

Tri-County

Regional Vocational Technical High School



2019-2020

Academic Course Descriptions

Stephen F. Dockray, *Superintendent-Director*

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Graduation Requirements

To receive a diploma a senior must:

- Fulfill state mandated MCAS requirements
- Complete all academic, vocational/technical program & attendance requirements
- Obtain 200 credits
- Pay all outstanding bills
- Complete all discipline requirements and assignments
- Pay their \$75 class dues for every year they attend Tri-County RVTHS
- Complete a senior project (research paper, product and presentation)
- Meet the Physical Education course requirements

To meet the MassCore requirements, students are required to take the following:

| | | | | | |
|---------|---------|---------|----------------|--------------------|------------------------------|
| English | Math | Science | Social Studies | Physical Education | Vocational/Technical Program |
| 4 Years | 4 Years | 4 Years | 4 Years | 4 Years | 4 Years |

For full information on graduation requirements, see student handbook.

Requirements for Grade Promotion

Tri-County Regional Vocational Technical High School strives to promote and graduate 100% of each grade level every year. To this end, our faculty and staff work closely with students and parents to provide every possible support to ensure students reach their maximum potential. To be eligible for grade level promotions, students must earn 50 credits each year and complete courses in the following areas of study:

Grade 9 – 50 Credits

English
Math
Science
Social Studies
Elective
Career Explorations
Vocational/Technical Program
Physical Education

Grade 11 – 50 Credits

English
Math
Science
Social Studies
Elective
Vocational/Technical Program
Physical Education

Grade 10 – 50 Credits

English
Math
Science
Social Studies
Elective
Vocational/Technical Program
Physical Education

Grade 12 – 50 Credits

English
Math
Science
Social Studies
Elective
Vocational/Technical Program
Physical Education

Course Levels – Academic core courses are weighted at three levels: Advanced Placement, Honors, and College Prep. All other courses are weighted at the College Prep level.

Special Education Services: Special Education services are offered in general education classes through a co-teaching, consultation and/or support model.

~ Grade 9 courses begin with “1”, grade 10 with “3”, grade 11 with “5”, and grade 12 with “7”.

Business Technology

BU 180

Student Success I

3 credits

Freshmen year provides a unique foundational year of educational choices, personal growth and connecting today's learning to tomorrow's success. This course is designed to increase student technical literacy and ethics, identify and develop their personal strengths and interests while exploring various good-fit career paths. Prioritizing, effective social communications, and critical thinking will be advanced through various project-based learning, goal-setting, team-building, and reflection.

BU 380

Student Success II

3 credits

Sophomores are ready to draw upon their chosen shop learning and apply it by researching and developing their own ethical leadership style, analyzing various global cultures they may serve in future careers and collaborating more effectively in teams. Students will engage in various project-based learning, including self-assessments, presentations, and designing multi-media advertising. Students will use advanced software techniques that build upon skills learned in Student Success I. Professional development, networking, and team building techniques will prepare these sophomores for future school and industry success.

BU 503, 748

Social Media for Business

3 credits

Instagram, Twitter, Facebook, and YouTube are some of the social media platforms that will be studied in Social Media for Business. This course will allow students to demonstrate how businesses utilize social media to market their product, build relationships with their target markets, and earn brand loyalty. Students will design and present various mocked social media, analyze social media campaigns, develop corporate social responsibility media and categorize demographics. The course culminates with students developing a social media campaign.

BU 586, 786

Managing Your Own Business

3 credits

Thinking of owning your own business one day? Students will select a business and write their own unique business plan, incorporating the skills and principles taught throughout the course. Students will learn and present on a broad range of project-based learning for today's entrepreneurial world: competitive advantages, strategic planning, interviewing, management, marketing and sales, finance, networking, leadership, brainstorming, and problem-solving. Real-world research and various presentations will convert this classroom into a lively TC chamber of commerce!

English

EN 110

English 9 Honors

5 credits

This honors level program is for students who have above average aptitude and interest in reading and writing. Representative examples of literature include *Romeo and Juliet*, *Dr. Jekyll and Mr. Hyde*, *The Odyssey*, and selected essays, short stories, and poems. The honors course delves more deeply into topics covered in EN 112 and requires a more advanced level of usage. The honors program includes the additional expectation that students apply specific elements of style such as tense consistency, elevated diction and advanced punctuation usage to their writing. Extensive outside reading and written homework are assigned on a regular basis.

EN 112

English 9 CP

5 credits

This college preparatory course emphasizes the elements of fiction with an introduction to Shakespearean drama and poetry. Representative examples of the literature include *Romeo and Juliet*, *Of Mice and Men*, *The Odyssey*, and selected essays, short stories, and poems. The year includes a focus on basic grammar skills, and identifying

specific sentence types by structure and purpose and developing sound paragraph structure, with progression to the five-paragraph essay and the essential elements of a documented research essay. Elements of oral presentation are also covered in this course. Outside reading and written homework is regularly assigned.

