the education COOPERATIVE

# COURSE CATALOGUE

## TEC High School

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# Academic Content

The Education Cooperative Mission Statement:

# We believe…

- inter-district collaboration strengthens all participants and offers the opportunity to do more than one district can do individually;
- each student learns differently and should be provided with learning experiences designed to optimize individual potential to meet their personal goals;
- data-driven student centered decisions guide planning and practice;
- high expectations are integral to student achievement;
- it is our responsibility, along with students and families, to prepare our students to be life-long learners as contributing members of a global 21st century society;
- education is the shared responsibility among the student, the family, the school and the communities;
- hard work, effort and responsibility are fundamental to academic success;
- a school culture, which embraces diversity, change, equity, risk-taking and shared decision making is the catalyst for change;
- TEC and its member districts work in a proactive partnership to anticipate and address emerging needs;
- TEC's responsibility is to provide the environment for positive academic, physical, social, emotional and aesthetic growth of our students
- in supporting educators with a comprehensive array of professional development opportunities to improve social outcomes.

# English Department Courses & Course Descriptions

**English Department Core Courses:**

- English Language Arts I
- English Language Arts II
- English Language Arts III
- English Language Arts IV

**English Department Elective Courses:**

- American Literature/History
- Assisted Reading
- Composition
- Creative Writing
- Corrective Reading
- English Language Proficiency
- Etymology
- Literature of a Genre
- Language Arts Laboratory
- Public Speaking
- Research/ Technical Writing
- Strategic Reading
- World Literature

## English Department Course and Course Descriptions:

*English/Language Arts I:*

English/Language Arts I courses build upon students' prior knowledge of grammar, vocabulary, word usage, and the mechanics of writing and usually include the four aspects of language use: reading, writing, speaking, and listening. Typically, these courses introduce and define various genres of literature, with writing exercises often linked to reading selections.

*English/Language Arts II:*

English/Language Arts II courses usually offer a balanced focus on composition and literature. Typically, students learn about the alternate aims and audiences of written compositions by writing persuasive, critical, and creative multi-paragraph essays and compositions. Through the study of various genres of literature, students can improve their reading rate and comprehension and develop the skills to determine the author's intent and theme and to recognize the techniques used by the author to deliver their message.

*English/Language Arts III:*

English/Language Arts III courses continue to develop students' writing skills, emphasizing clear, logical writing patterns, word choice, and usage, as students write essays and begin to learn the techniques of writing research papers. Students continue to read works of literature, which often form the backbone of the writing assignments. Literary conventions and stylistic devices may receive greater emphasis than in previous courses.

*English/Language Arts IV:*

English/Language Arts IV (12th grade) courses blend composition and literature into a cohesive whole as students write critical and comparative analyses of selected literature, continuing to develop their language arts skills. Typically, students primarily write multi-paragraph essays, but they may also write one or more major research papers.

## English Department Elective Courses and Course Descriptions:

*American Literature/History:*

American Literature/History courses integrate the study of American literature with an overview of U.S. history. These courses may also include other aspects of American culture, such as art or music. A two-year sequence or two-period per day class may be required to cover the same objectives as would be covered separately in U.S. History Overview and American Literature.

*Assisted Reading:*

Assisted Reading courses offer students the opportunity to focus on their reading skills. Assistance is targeted to students' particular weaknesses and is designed to bring students' reading comprehension up to the desired level or to develop strategies to read more efficiently.

*Composition:*

Composition courses focus on students' writing skills and develop their ability to compose different types of papers for a range of purposes and audiences. These courses enable students to explore and practice descriptive, narrative, persuasive, or expositive styles as they write paragraphs, essays, letters, applications, formal documented papers, or technical reports. Although composition courses may present some opportunities for creative writing, their focus usually remains on nonfiction, scholarly, or formal writing.

*Creative Writing:*

Creative Writing courses offer students the opportunity to develop and improve their technique and individual style in poetry, short story, drama, essays, and other forms of prose. The emphasis of the courses is on writing; however, students may study exemplary representations and authors to obtain a fuller appreciation of the form and craft. Although most creative writing classes cover several expressive forms, others concentrate exclusively on one particular form (such as poetry or playwriting).

