

Credits: 5

This course is an overview of the concepts and strategies involved in sustainable architectural design. Students will utilize computer aided drafting and digital modeling software allowing students the advantages of creating digital simulations to further study the relationship between building design and their impact on natural

environments. The course covers the history of sustainable design, LEED categories, and Build It Green. Students will also analyze local and federal agencies overseeing and mandating green design as well as reviewing current building code regulations. Students will also receive their OSHA 30 and AutoDesk certifications during this course. This course enables students to analyze the future environmental impact of their designs.

Course Title: Sustainable Innovation & Design
Grade Level: 11

Course Number: 01_3602_050
Credits: 5

Course Description

ACADEMY OF CLINICAL CARE SCIENCES VOCATIONAL EDUCATION

Course is offered in partnership with Rutgers University School of Health Related Profession. Students have the opportunity to earn dual credit.

Subject Area	Freshmen Year	Sophomore Year	Junior Year	Senior Year
Vocational Education 4 years	Clinical Care I and Dynamics of Healthcare	Dynamics of Healthcare and Medical Terminology and Introduction to Nutrition	Scientific Principles of Nutrition and Anatomy & Physiology I and Clinical Care II	Medical Terminology and Pharmacology and Clinical Care III and Fundamentals of Health & Wellness

Course Title: Dynamics of Health Care in Society#
Grade Level: 9

Course Number: 01_2401_050
Credits: 2.5

In this course, students will learn about the environment and components of the health care field of employment. Topics will include ethics, professional behavior, decision making, problem solving, management, infection control, safety on the job, health careers, stress, time management skills, the history of health care, communication, getting a job and job satisfaction. Students will participate in varied activities and projects to help understand and implement the importance of teamwork and interpersonal relationships throughout their careers. This course will serve as a foundation for the students in exploring the fundamentals of health care in today’s society.

Course Title: Clinical Care I
Grade Level: 9

Course Number: 01_2403_050
Credits: 5

This course builds and expands upon content covered in the Rutgers’ University School of Health Related Professions course, Dynamics of Health Care (DOHC). In Clinical Skills I, we examine the health care environment from the perspective of the nurse. Students will begin to utilize the Nursing Process and the idea of Evidence Based Practice. Students are introduced to the fundamental skill and talent of “caring” and explore the unique needs of clients based upon age, condition, developmental status, and culture. Students will “practice” the art of communication as a means to assess these needs.

Course Title: Introduction to Nutrition
Grade Level: 10

Course Number: 01_2402_050
Credits: 2.5

This course is intended to teach students the importance of making good nutritional decisions by examining the food pyramid, analyzing nutritional information and categorizing foods as healthy vs. less healthy. After assessing their own eating habits, students will understand how to change these habits by making healthy

choices and eating balanced meals. Through the use of interactive discussions and hands on experiences, students will learn the importance of maintaining a healthy lifestyle as well as provide students with the opportunity to connect school learning with life at home.

Course Title: Scientific Principles of Nutrition #

Course Number: 01_3401_050

Grade Level: 11

Credits: 2.5

Pre-Requisite: Successful completion of Dynamics of Health Care

This course designed to explore the science and nutrition of food. It will provide students with an understanding of the history and origin of food, the harvesting and production of food, along with the processing of food, and the culinary arts. The digestion process, functions of certain nutrients in the body as well as some effects of specific nutrient deficiency will also be addressed. In addition, food safety and food borne illnesses' along with the role of food in health, disease prevention, and its affects to the body, both acute and chronic, will also be examined. Guest speakers may be invited to share their knowledge in the food and nutrition sciences .Students will be participating in various activities including field trips, internet based projects, and occasional laboratory based exercises to help summarize and implement the broad disciplines of food science and nutrition.

Course Title: Anatomy and Physiology I#

Course Number: 01_3402_050

Grade Level: 11

Credits: 5

Pre-Requisite: Successful completion of Dynamics of Health Care

Human Anatomy and Physiology is designed for the advanced biology student contemplating a health-related profession. The intent of the course is to provide an in depth study of the human body with an emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. The essential principles that will be presented include: basic anatomical and directional terminology, principles of cell biology and a survey of the Integument, Skeletal system, Muscular system, and Nervous system, including the sensory organs. As the course progresses, students will integrate all parts into the whole, reflecting on the unifying theme of homeostasis. An integral part of the course will be the laboratory component, including dissections of varying higher order species to simulate human anatomy.

Course Title: Clinical Care II

Course Number: 01_3403_050

Grade Level: 11

Credits: 2.5

This course builds upon concepts and skills learned in Clinical Care I. We will begin to look at Nursing as a Profession, focusing upon Theoretical Foundations of Nursing and the in-depth study and application of the Nursing Process. Students will become adept at assessment skills, including vital signs, Health Assessment and Physical Examination and will use this data to plan for Patient Care.

Course Title: Medical Terminology (IDST-1000)#

Course Number: 01_4401_050

Grade Level: 12

Credits: 5

Pre-Requisite: Successful completion of Dynamics of Health Care

This course is a study of the language related to medical science and allied health specialties with emphasis on word analysis, construction, definition, pronunciation, spelling, and standard abbreviations. The program is system structured to facilitate association of terminology with anatomy and physiology, symptomatology, diagnostic operative and therapeutic procedures.

Course Title: Pharmacology

Course Number: 01_4402_050

Grade Level: 12

Credits: 5

This course is an introduction to the basic terms, concepts, and principles of drugs and drug therapy, and their effect on human beings with various health problems. An emphasis is placed upon the therapeutic, adverse, and

toxic effects of drugs upon the human body. Students will get the opportunity to raise moral and ethical issues that affect the consumer. Major drug classifications are emphasized and discussed in relation to the lived experiences of wellness and illness of holistic individuals. Drug classifications and effects are considered in relation to providers and consumers of health care.