EN 310

English 10 Honors

5 credits

This honors level course is for students who have above average achievement and interest in reading and writing. While many of the topics covered and skills required are the same as those covered in EN 312, the honors course delves more deeply into these topics and requires a more advanced level of usage. The honors program includes an additional expectation that students apply specific elements of style such as parallel structure, elevated diction and advanced punctuation usage to their writing. Students in this class read two dramas. Representative examples of the literature include *Lord of the Flies*, *Julius Caesar*, *Antigone*, *Catcher in the Rye*, *A Separate Peace*, selected short stories and poems. Extensive outside reading and written homework are assigned on a regular basis. **Prerequisite: A- or better in English 9 Honors or A or better in English 9 CP AND teacher recommendation.**

EN 312

English 10 CP

5 credits

This college preparatory course includes a review of the elements of plot and abstract literary elements such as figurative language, foreshadowing, diction, tone, and character development. Students identify and analyze theme in both fiction and poetry. Poetry and nonfiction writing are also covered in this course. Representative examples of the literature include *Lord of the Flies*, *Antigone*, *Catcher in the Rye*, *A Separate Peace*, *I Know Why the Caged Bird Sings* and selected essays, short stories and poems. Students will review basic sentence structure and punctuation in order to develop their presentation of complex ideas in such topical essays as character analyses and causation essays. In this course, the emphasis goes beyond initial writing and focuses on revision and editing. The year ends with the research, writing, revision, and publication of a fully documented research paper along with the preparation and delivery of a shop process demonstration. Outside reading and written homework is assigned on a regular basis.

EN 508

Advanced Placement Language and Composition

5 credits

In this course, students will write in narrative, expository, analytical, and argument form about a variety of subjects. They will define their own writing voices as they explore the rhetorical strategies and techniques employed in a diverse selection of prose styles and genres. In addition to formal essay writing that entails a multi-draft process, students will also write in informal contexts such as journal keeping and collaborative writing. Students will provide and accept feedback from peers and their teacher and use this input to revise their writing. Though most of the reading in the class is nonfiction, students may read fiction and poetry to understand how various effects are achieved by the writers' linguistic and rhetorical choices. Students will also examine graphics and visual images as they relate to written texts and as a form of text themselves. Students will develop, draft, and revise a researched argument paper that includes the analysis and synthesis of ideas from an array of sources (Senior Project Paper). Students will be expected to take the AP Language and Composition Exam in the spring. **Prerequisite: A final grade of A- or better in English 10 Honors AND teacher recommendation or A or better in English 10 CP AND teacher recommendation.**

EN 510

English 11 Honors

5 credits

This honors level course emphasizes developing personal writing style and voice by examining various writers' purpose and literary themes. While many of the topics covered and skills required are the same as those covered in EN 512, the honors course delves more deeply into these topics and requires a more advanced level of application. The full length pieces of literature are the same as those covered in EN 512 with additional informational pieces presented. This program contains highly challenging material for students who have scholarly interest and who have the time and motivation to accept responsibility for extensive outside preparation. This course prepares students for the rigor and challenges of Humanities and AP Literature and Composition offered in the senior year. In addition to the senior project paper, which is written primarily on the

student's own time, outside reading and written homework are assigned on a regular basis. **Prerequisite: A- or better in English 10 Honors or A or better in English 10 CP AND teacher recommendation.**

EN 512

English 11 CP

5 credits

This college preparatory course offers an overview of American Literature with an exploration of regional differences in dialect and tone. The course includes students researching, developing, writing, and revising their senior project papers as well as course work completed within their vocational programs. A passing grade is required on this paper in order for students to progress to senior English. This course covers the principles of argument and persuasive writing and speaking. Representative examples of the literature include *The Crucible*, *The Great Gatsby*, *The Things They Carried*, *The Adventures of Huckleberry Finn*, and selected short stories and poems with the purpose of connecting literature to history and culture. An informational paper, which is written primarily on the student's own time, outside reading and written homework are assigned on a regular basis.

EN 708

Advanced Placement Literature and Composition

5 credits

This advanced course offers interpretation and evaluation of representative examples of poetry, drama, fiction, and expository prose from various cultures and historical periods. Pieces are examined for structure, style and theme, as well as imagery and symbolism and are analyzed and evaluated on their literary and social merit. The class requires students to react and respond to the literary works by means of reflection, argumentation, and expository prose that demonstrate not only advanced skills in the application of Standard English conventions, but also elements of stylistic maturity and creativity. Representative examples of the literature include *Heart of Darkness*, *Things Fall Apart*, *Hamlet*, and *Oedipus the King*. Students will be expected to take the AP Literature and Composition Exam in the spring. **Prerequisite: A final grade of A- or better in English 11 Honors or AP Language and Composition AND teacher recommendation or A or better in English 11 CP AND teacher recommendation.**

EN 710

English 12 Honors

5 credits

In this course, students will demonstrate an understanding of historical events reflected in world literature, with special emphasis on classical works. They will also analyze the moral and philosophical questions posed in masterpieces in novels, drama, poetry, and short stories. In addition, they will prepare effective dramatic presentations, demonstrate advanced skills in application of the conventions of Standard English and write compositions using various specific methods of organization, including the production of a documented research project. Continuing preparation for the Scholastic Aptitude Test is also offered. **Prerequisite: A- or better in English 11 Honors or A- or better in AP Language and Composition or A or better in English 11 CP AND teacher recommendation.**

EN 712

English 12 CP

5 credits

This college preparatory course covers advanced standards of sentence, paragraph, and composition structure with an emphasis on real world applications such as the college essay, the resume, the employment application, and the business letter. Formal and informal oral presentations are also emphasized as well as the incorporation of multi-media into such presentations. Students will closely examine the theme of social responsibility as it relates to course materials and their lives. Representative examples of literature include "The Allegory of the Cave," *An Enemy of the People*, *The Tragedy of Macbeth*, and a number of selected short stories, articles, and poems. Outside reading and written homework are assigned on a regular basis.