*Corrective Reading:*

Corrective Reading courses offer diagnostic and remedial activities designed to correct reading difficulties and habits that interfere with students' progress in developing reading skills and understandings. Activities are chosen to increase or improve students' reading comprehension, reading technique, and general literacy skills.

*English Proficiency Development:*

English Proficiency Development courses are designed to assist students in acquiring the skills necessary to pass proficiency examinations.

*Etymology:*

Etymology course involves study of the origin (roots and derivations) and meanings of English language words. Students use dictionaries to find new words, their meanings, and apply them in group word games (Scrabble, Boggle, Bananagrams)

*Language Arts Laboratory:*

Language Arts Laboratory courses provide instruction in basic language skills, integrating reading, writing, speaking, and listening, while placing greater emphasis on the progress of individual students. Course content depends upon students' abilities and may include vocabulary building, improving spelling and grammar, developing writing and composition skills, reading silently or aloud, and improving listening and comprehension abilities.

*Literature of a Genre:*

These courses have the same aim as general literature courses (to improve students' language arts and critical-thinking skills), focusing on one or several genres, such as poetry, essay, biography, short story, drama, and so on. Students determine the underlying assumptions and values within the selected works and also examine the structure, techniques, and intentions of the genre being studied. Oral discussion is an integral part of these genre-oriented courses, and written compositions are sometimes required.

*Public Speaking:*

Public Speaking courses enable students, through practice, to develop communication skills that can be used in a variety of speaking situations (such as small and large group discussions, delivery of lectures or speeches in front of audiences, and so on). Course topics may include (but are not limited to) research and organization, writing for verbal delivery, stylistic choices, visual and presentation skills, analysis and critique, and development of self-confidence.

*Research/Technical Writing:*

Research/Technical Writing classes prepare students to write research papers and/or technical reports. These classes emphasize researching (primary and secondary sources), organizing (material, thoughts, and arguments), and writing in a persuasive or technical style.

*Strategic Reading:*

Strategic Reading courses are intended to improve a student's vocabulary, critical-thinking and analysis skills, or reading rate and comprehension level. Although these courses typically emphasize works of fiction, they may also include works of nonfiction (including textbooks). Strategic Reading courses often have a time-management focus, offering strategies for note-taking or for understanding and evaluating the important points of a text.

*World Literature:*

World Literature courses use representative literature selections from ancient and/or modern times from countries around the world. Students improve their critical-thinking skills as they comprehend the diversity of literary traditions and the influences of those traditions. Oral discussion is an integral part of literature courses, and written compositions are sometimes required.

# History Department Courses & Course Descriptions

**History Department Core Courses:**

- World History I
- World History II
- US History I
- US History II

**History Department Elective Courses:**

- Contemporary World Issues
- Criminal Justice
- Philosophy
- US Humanities I and II

**History Department Core Course Description:**

*World History I:*

World History I explores topics of major historical significance from the rise of Islam through the Renaissance/Reformation. Students will have the opportunity to investigate topics and/or geographical areas of personal interest, while also being presented with essential themes, questions, and subject matter tied to the revised 2018 Massachusetts History and Social Science content standards.

*World History II:*

World History II invites students to explore a variety of historical, political, social, economic, and intellectual topics ranging approximately from the time of the Scientific Revolution/Enlightenment through the present day. Students are encouraged to explore events, regions, and issues of particular personal interest, while also being exposed to those events and essential issues of greatest impact in the development of the modern world in alignment with the revised 2018 Massachusetts History and Social Science content standards.

*US History I:*

US History I offers a chronological examination of political, economic, and social developments from the Revolutionary Period through Reconstruction. Students are given the opportunity to delve more deeply into selected relevant topics of choice, while also being presented with key themes, trends, and content topics aligned with the revised 2018 Massachusetts History and Social Science content standards.

*US History II:*

US History II exposes students to significant events, trends, and political, economic, social, technological, and cultural developments as delineated in the revised 2018 Massachusetts History and Social Science content standards spanning from the late 19th century to the present day. Students will be allowed to explore relevant topics of particular personal interest, but will also be expected to identify and analyze the essential historical connections that have shaped our modern society.