Course Title: Clinical Care III
Grade Level: 12

Course Number: 01_4403_050
Credits: 2.5

In this course, students will utilize the foundational information learned in Clinical Care I and II, along with knowledge obtained in Anatomy and Physiology and Nutrition courses. Students will refine their clinical knowledge and apply these skills as they care for “clients” with specific physiologic needs. Clinical skills will focus on the care of the patient with oxygenation, fluid and electrolyte, nutrition and elimination, mobility, sensory and postoperative needs.

Course Title: Fundamentals of Health and Wellness#
Grade Level: 12

Course Number: 01_4404_050
Credits: 1.25

Pre-Requisite: Successful completion of Dynamics of Health Care

Core Requirement: This course will be used to satisfy the UCVTS fourth year health requirement.

This course is adapted to the needs of the allied health student whose specialization will be as a part of a health care team. The general goal is to provide a survey or introduction to human disease by a method that is somewhat less intensive than the classic and general systematic pathology that is offered to medical students. It is intended to provide the student with a better understanding and appreciation of the human body in both health and disease. An examination of health problems, disease processes, and discussions of normal functions for comparisons occur. Classification, symptoms, and terminology associated with disease and wellness are discussed. An orientation to treatment, diagnosis, and prognosis is presented.

ENGLISH

Course Title: World Literature
Grade Level: 9

Course Number: 02_1001_050
Credits: 5

The World Literature course is designed to expose students to a variety of countries and forms of literature. While participating in individual and class assignments, students will have an opportunity to explore a multitude of cultures. This experience is further enhanced by joint projects and activities which occur between the World History and World Literature classes. A large emphasis is placed on common themes to help students understand and appreciate the similar human conditions that exist in all cultures. These themes include the struggle with intolerance, love, coping with death, metamorphoses, and communion with nature. Many of the selections read and discussed in class come from China, India, Africa, Egypt, the Middle East, Greece, Rome, and Europe during the Middle Ages and Renaissance period. Types of literature covered include the novel, epic poem, poetry, critical essays, editorials, short stories, drama/plays, and several classical selections. In addition to reading, students will be required to write several different forms of literature, essays, and one major research paper.

Course Title: Early American Literature
Grade Level: 10

Course Number: 02_2001_050
Credits: 5

Pre-Requisite: Successful completion of World Literature

The Early and Modern American Literature courses are designed to take the students through an in-depth study of the individual writings that shape and document the American literary tradition. Students will have an opportunity to explore primary texts, novels, poems, and other artistic productions through participation in both individual and group assignments. This experience is further developed through an integrated curriculum with United States History I. A major goal of the course is for the student to come to understand

the culture and history of expression of our nation and his or her place within that tradition. Writing and language arts skills are stressed throughout the year's course of study. Many of the selections read and discussed in class come from the conventional cannon of American Literature, but extend beyond to art, dance, writings, and other materials gleaned from pop-culture, cultures excluded from traditional studies, and other sources. The outline for the course of study is chronological. Early American Literature begins with the Native American cultures and their initial contact with European explorers and settlers, continues through Colonial and Revolutionary America, all the way through the end of the Nineteenth Century. Specific units also deal with Growth and expansion of the 1820s to 1850s, the Civil War, Reconstruction, Industrialization and Immigration, and the Gilded Age.

Course Title: Modern American Literature

Course Number: 02_3001_050

Grade Level: 11

Credits: 5

Pre-Requisite: Successful completion of Early American Literature

Modern American Literature closely parallels US History II in its chronological, psycho-social, thematic-based approach to the continuation of the American literary experience through intense individual and group readings and analyses of literary works spanning American Literature from 1865 (Twain) through the 20th Century (World Wars I and II, Post-War 1950's, the 1960's, 1970's, 1980's, 1990's) to Contemporary works of the 21st Century. Novels include, but are not limited to, *The Sun Also Rises*, *To Kill a Mockingbird*, *Catcher in the Rye*, *Fahrenheit 451*. The drama *A Streetcar Named Desire* may also be read and the film viewed for additional immersion in the study of play-writing and producing for the student who possesses a penchant for the genre. Independent studies are strongly encouraged and instructor-facilitated. Emphasis is placed upon further developing and mastering of grammatical techniques and continued exposure to the Writing Process Approach employed to enhance student written production (i.e. narrative, persuasive, informational, creative writing), as well as to facilitate successful outcomes on standardized test-taking. Through advanced study and immersion in a myriad of learning environs, the student will independently select a literary research topic, develop a thesis, and produce a research paper following MLA Documentation Style guidelines. Focus is on student integration of the relationship between literacy and the world as an impetus for developing a continuing appreciation for the acquisition of knowledge

Course Title: British Literature

Course Number: 02_4001_999

Grade Level: 12

Credits: 5

Pre-Requisite: Successful completion of Modern American Literature

This course will focus on a chronological study of British Literature from its Anglo-Saxon period to the present. Emphasis will be placed upon reading and interpreting works of the great masters, from Chaucer and Shakespeare to Joyce and Eliot in thematic units which compare and contrast works from various time periods. The student will be exposed to various forms of literature from poetry and short stories to dramas and novels. In addition, students will be expected to demonstrate a strong command of their writing skills through essay writing, critical writing, creative writing, and a research paper, and to focus on clear development of literary analysis. Class participation and public speaking will be essential to the group dynamic of the course and will be used to enhance the information of the texts with personal interpretation and discussion.