EN 714

Humanities/English Honors

5 credits

This honors course is offered in conjunction with SS 704, the Social Studies component of the Humanities program. Students are introduced to literary and historical aspects of Western Civilization through extended

readings, lecture, individual, and class projects. There will be some common assessments that connect the social studies and English classes, including a common mid-year and final exam. Beginning with Ancient Greece, students read representative literature while at the same time studying major historical events in Western history. This honors program contains highly challenging material for students who have scholarly interest and who can conduct independent Internet research. Access to the Internet is required for homework assignments.

Prerequisite: A- or better in English 11 Honors or B+ or better in AP Language and Composition or B+ or better in English 11 CP AND teacher recommendation.

Mathematics

MA 120

Algebra I Honors

5 credits

In addition to the contents of the CP course, the Honors program will include a deeper exploration of the standards that focuses on analytical and abstract reasoning. The class includes a variety of applications to other fields, challenging problems to develop strong problem solving skills, and an emphasis on connecting visual, symbolic, and verbal representations of algebraic concepts. It is highly recommended for students to purchase a graphing calculator. Recommended calculator: TI-84+.

MA 121

Algebra I CP

5 credits

This course is designed for students who have basic mathematical skill with whole numbers, fractions, decimals, and percentages. The objective of this class is to learn the language, concepts, and techniques of algebra and to develop critical thinking and logical reasoning skills. Students will study the real number system and solve problems using equations, polynomial operations, factoring, rational expressions, inequalities, systems of equations, rational and irrational numbers, and the quadratic formula.

MA 123, 520

Algebra II/Trigonometry Honors

5 credits

This course is designed for students who have demonstrated significant mathematical skill in the completion of an Algebra I course. The course of study includes basic concepts of real numbers, inequalities, linear and quadratic functions, factoring with applications, rational expressions, irrational and complex numbers, exponential and logarithmic functions, trigonometry with applications, and matrices. It is highly recommended for students to purchase a graphing calculator. Recommended calculator: TI-84+. **Prerequisite for Course MA 123: B+ or better in Algebra I AND qualifying grade on the Tri-County Math Placement Test. Prerequisite for Course MA 520: B or better in Geometry Honors AND Algebra I Honors or B+ or better in Geometry CP AND Algebra I CP AND teacher recommendation.**

MA 126, 522

Algebra II CP

5 credits

When taken with Trigonometry in the senior year, this course is designed to prepare students for college level mathematics. This class will reinforce the skills taught in Algebra I and add advanced Algebraic reasoning skills necessary for the post graduate. Topics to be covered are: Linear equations, Inequality equations, radicals, complex numbers, quadratics, rational expressions, exponential and logarithmic functions, statistics and probability. It is highly recommended for students to purchase a graphing calculator. Recommended calculator: TI-84+. **Prerequisite for Course MA 126: B- or better in Algebra I AND qualifying grade on the Tri-County Math Placement Test.**

MA 188

Math Support

3 credits

This course is designed to provide enhanced preparation in Algebra. Students will be scheduled in this class, based on a variety of factors including Grade 7 MCAS and the Tri-County Math Placement Test. Guidance recommendation required.

MA 198, 398, 598, 798**Academic Support****3 credits**

This course will provide support for students who need assistance with organizational and study skills in the college preparatory environment. Guidance recommendation. Graded as “satisfactory” or “unsatisfactory”.

MA 320**Geometry Honors****5 credits**

This course is designed for any student who has successfully completed Algebra I Honors. The course covers all topics as Geometry CP, but will go into greater depth, especially in the areas of inductive and deductive reasoning, interpreting and writing proofs (both direct and indirect), congruency, similarity, right triangle trigonometry and the application of skills to practical problem solving. **Prerequisite: B or better in Algebra I Honors or A- or better in Algebra I CP AND teacher recommendation.**

MA 321**Pre-Advanced Placement Geometry Honors****5 credits**

This course is designed for any student who has successfully completed Algebra II/Trig Honors (MA 123). The Pre-AP course provides an accelerated, in-depth study of the Honors Geometry topics with additional emphasis on coordinate Geometry and Trigonometry. These additional topics will include the trigonometry of right and oblique triangles, the use of trigonometry to calculate areas with volumes, and an introduction to conic sections. It is highly recommended for students to purchase a graphing calculator. Recommended calculator: TI-84+.

Prerequisite: B or better in MA 123 Algebra II/Trigonometry Honors AND teacher recommendation.

MA 324**Geometry CP****5 credits**

This course is designed for students who have successfully completed Algebra I. Topics to be covered are: introduction to constructions, basic postulates of geometry, writing proofs, the Pythagorean Theorem, two and three dimensional shapes, parallel lines, coordinate geometry area and volume circles, and the application of skills to practical problem solving.

MA 394**MCAS Tutoring****3 credits**

This course is designed to provide enhanced MCAS preparation in Mathematics. Students will be scheduled in this class, based on Grade 8 MCAS performance, and grades 9 and 10 teacher recommendation.