**History Department Elective Courses:**

*Contemporary World Issues:*

Contemporary World Issues courses enable students to study political, economic, and social issues facing the world, with or without an emphasis on the United States. These courses may focus on current issues, examine selected issues throughout the 20th century, and look at historical causes or possible solutions.

*Criminal Justice:*

Criminal Justice offers students an overview of the American legal system, with particular emphasis on all stages and agencies involved in criminal cases. Students also analyze crime patterns, the correctional system, as well as connections with broader sociological trends. Students will gain familiarity with critical Constitutional concepts, have the opportunity to participate in mock trials, and examine relevant topics of high personal interest.

*Philosophy:*

Philosophy invites students to explore core philosophical disciplines, including ethics, epistemology, aesthetics, and political philosophy. Students are also given the opportunity to explore individual philosophers or schools/branches of philosophy of high personal interest.

*US Humanities (I and II):*

US Humanities (I and II) offers students the opportunity to explore US history and American literature simultaneously. Students are encouraged to consider a series of essential questions exploring themes and ideas that they themselves find most engaging and relevant to their own lives and experiences. US Humanities I covers events, trends, and literature related to early American history through World War I. US Humanities II begins with the 1920s and reaches through the present day.

# Math Department Courses & Course Descriptions

**Math Department Core Courses:**

- Algebra I
- Algebra II
- Geometry
- Math 8

**Math Department Electives Courses:**

- General Mathematics
- Informal Mathematics
- Mathematics Proficiency Development
- MCAS Prep
- PreCalculus
- Senior Math
- Trigonometry

**Math Department Core Courses and Course Descriptions:**

*Algebra I:*

The Algebra 1 course focuses on transferring concrete mathematical knowledge to more abstract algebraic generalizations.Topics include the study of multiple representations of linear and nonlinear functions, mathematical concepts for working with rational numbers, various expressions, analyzing and solving linear equations & inequalities, data analysis, probability, statistics, and polynomials. Students will practice applying their learning to real-world concepts and tasks. Manipulatives, technology, use of computers, and graphing calculators may be used to expand upon these areas of study as applicable.

*Algebra II:*

The Algebra II course focuses on graphing, interpreting and transforming functions, including linear, absolute value, quadratic, and polynomial functions. This course is designed to build on algebraic and geometric concepts. It develops advanced algebra skills such as systems of equations, advanced polynomials, imaginary and complex numbers, quadratics, and trigonometric functions. It also introduces matrices and their properties. Students will apply their understanding to everyday situations through new problem-solving techniques. Manipulatives, technology, use of computers, and graphing calculators may be used to expand upon these areas of study as applicable.

*Geometry:*

The Geometry course includes an in-depth analysis of plane, solid, and coordinate geometry as they relate to both abstract mathematical concepts as well as real-world problem situations. Topics include logic and proof, parallel lines and polygons, perimeter and area analysis, volume and surface area analysis, similarity and congruence, right triangle trigonometry, writing proofs to solve (prove) properties of geometric figures, and analytic geometry. Inductive and deductive thinking skills are used in problem solving situations, and applications to the real world are provided. Emphasis will be placed on developing critical thinking skills as they relate to logical reasoning and argument. Manipulatives, technology, use of computers, and graphing calculators may be used to expand upon these areas of study as applicable.

*Math 8:*

The Math 8 course is designed to increase students' foundational math skills and prepare them for Algebra I by covering a variety of topics, such as properties of rational numbers (i.e., number theory), ratio, proportion, estimation, exponents and radicals, the rectangular coordinate system, linear functions, formulas, and solving first-degree equations and inequalities -- with the application of these skills and concepts in a problem-solving context.

**Math Department Electives and Course Descriptions:**

*General Mathematics:*

General Math courses reinforce and expand students' foundational math skills, such as arithmetic operations using rational numbers; area, perimeter, and volume of geometric figures, congruence and similarity, angle relationships, the Pythagorean theorem, the rectangular coordinate system, sets and logic, ratio and proportion, estimation, formulas, solving and graphing simple equations and inequalities.