Course Title: AP English Literature & Composition

Course Number: 02_4002_999

Grade Level: 12

Credits: 5

Pre-Requisite: 85 or above in Modern American Literature or Modern American Literature teacher recommendation

The AP English Literature and Composition class will be a combination of preparation for the AP English Literature and Composition Exam to be taken in May as well as a collegiate level study of literature and writing. Through a curriculum outlined by the College Board, the class will enable students to read and understand complex texts and demonstrate this understanding through mature and effective writing. The

literature of the course can be broken down into three genres: poetry, drama, and fiction (novel and short story). Close reading will revolve around the experience, interpretation, and evaluation of literature. Students will be expected to read deliberately and thoroughly, taking time to understand a work's complexity, to absorb its richness of meaning, and to analyze how that meaning is embodied in literary form. Concurrently, students will be expected to have a strong background in grammar in order to focus intense concentration on enhancing their abilities in analytical and critical writing. Various forms of writing will be emphasized and frequent writing assignments of varying lengths with several drafts should be expected.

SOCIAL STUDIES

Course Title: World History
Grade Level: 9

Course Number: 03_1001_050
Credits: 5

This course explores the world history, economics, and geography from 1450 C.E. to the present. Geographic influences on history will be explored, as will political boundaries that developed with the evolution of nations. Significant attention will be given to the ways in which scientific and technological revolutions created new economic conditions that in turn produced social and political changes. Noteworthy people and events of the nineteenth and twentieth centuries will be emphasized for their strong connections to contemporary issues. The course utilizes various elements of technology and interdisciplinary philosophies to meet the needs of the students as well as the goals of the instructor.

Course Title: United States History I
Grade Level: 10

Course Number: 03_2001_050
Credits: 5

Pre-Requisite: Successful completion of World History

This course involves the study of the development of the North American continent from the late 16th century through the late 19th century. The course analyzes the political, economic, and social factors that led to the creation of modern democracy and the struggle to keep this grand experiment alive. Specific topics that are discussed start with the arrival of the British, Spanish, and French in the 1500's, their interaction with the native populations, Colonial America, the Revolutionary War, the writing of the United States Constitution, the Civil War, Slavery, and Industrial Growth in America. The course utilizes various elements of technology and interdisciplinary philosophies to meet the needs of the students as well as the goals of the instructor.

Course Title: United States History II
Grade Level: 11

Course Number: 03_3001_050
Credits: 5

Pre-Requisite: Successful completion of United States History I

In this course, students will study the social, political, and economic characteristics of the United States from 1880 to the present. Topics will include American Imperialism, Progressivism, the United States at War, the Great Depression, the Sixties, and the Vietnam Conflict, among others. Students will take part in a variety of activities geared to accommodate different learning styles. These activities include simulations, writing exercises, cooperative learning, and visual and audible expression.

Course Title: AP United States History
Grade Level: 12

Course Number: 03_5001_999
Credits: 5

Pre-Requisite: 85 or above in US History II or US History II teacher recommendation

The AP United States History course is designed to provide students with the analytic skills and factual knowledge necessary to deal critically with the problems and materials in U.S. history. The course prepares students for intermediate and advanced college courses by making demands upon them equivalent to those made by full year introductory college courses. Students should learn to assess historical materials – their relevance to a given interpretive problem, reliability, and importance – and to weigh the evidence and interpretations presented in historical scholarship. An AP U.S. History course should thus develop the skills

necessary to arrive at conclusions on the basis of an informed judgment and to present reasons and evidence clearly and persuasively in essay format. Topics covered will include: American diversity, American identity, culture, demographic changes, economic transformations, environment, globalization, politics and citizenship, reform, religion, slavery and its legacies in North America, and war and diplomacy.

Course Title: AP U.S. Government and Politics

Course Number: 03_5002_999

Grade Level: 12

Credits: 5

Pre-Requisite: 85 or above in US History II or US History II teacher recommendation

This course will give students an analytical perspective on government and politics in the United States. The course includes both the study of general concepts used to interpret U.S. politics and the analysis of specific examples. It also requires familiarity with the various institutions, groups, beliefs, and ideas that constitute U.S. politics. Topics of discussion include: The U.S. Constitution, political parties, interest groups, mass media, public policy, civil rights, and civil liberties. Students are expected to be up-to-date on current events in order to facilitate discussion.

Course Title: AP European History

Course Number: 03_5003_999

Grade Level: 12

Credits: 5

Pre-Requisite: 85 or above in US History II or US History II teacher recommendation

The goals of the AP European History course are for students to gain knowledge of basic chronology of major events and trends from approximately 1450 to the present. Also, students will develop an understanding of some of the principal themes in modern European history including intellectual and cultural history, political and diplomatic history as well as social and economic history. Finally, the students will gain an ability to analyze historical evidence, as well as express historical understanding in writing. This is a demanding course for students with a serious interest in history. Students will be expected to interpret and analyze historical documents as well as identify trends over time.

Course Title: Genocide Studies and The Holocaust

Course Number: 03_5004_999

Grade Level: 11, 12

Credits: 5

This course will be an examination of the history of genocide, including the causes and consequences of genocides. The students will examine the psychological and sociological aspects of genocides, including hate and prejudice, de facto and de jure discrimination, and organized violence towards specific groups. The course will specifically analyze genocides and compare and contrast the unique settings of each, including the genocides within Africa, Asia, and Europe. Topics will include possible genocides in the Ottoman Empire, Soviet Union, Germany, China, Cambodia, Bosnia, Rwanda, and the Sudan. Studies will be done utilizing primary and secondary sources, literature, and film. The class will help students attain a detailed understanding of human rights, international policy, and the social studies. Furthermore, students will gain a deeper appreciation for different cultures and religions around the world. Students will learn the complex interactions between different groups of people and the consequences of prejudice and discrimination between these groups. The course will challenge the students to utilize critical thinking skills to improve the world.