MA 524**Pre-Calculus CP****5 credits**

Pre-Calculus weaves together previous study of algebra, geometry, and mathematical functions into a preparatory course for Intro to Calculus. The course focuses on mastery of critical skills and exposure to new skills necessary for success in subsequent math courses. Throughout the course, Common Core standards are taught and reinforced as the student learns how to apply the concepts in real life situations. Topics include fundamental concepts of Algebra, functions and graphs, polynomials and rational functions, exponential and logarithmic functions, trigonometric functions, analytic trigonometry, topics in trigonometry, systems of equations and inequalities, matrices and determinants, conic sections and analytic geometry, sequences. A graphing calculator (TI-84+) will be utilized throughout the course. It is highly recommended for students to purchase a graphing calculator. Recommended calculator: TI-84+. **Prerequisite: Successful completion of Algebra II (MA 126), or teacher recommendation.**

MA 585, 725**Pre-Calculus Honors****5 credits**

This course is intended for juniors and seniors who have completed Algebra II/Trigonometry. Topics covered will be linear and quadratic functions, polynomial functions, inequalities, operations with functions, exponents and logarithms, trigonometric equations, triangle trigonometry, trigonometry identities and matrices. A graphing calculator (TI-84+) will be utilized throughout the course. It is highly recommended for students to purchase a graphing calculator. Recommended calculator: TI-84+. **Prerequisite for Course MA 585: B or better in**

Algebra II/Trigonometry Honors AND B or better in Pre-AP Geometry Honors. Prerequisite for Course MA 725: Successful completion of Algebra II/Trigonometry Honors AND teacher recommendation.

MA 705

Advanced Placement Statistics

5 credits

This course will introduce students to the concepts and tools for collecting, analyzing, and drawing conclusions from data. Students will be exposed to four themes throughout the year: Exploring data, planning a study, anticipating patterns, and statistical inference. From these four themes students will observe patterns in data, devise a means to analyze data as well as develop models to draw conclusions from the data. It is highly recommended for students to purchase a graphing calculator. Recommended calculator: TI-84+. Students will be expected to take the AP Statistics Exam in the spring. **Prerequisite: A final grade of B+ or better in Algebra II/Trig Honors or B+ or better in Pre-Calculus Honors AND teacher recommendation.**

MA 707

Statistics CP

5 credits

CP statistics will help students develop their own understanding of the principles and practices of Statistics. Students will learn how to use statistics and technology to make sense of data and to make intelligent decisions based on mathematical reasoning. Students will create their own studies from data retrieved from the Internet and other sources. The course will provide an excellent foundation for college-level statistics or leave students with enough statistical knowledge to apply to everyday life in the field. The course will have four broad themes: exploring data, experimental design -- deciding what and how to measure, probability and simulation, and statistical inference. **Pre-Requisite for Course: Successful completion of Algebra II CP, or Algebra II/Trigonometry Honors or teacher recommendation.**

MA 719

Advanced Placement Calculus AB

5 credits

AP Calculus AB is a college level course in single-variable calculus that includes concepts and skills of limits, derivatives, definite integrals, and the Fundamental Theorem of Calculus. Applications of these topics will include extrema, related rates, Riemann sums, separable differential equations and slope fields as examples of mathematical modeling, and volume. Throughout the course, students will analyze concepts and solve problems graphically, numerically, analytically, and verbally and make connections between these representations. Students will be expected to take the AP Calculus AB Exam in the spring. **Prerequisite: A final grade of B+ or better in Pre-Calculus Honors AND teacher recommendation AND completion of a summer calculus assignment. Students will participate in one or both summer calculus sessions.**

MA 722

Trigonometry CP

5 credits

This course is designed for any student who has successfully completed Algebra II. The topics of study include analytical trigonometry, right triangle and circular trigonometric functions, and applications of trigonometric functions. Students will also study trigonometric identities and formulas as well as their inverses.

MA 726

Introduction to Calculus Honors

5 credits

This course is an accelerated course of the Pre-Calculus program, along with an introduction to Calculus. Topics covered will include the Pre-Calculus course including limits, derivatives as limits, the product and quotient rules, the chain rule, derivatives of trigonometric functions, implicit differentiation, and integration. Application of calculus in relation to business, social sciences, medicine, physics and biology will be incorporated in the program. A graphing calculator will be utilized throughout the course. It is highly recommended for students to purchase a graphing calculator. Recommended calculator: TI-84+. **Prerequisite: B+ or better in MA 520, Algebra II/Trigonometry Honors AND teacher recommendation.**

MA 733**Foundations of Mathematics III CP****5 credits**

A mastery-based course in Algebra, Geometry, and Statistics, designed to provide a thorough and integrated approach to mastering the applications through problem-solving techniques.

Physical Education and Health**PE 160, 360, 560, 760****Physical Education/Health****2 credits**

Physical Education is based upon the acquisition of knowledge and skills that are the foundation for engaging in physical activity. Our mission is to empower all students to sustain regular, lifelong physical activity as a foundation for a healthy, productive and fulfilling life. The Tri-County Physical Education curriculum is a sequential educational program. It is based on physical activities undertaken in an active, caring, supportive and non-threatening atmosphere in which every student is challenged and successful. We aim to provide every student with a wide variety of physical activities and challenges that will contribute to the development and maintenance of their physical, cognitive, and effective well-being. Ultimately, students will be provided with the foundation for making informed decisions that will empower them to achieve and maintain a healthy lifestyle.