*Informal Mathematics:*

Informal Mathematics courses emphasize the teaching of mathematics as problem solving, communication, and reasoning, and highlight the connections among mathematical topics and between mathematics and other disciplines. These courses approach the teaching of general math, pre-algebra, and pre-geometry topics by applying numbers, and algebraic and geometric concepts and relationships to real world problems

*Mathematics Proficiency Development:*

Mathematics Proficiency Development courses are designed to assist students in acquiring the skills necessary to pass proficiency examinations.

*MCAS Prep:*

MCAS preparation courses provide students with activities in analytical thinking and with the skills and strategies associated with standardized test taking (such as the PSAT, SAT, and ACT). Topics covered include strategies for arithmetic, algebra, geometry, and quantitative comparison problems as well as time management, scoring procedures and calculator usage.

*PreCalculus:*

The PreCalculus course is designed to cover advanced topics in Algebra ranging from polynomial, rational, and exponential functions to conic sections. Topics typically include the study of complex numbers; polynomial, logarithmic, exponential, rational, right trigonometric, and circular functions, and their relations, inverses and graphs; trigonometric identities and equations; solutions of right and oblique triangles; and limits and continuity. This course weaves together previous study of algebra, geometry, and mathematical functions into a preparatory course for calculus, focusing on mastery of critical skills and exposure to new skills necessary for success in subsequent math courses. Manipulatives, technology, use of computers, and graphing calculators may be used to expand upon these areas of study as applicable.

*Senior Math:*

The Senior math course reinforces general math skills, extends these skills to include some pre-algebra and algebra topics, and uses these skills in a variety of practical, consumer, business, and occupational applications. Course topics may include rational numbers, measurement, basic statistics, ratio and proportion, basic geometry, formulas, and simple equations. In this course students apply these skills to consumer problems and situations such as budgeting, banking, personal income, and economics.

*Trigonometry:*

The Trigonometry course focuses on analyzing and graphing mathematical functions, specifically sine, cosine, and tangent. There is an emphasis on verification of trigonometric identities using all of the basic trigonometric identities, on helping students develop skills sufficiently to write and use the definition of trigonometric functions; on sketching the graph of the trigonometric functions; proving identities; solving trigonometric equations; learning and applying the law of the sines and cosines.

# Science Department Courses & Course Descriptions

**Science Department Core Courses:**

- Anatomy and Physiology
- Biology
- Environmental Science

**Science Department Elective Courses:**

- Marine Science
- Zoology

**Science Department Core Courses:**

*Anatomy and Physiology:*

This course is an exploration of the systems of the human body. Discussion begins on the cellular level which leads to an examination of body tissues. Each body system is then analyzed by concentrating on two main components. These components are the anatomy of structures present in each body system and physiology or the function of those structures. Models and diagrams of each body system are studied to give the student an overall picture of structures discussed. The student is encouraged to look for the interconnectedness of the systems of the body and to discover the miraculous events that take place within the body. All units covered coincide with the revised 2016 Massachusetts content standards.

*Biology:*

This course is a general survey of all living things on Earth. Life is explored from the cellular level, including key processes that make life possible, to the multicellular level, including the rich diversity of living things that exist on Earth. The structure and function of DNA is investigated to gain a better understanding of genetics. Natural selection and the relationships between living things and their environment are examined. Living as well as preserved specimens will be studied in class. Microscopes are used to observe the many microscopic living things. Students are encouraged to look for the interconnectedness between all living things and to discover how living things function. All units covered coincide with the revised 2016 Massachusetts content standards.

*Environmental Science:*

This course is an exploration of the Earth and the interrelationships between all of its living inhabitants. Natural cycles and processes will be discussed in order to obtain a deeper understanding of the many ways that human activity can affect them. The relationships between living things and their ecosystems will be a major focus of this course. Case studies of past and present environmental issues will be used to make students aware of all sides of controversial issues and their potential solutions. Using a variety of sources, students will be encouraged to remain current on environmental issues. All units covered coincide with the revised 2016 Massachusetts content standards.