MATHEMATICS

Course Title: Combined Algebra

Course Number: 04_1001_050

Grade Level: as determined by UCVTS Placement Test

Credits: 5

Combined Algebra is an in-depth coverage of all topics in a traditional Algebra I course and most topics in a traditional Algebra II course. These topics include the study of linear equations, absolute value equations, quadratic equations and parabolas, functions, basic matrix operations, linear inequalities, systems of equations and inequalities, polynomial and rational equations, and powers, exponents, and radicals. This is a rigorous course with an emphasis on problem solving, working collaboratively, and communicating mathematically in

both written and oral form.

Course Title: Geometry/Trigonometry

Course Number: 04_2001_050

Grade Level: as determined by UCVTS Placement Test

Credits: 5

Pre-Requisite: Successful completion of Combined Algebra or placement test results

Geometry/Trigonometry is an in-depth coverage of plane and solid geometry with additional study of selected topics from plane trigonometry and discrete mathematics. Geometry topics include the study of reasoning and logic, proofs, constructions, lines, triangles, polygons, circles, similarity, congruence, transformations, planar and space measurements. Trigonometry topics include trigonometric ratios as defined for the right triangle and unit circle, reciprocal, quotient and Pythagorean identities, inverse trigonometric functions, Law of Sines and Law of Cosines. Discrete mathematics topics include basic principles of iteration, recursion, and mathematical induction, which are used to solve combinatorial and algorithmic problems. Geometry/Trigonometry is a rigorous course with an emphasis on problem solving, working collaboratively, and communicating mathematically in both written and oral form. Appropriate computer software as well as educational media is used to introduce and reinforce concepts visually.

Course Title: Math Analysis

Course Number: 04_3001_050

Grade Level: as determined by UCVTS Placement Test

Credits: 5

Pre-Requisite: Successful completion of Geometry/Trigonometry or placement test results

Math Analysis is an in-depth coverage of advanced algebra as well as the rigorous study of pre-calculus. Topics include real numbers, exponents and radicals, polynomials and factoring, fractional expressions, solving equations and inequalities, functions and their graphs, polynomial and rational functions, complex numbers, exponential and logarithmic functions, trigonometric functions, analytic trigonometry, analytic geometry/conic sections, series and sequences, probability, statistics and data analysis, linear algebra and matrix mathematics and determinants. Connections between algebra, geometry, and trigonometry will be made. These topics form the foundation for the successful study of calculus. Math Analysis is a rigorous course with an emphasis on developing problem-solving and reasoning abilities, the use of graphing calculators, communicating mathematically in both written and oral form, and solving real life problems.

Course Title: Calculus

Course Number: 04_4001_999

Grade Level: as determined by UCVTS Placement Test

Credits: 5

Pre-Requisite: Successful completion of Math Analysis

The Calculus course is an alternative to the AP Calculus I/AB course. It is designed specifically for students not planning on taking the AP Calculus Exam. However, most of the topics covered in the college-level AP course will also be covered here at a slower pace. The course emphasizes a multi-representational approach to calculus, with concepts, results, and problems being expressed geometrically, numerically, analytically, and verbally. Topics covered include the initial review of pre-calculus topics, limits, differentiation and its applications, and integration and its applications. There is an emphasis on problem solving, working collaboratively, and communicating mathematically in both written and oral form. Even though this is not an Advanced Placement course, students are still expected to spend a considerable amount of time outside of class on homework preparation and daily studying.

Course Title: AP Calculus I/AB

Course Number: 04_4002_999

Grade Level: as determined by UCVTS Placement Test

Credits: 5

Pre-Requisite: 85 or higher in Math Analysis or Math Analysis teacher recommendation

AP Calculus I/AB is a rigorous college-level course which emphasizes a multi-representational approach to calculus, with concepts, results, and problems being expressed geometrically, numerically, analytically, and verbally. Topics covered include the initial review of pre-calculus topics, limits, differentiation and its applications, and integration and its applications. There is an emphasis on problem solving, working

collaboratively, and communicating mathematically in both written and oral form. Since this is an Advanced Placement college-level course, students are expected to spend a considerable amount of time outside of class in homework preparation and daily studying.

Course Title: Advanced Mathematics

Course Number: 04_4003_999

Grade Level: 12

Credits: 5

Pre-Requisite: Successful completion of Algebra II/Trigonometry

Advanced Mathematics is an in-depth coverage of advanced algebra as well as the rigorous study of pre-calculus topics. Topics include real numbers, exponents and radicals, polynomials and factoring, their graphs, polynomial and rational functions, complex numbers, exponential and logarithmic functions, trigonometric functions, analytic trigonometry, series and sequences, probability, statistics and data analysis, linear algebra and matrix mathematics and determinants. Connections between algebra, geometry, and trigonometry will be made. These topics form the foundation for the successful study of a college algebra, trigonometry or calculus course. Advanced Mathematics is a rigorous course with an emphasis on developing problem-solving and reasoning abilities, the use of graphing calculators, communicating mathematically in both written and oral form, and solving real life problems.

Course Title: AP Calculus II/BC

Course Number: 04_5001_999

Grade Level: as determined by UCPTS Placement Test

Credits: 5

Pre-Requisite: 85 or higher in AP Calculus I/AB or AP Calculus I/AB teacher recommendation

AP Calculus II/BC is a rigorous college level course that emphasizes a multi-representational approach to calculus. Students learn to express mathematical concepts geometrically, numerically, analytically, and verbally. As a continuation of Calculus I, topics covered in this class include applications and techniques of integration, L'Hopitals' Rule, improper integrals, an introduction to differential equations, infinite series and sequences, conic sections, parametric and polar equations. Students who enroll in Calculus II will be expected to participate in a collaborative learning environment. As in Calculus I, problem solving and mathematical communication in written and oral form are an essential component of this course. All students are expected to spend considerable time outside of class in homework preparation and daily study.