Health Education aims to increase student knowledge on the topics surrounding health in their everyday lives. Through this course, students will learn content, prevention and coping strategies for a variety of topics to improve their overall social, emotional and physical health. Topics will vary depending on the grade of the student, but will include drugs, alcohol, human growth & development, sexually transmitted diseases, Signs of Suicide Prevention Program, bullying, fitness, nutrition, healthy relationships and distracted driving. Parents may request waivers from the sexual education component. Alternate assignments will be provided.

Physical Education and Health will be a requirement all four years.

PE 561, 761**Yoga, Self-Defense, and Aerobic Activities****3 credits**

This course will focus on the mind-body connection by teaching students both yoga and martial arts exercises that will help improve both physical and mental fitness. Students will learn how to concentrate and focus better as well as improve flexibility and core strength. Students will learn alternative methods of exercise such as step aerobics, Pilates, cardio kickboxing, Zumba and cardiovascular endurance.

PE 562, 762**Team and Individual Sports****3 credits**

This course is designed for students in grades 11 and 12 who enjoy team sports and individual sports. The students will develop an understanding of offensive and defensive strategies, fair competition, sportsmanship, and gamesmanship in all activities.

PE 566, 766**Total Body Conditioning****3 credits**

This class emphasizes individual fitness through a wide variety of aerobic activities and training. A basic conditioning program, which alternates aerobic dance, strength training, and aerobic activities, will be utilized. Information on a variety of health-related fitness topics will also be presented.

Science

SCI 134

Biology CP

5 credits

Science as investigation and inquiry is the major theme of this course. Microorganisms, plants, and animals (humans specifically), are investigated at all levels of living organization, from the molecules through the cell, the tissue, the organ, the individual, the population, the community, to the biosphere. A laboratory-centered program of instruction is used, in which students design/perform experiments that demonstrate the scientific method and specific scientific principles. Text materials and audio-visual aids are integrated in order to provide an insight into the major fields of modern biology. Students in this course will take the Biology MCAS exam in the Spring.

SCI 139

Biology Honors

5 credits

This course is a thorough study of biological molecules, cell structure and function, DNA and molecular genetics, classical genetics, evolution, anatomy/physiology and ecology. The pace is rapid and emphasizes a hands-on, minds-on approach to increase student involvement in their learning. Labs and activities are performed in order to illustrate conceptual material. Reading assignments extend beyond the text to encompass as much material and current research as possible. Students in this course will take the Biology MCAS exam in the spring. **Prerequisites: Students are enrolled in this course based on measures of middle school science mastery, such as science grades; performance on science placement exams; and MCAS scores. Students must be taking Algebra I Honors or Algebra II CP or Algebra II/Trigonometry Honors concurrently.**

SCI 333

Biology II CP

5 credits

This course is the second of a two year sequence in Biology which includes biochemistry, cellular biology, genetics, evolution, ecology, and anatomy/physiology. Biology II will focus on evolution, ecology, and anatomy and physiology. As a lab-based program, scientific process and laboratory skills are emphasized. Writing assignments, discussion and outside reading will be used to relate the course content to current biological issues. **Prerequisite: Successful completion of Biology I CP.**

SCI 334

Biology II Honors

5 credits

In addition to an extended coverage of the topics in Biology II (SCI 333), Biology II Honors will place a greater emphasis on biochemical relationships and scientific vocabulary. More emphasis will be placed on reading and writing in the form of formal lab reports, assessment of independent reading, and outside reading. **Prerequisites: A- in Biology I CP AND teacher recommendation.**

SCI 337, 531

Chemistry CP

5 credits

This course is primarily intended for the college bound student who may not plan to major in the field of science. The curriculum uses modeling instruction, which emphasizes active student construction of conceptual and mathematical models. Major topics covered include the SI system of measurement, the chemical and physical properties of the elements including periodicity, chemical reactions, and basic stoichiometry. The characteristics and behavior of acids and bases, solutions, liquids, and gases will also be discussed. **Prerequisite for Course SCI 337: Successful completion of Biology Honors**

SCI 340, 530

Chemistry Honors

5 credits

This course is designed for the college bound student seeking a thorough understanding of introductory chemical principles. Such a student must have demonstrated a strong ability and interest in science and mathematics. Substantial independent work is expected. The course will develop the modern atomic and kinetic theories to explain properties of elements and compounds, the three states of matter and chemical

reactions. Selected topics to be studied are gases, the mole concept, atomic structure, chemical bonding, principles of chemical reactions, molecular structure, acids and bases, and descriptive chemistry.

Prerequisites for course SCI 340: A- in Biology Honors AND teacher recommendation. Recommended math course for sophomore year: Geometry Honors or higher.

Prerequisites for course SCI 530: A- in Biology II Honors or A in Biology II CP AND teacher recommendation. Currently taking Geometry Honors or higher.

SCI 533

Living By Chemistry CP

5 credits

This course offers a survey of basic chemistry principles. It meets the laboratory science and chemistry requirements for students entering college. Topics covered are: history of chemistry, periodic nature of matter, elementary chemical calculations, chemical and physical properties, nuclear reactions, the world in which we live and the applications of chemistry in everyday life.

SCI 535, 735

Physics Honors

5 credits

This course is intended to provide students with a broad introduction to physics, to prepare them for further study of science at the college level, and to equip them to participate in public deliberation of science-related issues. Students will explore the basic laws of physics in the areas of mechanics, thermodynamics, waves and optics, electricity and magnetism, and modern physics. Using a laboratory approach to learning, this course will involve activities integrating language arts, mathematics, history, and technology with fundamental scientific principles. Emphasis will be placed on problem-solving, cooperative learning, laboratory techniques and safety, scientific methods, and technology applications. **Prerequisites: B or better in Chemistry Honors or B+ or better in Chemistry CP AND teacher recommendation; B or better in Algebra II/Trigonometry Honors.**

SCI 536

Introductory Physics CP

5 credits

This course is intended to provide students with a basic introduction to physics, to prepare them for further study of science at the college level, and to equip them to participate in public deliberation of science-related issues. Students will explore the basic laws of physics in the areas of mechanics, thermodynamics, waves and optics, and electromagnetism. Using a laboratory approach to learning, this course will involve activities integrating language arts, mathematics, history, and technology with fundamental scientific principles. Emphasis will be placed on problem-solving, cooperative learning, laboratory techniques and safety, scientific methods, and technology applications. **Prerequisite: Successful completion of Chemistry CP or Chemistry Honors.**

SCI 731

Microbiology CP

5 credits

Microbiology is a lab based science course that explores the various types of microscopic organisms, including viruses, bacteria, fungi, protozoa and helminths. Lab experiments will allow discovery of various microbial principles, such as conditions that promote growth, reproduction, identification procedures, epidemiology, immunology and pathogenic cycles of these organisms and how to protect against them. Lecture, discussions and projects will be the basis of exploring the course content and the economic value of the various microorganisms. Emphasis will be placed on the effect these organisms have at home, in vocational shops, and in the workplace. Course topics will apply to several shop areas, including but not limited to the Culinary Arts, Cosmetology, Medical Careers, Dental Careers and Early Childhood Careers. The course emphasizes problem solving, lab techniques and discovery through the collection and interpretation of data and the use of the scientific method and technology.

SCI 737

Anatomy and Physiology Honors

5 credits

This course is modeled upon a undergraduate-level post-secondary course and is specifically designed for students who are highly likely to pursue post-secondary education where knowledge of human anatomy and physiology will be required. Using a laboratory-based approach to learning, including microscopy, histology, a cat dissection and practical exams, the curriculum will also include a significant inquiry-based component,

including case studies and assessments which heavily integrate deductive reasoning, the language arts (writing formal lab reports, case studies and research papers) and technology which incorporate fundamental scientific principles. **Prerequisites: B or better in Biology I and II Honors and B or better in Chemistry Honors; or A or better in Biology I and II CP and A or better in Chemistry Double Period CP AND teacher recommendation.**

SCI 738

Advanced Placement Physics 1: Algebra-Based

5 credits

This course is intended for a student seeking a rigorous course in physics. It is intended to be a college level course, equivalent to a first-semester college course in algebra-based Physics. This course provides a systematic introduction to several topics in Physics, and emphasizes the development of a deep understanding of key foundational principles. The course covers Newtonian mechanics (including rotational dynamics and angular momentum); work, energy, and power; and mechanical waves and sound. It will also introduce electric circuits. Prior study of high school-level physics is not required. Students will be expected to take the AP Physics 1: Algebra-Based Exam in the spring. **Prerequisite: A final grade of B+ or better in Chemistry Honors AND B+ or better in Algebra II/ Trigonometry Honors AND teacher recommendation.**

SCI 739

Environmental Science CP

5 credits

Environmental Science examines 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 and/or preventing them. The course also examines fundamental thermodynamic concepts such as energy and power and explores the comparative environmental costs and benefits, including potential long term consequences, of producing energy from various sources such as fossil fuels, nuclear reactors, wood burning, solar panels, wind turbines, etc. A laboratory component allows application of the scientific method to investigate natural flows of chemicals/water/energy in Earth's subsystems, and how humans impact these natural flows and subsystems. An emphasis is placed on students using critical thinking and analytical skills to make a positive impact on the environment.

SCI 742

Forensic Science Honors

5 credits

This course bridges science-based inquiry and the criminal justice system. Forensic Science Honors integrates concepts from the areas of Biology, Chemistry and Physics, building upon these themes at an advanced level. This course utilizes lecture, extensive laboratory activities and experiments, scientific literature/case study analysis, and investigations in a forensic context which will allow students to apply the scientific method to develop their writing, problem solving and critical thinking skills in a biological context. Inquiry-based laboratory investigations and analysis play a central role in the course. Students solve mock criminal investigations using a wide range of laboratory techniques used today to process and analyze evidence. Students will also produce an Honors crime case presentation and video presentation of a crime scene. Topics covered in this course will include: crime scene analysis; physical/chemical analysis of various evidence types; advance microscopy; chromatography; hair/fiber/glass analysis; fingerprint comparison; comparative analysis; document analysis; drugs/toxicology; entomology; anthropology; blood (serology); and DNA analysis, among others. **Prerequisites: B or better in Chemistry Honors or B+ or better in Chemistry Double Period CP AND teacher recommendation.**

SCI 746

Forensic Science CP

5 credits

Forensic Science is intended to give students the opportunity to explore how scientific principles are used in crime scene investigations. In this course, study will focus on forensic science concepts: abilities to perform inquiry; basic criminal law; crime scene investigation; DNA analysis; blood splatter analysis; fingerprinting; firearm comparison; hair and fiber trace evidence and the nature of toxins. The primary emphasis will be to develop understanding of these concepts through hands-on field inquiry. In addition to lab reports, research papers and investigative reports will be assigned throughout this course.