Course Title: Probability and Statistics

Course Number: 04_5004_999

Grade Level: 12

Credits: 5

Pre-Requisite: Successful completion of Algebra II/Trigonometry *or* Math Analysis

Probability and Statistics is an introductory course in descriptive statistics and statistical inference including the study of probability. Topics of study include summary statistics, graphical displays of data, sampling, probability distributions, confidence intervals and significance testing. Practical problems involving correlation, linear regression, surveys, experiments and hypothesis testing are also included. There will be an emphasis on developing a critical perspective of data and statistical analyses as they are presented in popular culture. Problem-solving and reasoning abilities will be enhanced. Graphing calculator, written and oral communication and collaboration skills will be employed in solving real-life problems.

Course Title: AP Statistics

Course Number: 04_5005_999

Grade Level: 12

Credits: 5

Pre-Requisite: 85 or higher in Math Analysis or Math Analysis teacher recommendation

AP Statistics is an intensive course that introduces students to the major concepts and tools for drawing conclusions from data. Areas of study include data analysis, regression analysis, probability, sampling and experimentation, and statistical inference. Theory and practice involve summary statistics and graphical displays of data, correlation, linear regression, survey design and implementation, design of experiments, probability distributions, confidence intervals and hypothesis testing. Graphing calculator, statistical software, and written and oral communication skills will be developed by solving real-life problems and interpreting

the results using actual data.

SCIENCE

Course Title: Biology

Course Number: 05_1001_050

Grade Level: 9

Credits: 6

Biology I is a laboratory based course which will emphasize the scientific method and current biological techniques that will challenge students to think creatively, make critical evaluations of their own work, and provide them with a model for interpreting the world around them. Students will develop the fundamental skills of problem-solving, concise writing, expressing original ideas, reading critically, and public speaking. The course is designed as an introductory course for first year students. However, it will delve into the more complex details by examining biology at a molecular, cellular, organismal and ecological level. Therefore, not only should it complement their previous experience with the life sciences, but also intrigue and entice those students interested in a biology-related career to pursue further studies in the field of Biological Sciences.

Course Title: Scientific Inquiry and Analysis

Course Number: 05_1002_050

Grade Level: 9

Credits: 5

Scientific Inquiry and Analysis is an interdisciplinary full year course. The course emphasizes development of skills that are common to the various disciplines of science. Students will obtain proficiency in the use of graphing calculators and computers within scientific contexts. In particular, students will utilize technology for scientific data acquisition, mathematical analysis of data, and presentation of data obtained from a wide array of physical, biological, and social science contexts. Skills and procedures that are common to all laboratory sciences will be highlighted such as the scientific method, systems of measurement, unit conversions, significant figures, error analysis, laboratory reports, measurement tools and techniques, and experimental design. Additionally, the course will provide an introduction to the core concepts of physics and chemistry. Students will practice and apply a variety of methods for the collection, organization, description, and presentation of scientific data. In particular, students will use various mathematical models and techniques such as iteration, recursion, and the application of probability and statistics, to solve and analyze problems arising within the context of the sciences. The course will culminate in a student-designed, independent research project, through which students will apply skills and techniques learned in this course to analyze a real-world question.

Course Title: Chemistry

Course Number: 05_2001_050

Grade Level: 10

Credits: 6

Pre-Requisite: Successful completion of Biology and Scientific Inquiry and Analysis

Chemistry is a rigorous course intended to give the serious science student a well-rounded background in general chemistry. The student will be exposed to a variety of experiences both individually and in groups. It is designed on the principle that observation, experimentation, problem solving and reliance on mathematics is central to the development of an understanding of the subject. Hands-on activities emphasize safe laboratory practices and the aspects of applied chemistry. Topics covered include the scientific method, atomic structure, and molecular architecture, physical and chemical behavior of matter, quantitative and qualitative analysis, periodicity, laboratory technique, right-to-know and industrial chemistry. Since an accommodation to a variety of learning styles is stressed, students will be evaluated with a variety of criteria as well. Written homework, reports, class presentations, teacher-designed and standardized tests, class participation and observation of laboratory skills will be used to evaluate the student's general knowledge and academic success.

Course Title: Physics

Course Number: 05_3001_050

Grade Level: 11

Credits: 6

Pre-Requisite: Successful completion of Chemistry

Physics is an in-depth, rigorous course in which students study the behavior of the physical world. The course is designed to help students develop a broad background in general physics. Students will learn about Mechanics (motion, forces, and energy), Thermodynamics, Electricity and Magnetism, Waves, and Optics. Additional topics will be investigated as time permits. Physics emphasizes the development of reasoning and problem-solving abilities. Students will routinely utilize technology such as graphing calculators and computers for data collection and analysis, both in the classroom and in the laboratory. Hands-on laboratory experience is a fundamental part of the course, with algebra and trigonometry used extensively to analyze data. Students will learn to communicate scientifically and mathematically, in both written and oral forms, while investigating real-life phenomena.

Course Title: AP Biology

Course Number: 05_5001_999

Grade Level: 11, 12

Credits: 6

Pre-Requisite: 85 or higher in Biology and Chemistry or Biology teacher recommendation

AP Biology is designed to be the equivalent of a college introductory biology course. Three general areas of biology, molecules and cells, heredity and evolution, and organisms and populations, will be covered in detail. The two main goals of AP Biology are to help students develop a conceptual framework for modern biology and to help students gain an appreciation for science as a process. To gain conceptual understanding students must participate in scientific inquiry, recognize unifying themes that integrate the many parts of biology, and apply biological knowledge and critical thinking to environmental and social issues.

Course Title: AP Chemistry

Course Number: 05_5002_999

Grade Level: 11, 12

Credits: 6

Pre-Requisite: Successful completion of or current enrollment in Math Analysis; 85 or higher in Chemistry or Chemistry teacher recommendation

Chemistry is a rigorous course intended to give the serious science student a well-rounded background in general chemistry. The student will be exposed to a variety of experiences both individually and in groups. It is designed on the principle that observation, experimentation, problem solving and reliance on mathematics is central to the development of an understanding of the subject. Hands-on activities emphasize safe laboratory practices and the aspects of applied chemistry. Topics covered include the scientific method, atomic structure, and molecular architecture, physical and chemical behavior of matter, quantitative and qualitative analysis, periodicity, laboratory technique, right-to-know and industrial chemistry. Since an accommodation to a variety of learning styles is stressed, students will be evaluated with a variety of criteria as well. Written homework, reports, class presentations, teacher-designed and standardized tests, class participation and observation of laboratory skills will be used to evaluate the student's general knowledge and academic success.

Course Title: AP Physics C: Mechanics

Course Number: 05_5003_999

Grade Level: 12

Credits: 6

Pre-Requisite: Successful completion of or current enrollment in AP Calculus I/AB; 85 or higher in Physics or Physics teacher recommendation

This is a calculus-based college-level continuation of the Physics course. The course is designed to be equivalent to the first semester of a typical college sequence in physics for science and engineering majors. Major areas of study include kinematics, forces and motion, work and energy, systems of particles, rotational dynamics and statics, gravitation, and oscillations. The main goal of the course is to further develop students' problem solving and critical thinking skills through in-depth investigation of classical mechanics. This course emphasizes problem solving, working collaboratively, and communicating scientifically in both written and oral form. Calculus is used extensively, both in developing and unifying concepts and in problem solving. The laboratory component of this course focuses on the design of experiments, with students developing skill in measuring, organizing, and analyzing data.

Course Title: AP Physics C: Electricity & Magnetism

Course Number: 05_5004_999

Grade Level: 12

Credits: 6

Pre-Requisite: Successful completion of AP Calculus I/AB; 85 or higher in Physics C: Mechanics or Physics teacher recommendation

Electricity & Magnetism is a calculus-based college-level continuation of the Physics I course. The course is designed to be equivalent to the second semester of a typical college sequence in physics for science and engineering majors. Major areas of study include electric forces and fields, Gauss' Law, electric potential, capacitance, DC circuits, magnetic forces and fields, and induction. The main goal of the course is to further develop students' problem solving and critical thinking skills through in-depth investigation of classical mechanics and electricity & magnetism. This course emphasizes problem solving, working collaboratively, and communicating scientifically in both written and oral form. Calculus is used extensively, both in developing and unifying concepts and in problem solving. The laboratory component of this course focuses on the design of experiments, with students developing skill in measuring, organizing, and analyzing data.

Course Title: Agriculture, Food, and Natural Resources

Course Number: 05_5007_999

Grade Level: 11, 12

Credits: 5

This class is an introductory course designed to teach students about the world of agriculture, the pathways of study they may pursue, and the science, mathematics, reading, and writing components they will use throughout the CASE curriculum. Woven throughout the course are activities to develop and improve employability skills of students through practical applications. Students' experiences will involve the study of the three Components of Agricultural Education (Classroom/Lab Instruction, SAE & FFA), Communicating Today, the Science of Agriculture, and Biology in agriculture, Plants, Animals, Natural Resources, and the Mechanics of Agriculture. While surveying the opportunities available in agriculture and natural resources, students will learn to solve problems, conduct research, analyze data, work in teams, and take responsibility for their work, actions, and learning.

This is a proposed new course for the 2017-2018 school year. The availability of the course is not guaranteed. Please keep this in mind when making course selections.

Course Title: Anatomy & Physiology

Course Number: 05_5008_999

Grade Level: 11, 12

Credits: 5

Pre-Requisite: Successful completion of Biology and Chemistry

The Anatomy and Physiology course is designed to demonstrate a complete picture of the workings of the human body. The course presents mechanics, organization, interaction, and cellular functioning of all the body systems. The physiology component involves opportunities to explore, question, and analyze the many intricate relationships that occur between cells and organs of the human body. The anatomy component involves opportunities to learn the mechanics and positioning of the muscles and bones. The course introduces many major concepts that create the foundation required for college level medical science courses.

Course Title: Introduction to Sustainability

Course Number: 05_5009_999

Grade Level: 11, 12

Credits: 5

This course examines the fundamental concepts and principles of sustainability. The course is informed by a review of key philosophical and ethical principles, and incorporates sociopolitical, ecological, and economic aspects in an interdisciplinary survey of the field. Students learn to evaluate complex challenges in our efforts to balance human needs and activities with the capacities of the natural world and to identify promising solutions.

WORLD LANGUAGE

Course Title: Spanish I
Grade Level: 9

Course Number: 06_1001_999
Credits: 5

This course serves as an introduction to formal language study. Because language learning is a cumulative and cultural experience, the focus of the first level language course is to assist the student in establishing a foundation that he or she may build upon as language study continues. Interest in Hispanic culture will be stimulated by the study of culture, which provides a better understanding of the life, customs and speech of the people.

Course Title: Spanish II
Grade Level: as determined by UCVTS Placement Test
Pre-Requisite: Successful completion of Spanish I or placement test results

Course Number: 06_2001_999
Credits: 5

This intermediate course expands upon the foundations of Spanish 1 continuing the same communicative approach to further develop skills in listening, understanding, speaking, reading and writing of the Spanish language. Activities are used to expand interpersonal communication as well as interpretation and presentation skills. The course includes cultural experiences that allow students to expand their understanding of the Spanish culture through its products and practices.

Course Title: Spanish III
Grade Level: as determined by UCVTS Placement Test
Pre-Requisite: Successful completion of Spanish II or placement test results

Course Number: 06_3001_999
Credits: 5

This course is designed to continue the communicative approach and objectives of levels I and II, as well as provide for a more in depth study of the structure of the Spanish language. Students will become more proficient in interpersonal communication, interpretation and presentation skills. Cultural experiences are expanded to include more reading of authentic realia.