Social Studies

SS 154

United States History I Honors

5 credits

In addition to the requirements of the college preparatory curriculum, this course presents a more challenging and in-depth investigation of the issues. An emphasis is placed on the development of reading, writing, and interpretive skills and requires extensive assignments in all of these areas.

SS 155

United States History I CP

5 credits

This course is a basic survey of the nation's history from colonial times through 1898. It covers the principle events, personalities, movements, and ideas from 1780 to 1898. Attention will be given to the following topics: the colonial period, the drafting of the Constitution, the formation of an American identity and political parties, the rise of Sectionalism and Westward Expansion, the Civil War, Reconstruction, and the transformation of American society.

SS 353

Advanced Placement United States History Part I

5 credits

This course is designed for any student who successfully completed United States History Honors I (SS 154 or SS 155). The Advanced Placement course is year one of a two-year course that provides an accelerated, in-depth study of the time period after the American Civil War through the United States' entrance into World War II. The course will focus on the development of historical thinking skills (chronological reasoning, comparing and contextualizing, crafting historical arguments using historical evidence, and interpreting and synthesizing historical narrative), and the development of students' abilities to think conceptually about the history of the United States. Students are expected to take AP United States History Part II in their junior year and the AP US History Exam the spring of their junior year. **Prerequisite: B+ or better in United States History Honors AND teacher recommendation or A- or better in United States History CP AND teacher recommendation.**

SS 354

United States History II Honors

5 credits

In addition to the requirements of the college preparatory curriculum, this course presents a more challenging and in-depth investigation of the issues. An emphasis is placed on the development of reading, writing, and interpretive skills and requires extensive assignments in all of these areas. **Prerequisite: B or better in United States History I Honors or B+ or better in United States History I CP AND teacher recommendation.**

SS 355

United States History II CP

5 credits

This course is a basic survey of the period after the Civil War through the end of the Second World War. It covers the principle events, personalities, movements, and ideas from 1870 to 1945. Attention will be given to the following topics: Industrialization, America's entrance onto the world stage, the economic conditions of the 1920s and 1930s, and the American role in World War II.

SS 549, 757

Psychology

3 credits

This course is a basic survey of the scientific study of behavior and mental processes. It includes the investigation of the biophysical, cognitive, developmental, and social-emotional analyses of the human psyche. Students are exposed to the psychological facts, principles, and phenomena associated with each of the major subfields within psychology. They also learn about the ethics and methods psychologists use in their science and practice. Emphasis will be placed on research methods, stages in childhood and adolescence, how the brain works, altered states of consciousness, psychological testing, and psychological disorders.

SS 553**Advanced Placement United States History Part II****5 credits**

This course is designed for any student who successfully completed AP United States History Part I. It is the second year of a two-year course that provides an accelerated, in-depth study of the time period World War II to the present day. This course will continue to focus on the development of historical thinking skills (chronological reasoning, comparing and contextualizing, crafting historical arguments using historical evidence, and interpreting and synthesizing historical narrative), and the development of students' abilities to think conceptually about the history of the United States. Students are expected to take the AP United States History Exam in the spring. **Prerequisite: B or better in AP United States History Part I AND/OR teacher recommendation.**

SS 555, 755**Street Law****3 credits**

This course is a basic survey of contemporary issues and events in American jurisprudence. It includes the investigation of controversial topics and rulings that have shaped American society. It is intended to provide students with an opportunity to study the legal, judicial, law enforcement, and corrections systems of the United States. The class will focus on constitutional law, civil and criminal laws, court procedures, and civil rights, while focusing on specific topics aimed at giving students a better understanding of the law and how it affects their lives.

SS 557**United States History III CP****5 credits**

This course is a basic survey of the period after World War II to the present. It covers the principle events, personalities, movements, and ideas from 1945 to the present. Attention will be given to the following topics: the role of America in rebuilding the world after the Second World War, the creation of the Cold War, the Civil Rights Movement, political and social unrest at home, and the dawn of the 21st century.

SS 558**United States History III Honors****5 credits**

In addition to the requirements of the college preparatory curriculum, this course presents a more challenging and in-depth investigation of the issues. An emphasis is placed on the development of reading, writing, and interpretive skills and requires extensive assignments in all of these areas. **Prerequisite: B or better in United States History II Honors or B+ or better in United States History II CP AND teacher recommendation.**

SS 702**World History Honors****5 credits**

In addition to the requirements of the college preparatory curriculum, this course will examine the influence of world events from 1500-1900 on contemporary world crises, and analyze their cause/effect relationships through independent readings as well as individual and group projects. **Prerequisite: B or better in United States History III Honors, or B or better in AP United States History Part II, or B+ or better in United States History III CP AND teacher recommendation.**

SS 704**Humanities/World History Honors****5 credits**

This Honors class is offered in conjunction with EN 714, the English component of this course. Students are introduced to the history of Western society and culture through text work, primary source material, visual and other resources, with particular focus on art, sculpture, and architecture. Beginning with the required summer reading books on Minoan and Mycenaen cultures, students will study the evolution of Western society through the Middle Ages. There will be some common assessments that connect the social studies and English classes, including a common mid-year and final exam. Access to Internet required for homework assignments. **Prerequisite: B or better in United States History III Honors, or B or better in AP United States History Part II, or B+ or better in United States History III CP AND teacher recommendation.**

SS 706**World History CP****5 credits**

This course is a basic survey of world events from the Renaissance through the Napoleonic era. It covers the principle events, personalities, movements, and ideas of the era and their relationship to contemporary world crises. Attention will be given to the following topics: the Renaissance, the Reformation, Absolutism, and the Enlightenment.