Course Title: Spanish IV
Grade Level: as determined by UCVTS Placement Test
Pre-Requisite: Successful completion of Spanish III

Course Number: 06_4001_999
Credits: 5

This course is designed to provide the student with a more in depth study of the Spanish language and culture. It will continue the same communicative approach but will focus on the more difficult nuances of the language and will include more reading than previous levels. Cultural experiences will be expanded to include a more in-depth study of the history, literature, art, economics and social issues of the culture. Students will use the language to make connections on topics they have learned in other core content areas. Instruction, as well as student participation, is exclusively in the Spanish language.

Course Title: AP Spanish Language and Culture
Grade Level: as determined by UCVTS Placement Test
Pre-Requisite: 85 or higher in Spanish IV or Spanish IV teacher recommendation

Course Number: 06_5001_999
Credits: 5

The AP Spanish Language course is a rigorous course of study that is equivalent to a college level course. The fundamental objective of this course is for students to achieve a high level of capability in speaking, writing, reading, and listening. Since language and culture are inextricably bound together, cultural understanding should be developed along with these four language skills. Through the year different methods and strategies will be used to practice and develop the four skills. This class is conducted entirely in Spanish and students are encouraged to participate in all classroom activities using Spanish. Students will be exposed to all kinds of materials that will help them to reinforce and expand their knowledge of Spanish. This course offers a large variety of performance options such as dialogues, debates, presentations, and interviews in which students will demonstrate their abilities to communicate proficiently on topics of personal, academic or

social nature.

Course Title: AP Spanish Literature and Culture

Course Number: 06_5002_999

Grade Level: as determined by UCVTS Placement Test

Credits: 5

Pre-Requisite: 85 or higher in Spanish IV or Spanish IV teacher recommendation

The AP Spanish Literature and Culture course uses a thematic approach to introduce students to representative texts (short stories, novels, poetry, and essays) from Peninsular Spanish, Latin American, and United States Hispanic literature. Students continue to develop proficiencies across the full range of the modes of communication (interpersonal, presentational, and interpretive), honing their critical reading and analytical writing skills. Literature is examined within the context of its time and place, as students reflect on the many voices and cultures present in the required readings. The course also includes a strong focus on cultural connections and comparisons, including exploration of various media (e.g., art, film, articles, and literary criticism).

Course Title: Linguistics

Course Number: 06_5003_999

Grade Level: 11, 12

Credits: 5

The knowledge of a World Language is a universal tool that opens gateways to human understanding and presents a new approach to dealing with the everyday realities of life. Linguistics is at the base of every World Language. Student will be introduced to the history of a language, the core of a language, the people who speak different languages and the future of language to enhance those skills honed in World Language studies. Language study enhances understandings in other disciplines: history, geography, sociology, literature, and the arts. Linguistics takes these features, recognizes the connection between each branch of learning and language, and analyzes them further. Linguistics is the bridge between language and culture. An effective World Language program recognizes individual differences in learning patterns and abilities and offers options to students with diverse needs and interests. The study of Linguistics will harness these differences. Students will use their knowledge from previous language courses to build upon different skills. They will reflect on their own language experiences. They will consider the many influences of languages. They will appreciate the entire language-learning experience.

HEALTH & PHYSICAL EDUCATION

Students will take four years of Health and Fitness. Each year, they will take three marking periods of fitness and one marking period of health education.

Course Title: Fitness I - IV

Course Number: 07_1001_999; 07_2001_999; 07_3001_999; 07_4001_999

Grade Level: 9, 10, 11, 12

Credits: 3.75

This physical fitness course continues to assist students in attaining optimal wellness physically, mentally, emotionally and socially. The program once again offers activities which incorporate the five components of fitness: cardiovascular endurance, muscular endurance, muscle strength, flexibility and body composition. The Fitnessgram will be administered to measure students' fitness levels and help set fitness goals. The students will also be introduced to various sports activities as well as "Project Adventure". These activities are designed to promote enjoyment and foster an interest in sports, physical activity, and teamwork which can last a lifetime. The students will also participate in the annual Marine Corps Youth Physical Fitness Challenge. The top finishers among the boys and girls will go on to represent the school at the annual competition for the state of New Jersey.

Course Title: Health I

Course Number: 07_1002_999

Grade Level: 9

Credits: 1.25

The freshmen health education course is designed to assist the student in attaining optimal wellness physically, mentally, emotionally, and socially. Through discussion and research, the students will become better prepared to make responsible, health-enhancing decisions, communicate effectively, and adopt health practices to reduce preventable health problems for themselves, their families, and their communities. Topics will include nutrition, weight management and eating disorders, human sexuality, conception and birth, contraception, and STDs

Course Title: Health II

Course Number: 07_2002_999

Grade Level: 10

Credits: 1.25

Pre-Requisite: Successful completion of Health I

The sophomore health education course is designed to expose the students to character education. Character education consists of the six pillars of character: trust, respect, responsibility, caring, fairness and citizenship. This will help the students make better choices and decisions in regards to health and personal well-being. Topics covered include healthy relationships, self-esteem and tolerance. Video clips, short reading excerpts and role playing will be used in the class room along with class discussions.

Course Title: Health III

Course Number: 07_3002_999

Grade Level: 11

Credits: 1.25

Pre-Requisite: Successful completion of Health II

The Junior Health course consists of CPR and First Aid training and certification. It is designed to prepare students to recognize signs and symptoms of cardiac and respiratory distress and provide care for the victims of choking, respiratory arrest and cardiac arrest. It will enable students to provide care for victims suffering from severe bleeding, musculoskeletal injuries, sudden illness, soft tissue injuries and poisoning. Principles of anatomy and physiology are integrated to enhance students' understanding of how the human body systems interact and depend on each other. Knowledge of how the human body functions normally will help students identify appropriate care to give to an ill or injured person.