Additional Electives**582, 782****AP Seminar****3 credits**

Students will complete long term and short-term assignments working in conjunction with the teacher(s) of their AP course(s). Prerequisite: Students must be enrolled in at least one AP course to take this elective.

MU 592, 792**Recording, Engineering, and Production****3 credits**

This course focuses on the art and science of capturing and shaping sound toward a final product. Students will learn the basics of recording and engineering, and how to configure a home studio for specific results. Students will learn principles of sound and signal transfer that are applicable to home recording regardless of which recording devices and software programs are used outside the classroom. Students will use class time to work on demos, and by the end of the course will be able to:

- know how to set up a home studio
- understand the basics of recording
- identify and use specific recording techniques
- complete projects using specific editing, mixing, and mastering techniques

MU 594, 794**A Capella****3 credits**

The human voice is the original musical instrument. This course focuses on training that instrument to perform with others. Students will sing with and for peers, and perform publicly once per quarter. The ability to play an instrument or read music notation is not required, however, students must be able to sing by ear (match pitch).

By the end of the course, students will be able to:

- understand basic voice projection
- sing collaboratively with others
- understand voice parts and basic voice-leading
- exude a stage presence

MU 596, 796**Sound and Music Appreciation****3 credits**

Music is a human expression common to all cultures and all times. What makes people respond to the music made by their peers, however, is another thing altogether. This course will focus on the historical and cultural aspects of listening to music in all its varieties. Students are expected to develop and express (orally and in writing) critical thoughts beyond merely liking or disliking particular songs, genres, and artists. Students will also explore the principles of hearing, properties of sound, and acoustic architecture. By the end of the course, students will be able to:

- identify and explain cyclical themes in popular music across time
- discuss historical concepts such as “the musical genius”, “the tortured artist” and “the problematic artist”
- identify and explain the factors affecting sound production and reception

MU 599, 799**Basic Piano Keyboard and Guitar****3 credits**

Communicating musical ideas on instruments is integral to the songwriting and performing arts. Students in this course will learn basic piano and guitar techniques to accomplish those specific goals. By the end of the course, students will be able to:

- play major, minor, and seventh chords on both instruments
- play melody lines on both instruments
- construct patterned chord changes
- transpose knowledge about one instrument's system to the other

Enrollment in Courses: Courses selected will be assigned on a space available basis.

Statement of Philosophy

Successful education is an on-going, ever-changing learning process involving students, families, faculty, administrators, and School Committee members, working together to provide a culture of excellence, responsibility, safety, and respect. This process fosters citizenship, social awareness, creativity, self-respect, and a desire to pursue further education. Tri-County Regional Vocational Technical High School offers students opportunities for training and skill development that lead to rewarding employment and provide a well-rounded education that inspires life-long learning. By developing students' abilities through diverse curricula, including a wide range of instructional settings, Tri-County strives to bring students to their highest potential in the attainment of academic and vocational-technical excellence. Tri-County encourages students to engage in individual, group, and team activities by offering a variety of co-curricular and extra-curricular activities. In conjunction with the academic and vocational-technical curricula, these activities foster productive and responsible citizenship in today's technical society. To support this philosophy, Tri-County maintains the following goals:

- To ensure that students possess the ability to access information, demonstrate interpersonal skills, and use resources and technology.
- To promote literacy, critical-thinking, intellectual curiosity, and life-long learning.
- To develop citizens who demonstrate social responsibility, responsible decision-making skills, a sound work ethic, and a sense of community.
- To prepare students for entry into the workforce and/or the pursuit of postsecondary education.
- To encourage incoming students to explore various traditional and nontraditional areas.
- To integrate learning between academic and vocational areas.
- To provide a safe and cooperative learning environment for all students and staff.
- To provide cooperative education programs, adult education, and extracurricular activities.
- To promote parental involvement and communication.
- To provide meaningful opportunities for professional and staff development.
- To provide extensive student support services.

The Tri-County Regional Vocational Technical School District is an equal opportunity employer and co-educational high school and does not discriminate because of race, color, sex, gender identity, religion, national origin, sexual orientation, or disability in its employment policies, in the enrollment of students, or in eligibility for programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Title IX of the 1972 Educational Amendments, and Section 504 of the Rehabilitation Act of 1973. To contact the Title VI or Title IX Coordinator call or write Michael Procaccini, Principal, Tri-County RVTHS, 147 Pond Street, Franklin, MA 02038, 508-528-5400. To contact the 504 Coordinator call or write Scott O'Brien, Head of Guidance, Tri-County RVTHS, 147 Pond Street, Franklin, MA 02038, 508-528-5400.