Course Title: Health IV

Course Number: 07_4002_999

Grade Level: 12

Credits: 1.25

Pre-Requisite: Successful completion of Health III

Senior Health will consist of substance use/abuse, mental illness, disabilities and health care. Students will be responsible for explaining the importance of mental and emotional health and determining the emotional, social and financial impact of mental illness on the family, community and state. Students will also determine the effects of accessibility and affordability of healthcare on family, community and the global health. Also, responsible choices will be emphasized as well as a review of sex education.

INTERDISCIPLINARY STUDIES

Course Title: Financial Literacy

Course Number: 08_1001_999

Grade Level: 10

Credits: 5

Required Sophomore Course

The Financial Literacy online course is designed to meet the high school graduation requirement for personal financial literacy as set forth by the Department of Education for the State of New Jersey. Aside from mandated standards, however, financial education is critically important for our young adults. This course will focus on teaching students the skills they need to reach financial independence, maximize their net worth, and maintain a strong credit score. Credit card usage, appropriate debt, banking services, investments, budgeting, insurance, and prevention of identity theft will be explored and discussed. Students will be engaged in learning about finances in an online environment under the direction and supervision of a teacher. The online approach incorporates a variety of techniques and interactive experiences to accommodate different

learning styles. Students will have the opportunity to choose, at their own discretion, to explore more deeply into a topic, repeat a lesson, or seek personal attention from the teacher. Providing students with a sound, practical financial education will benefit them as they venture to college and work where they will be faced with managing money on their own.

Course Title: Dance Appreciation

Course Number: 08_1002_999

Grade Level: 10

Credits: 5

Required Sophomore Course

The Dance Appreciation mini-course is designed to provide UCVTS students with an appreciation of world dance forms, social dance, musical theatre, and more specifically how and why dances are created. The course has a total of 10 classes. Students have 6 online classes which delve into basic terms used in choreography for in all dance forms. The online classes will also examine ritual dance and folk dance in several cultures, and include contemporary social dance. Students are given an opportunity to share any part dance has taken in their lives. Students also have 4 in-person classes which give them the tools to create choreography in any style of their choosing. Students will break into groups to create a short dance, 12 counts of 8, which will be performed in front of their class. All classes both online and practical are aligned with the NJ Core Curriculum Content Standards in Performing Arts-Dance, to fulfill the State Requirement in Visual and Performing Arts.

Course Title: Film and Genre Studies

Course Number: 08_1003_999

Grade Level: 11, 12

Credits: 5

Film and Genre is designed for the student as a comprehensive guide to studying the language of film as a visual art form. The student examines and explores cinema through a chronological/historical approach, the introduction of terminology and techniques, the study of genres, selected classics (from the silent era to the digital age), themes, and critical analysis of film in order to attain visual literacy. Coursework focuses on acquiring and honing technical knowledge as well as developing an appreciation of the art by exploring objective and subjective aesthetics, experiences, emotions, and alternative worlds created by filmmakers. Film and Genre is not a filmmaking class per se – rather a critical exploration of visual text. However, the film student does have the opportunity to elect to create, write, direct, and produce a film, as an end-of-the-year performance assessment.

The availability of the course is not guaranteed. Please keep this in mind when making course selections.

Course Title: Introduction to Humanities

Course Number: 08_1004_999

Grade Level: 11, 12

Credits: 5

The Humanities are those branches of learning concerned with human thought and relations. These branches incorporate the study of the central expressions of human values: fine arts, literature, philosophy, history, culture, and the social sciences. Knowledge of the humanities enables students to understand the present and the future from a historical perspective. Students will also develop skills in critical reading and interpretation, analytical thinking, researching, and writing. This will be accomplished by initiating activities that promote a variety of learning styles, interdisciplinary problem solving, cooperative learning, public speaking, and technological application. These insights and skills provide a foundation for careers in many different professions and for productive and rewarding lives as educated citizens.

The availability of the course is not guaranteed. Please keep this in mind when making course selections.

Course Title: Communications Media

Course Number: 08_1005_999

Grade Level: 11, 12

Credits: 5

This course will allow students to become acquainted with contemporary media and its effects on their society. They will be given an opportunity to develop the skills and command the information necessary to function in a

high-profile job market. Today, journalists are “in the field” researching and capturing illustrative images. The news media is recreating itself into a features-driven service, and storytelling is valued as highly as straight reporting. News stories are no longer destined only for the metropolitan news editors and television/cable news anchors, but for newswires, blogs, and the Internet at large. By offering a challenging and innovative course such as Communications Media, the students also are learning the skills necessary to work behind and beyond a variety of media outlets. One of the most important real-life skills that the Communications Media class enforces is the need for teamwork.

The availability of the course is not guaranteed. Please keep this in mind when making course selections.

Course Title: Global Ethics

Course Number: 08_1006_999

Grade Level: 11, 12

Credits: 2.5

Modern societies, such as the United States, are increasingly propelled and changed by advances in science and technology. Sciences and technology are combined in modern societies to provide increasing human control over natural and social environments. Tremendous ongoing achievements have spawned great hopes, fears, and controversies. This semester course examines the sociological implications of particular scientific and technological advances. It explores alternative conceptions of the relationship of science and technology to other aspects of the social order, i.e., to the economics, politics, philosophy, and culture of the times. Specific areas of study include environmental issues, medical ethics, science and religion, the atom bomb, genetic manipulation, space travel, and mass communications. This course will utilize a variety of multi-media resources and is project-based.

The availability of the course is not guaranteed. Please keep this in mind when making course selections.