**Science Electives and Course Descriptions:**

*Marine Science:*

This course is an exploration of the Biology, Chemistry and Physics of the oceans and land. Invertebrate animals are discussed in the first half of the school year, and vertebrate animals are discussed in the second half of the year. Each group of animals is looked at on the system level. Key adaptations and unique structures that enable specific animal groups to survive in various environments are examined. The internal anatomy of each group is examined in detail. Natural cycles and processes that occur in oceans and on land will be discussed in order to obtain a deeper understanding of the many ways that human activity can affect all living things. Case studies of past and present environmental issues will be used to make students aware of all sides of controversial issues and their potential solutions. Students will be encouraged to remain current on environmental issues.All units covered coincide with the revised 2016 Massachusetts content standards.

*Zoology:*

This course is an in-depth investigation into the animal kingdom. Invertebrate animals are discussed in the first half of the school year, and vertebrate animals are discussed in the second half of the year. Each group of animals is looked at on the system level. Key adaptations and unique structures that enable specific animal groups to survive in various environments are examined. Living as well as preserved specimens are studied in class. The internal anatomy of each group is examined in detail. Students are encouraged to compare various animal groups to discover relationships and to better appreciate the diversity present in the animal kingdom.

# Elective Courses & Course Descriptions

**Elective Courses and Course descriptions:**

- Academic Support
- Animal Systems- Independent Study
- Animal Systems- Other
- Art Appreciation
- Community Service
- Cooking 101
- Computer Science Principles
- Creative Art-Drawing/Painting
- Fishing, Gardening and Outdoor Recreation
- Gardening
- Italian Language and culture
- Miscellaneous- Independent Study
- Music History and Appreciation
- Safety and First Aid
- Seminar (Required)
- Textiles
- Theatre Arts
- Yoga

**Elective Courses and Course Descriptions:**

*Academic Support:*

Academic Support with a Special Education Teacher provides specialized instruction in areas of the curriculum individualized for the students.

*Animal Systems—Independent Study:*

Courses in Animal Systems—Independent Study, often conducted with instructors as mentors, enable students to explore topics of interest related to animal systems. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.

*Animal Systems—Other:*

Other Animal Systems courses.

*Art Appreciation:*

Art Appreciation provides exposure to major artistic trends, periods, and movements in the Western tradition, with opportunities for exploration of art in non-Western cultures as well. The course invites students to consider essential questions of aesthetics and to research specific works or artists of high personal interest.

*Community Service:*

Community Service courses provide students with the opportunity to volunteer their time, energy, and talents to serve a community project or organization. These courses are usually (but not always) conducted with a seminar component, so that students can use their volunteer experiences to learn how to solve problems, make decisions, and communicate effectively.

*Cooking 101:*

Course on the basics of culinary skills aimed to provide students an opportunity to share recipes, try recipes, learn from each other and familiarize themselves around the kitchen. Culminating project to include student cooking samples and recipe book.

*Computer Science Principles:*

Computer Science Principles courses provide students the opportunity to use programming, computational thinking, and data analytics to create digital artifacts and documents representing design and analysis in areas including the Internet, algorithms, and the impact that these have on science, business, and society.

*Creative Art—Drawing/Painting:*

Creative Art—Drawing/Painting courses cover the same topics as Creative Art—Comprehensive courses, but focus on drawing and painting. In keeping with this attention on two-dimensional work, students typically work with several media (such as pen-and-ink, pencil, chalk, watercolor, tempera, oils, acrylics, and so on), but some courses may focus on only one medium.

*Fishing, Gardening, and Outdoor Recreation:*

Fishing, Gardening, and Outdoor Recreation offers students opportunities to be outside to fish in various freshwater ponds in the area, to plant and maintain a vegetable and/or flower garden on the school grounds, and to engage in an array of yard games, including frisbee, bocce, volleyball, croquet, and more.

*Gardening:*

This course is an elective designed to provide students with the ability to grow all types of vegetable crops. It involves steps necessary involved in growing a garden. Preparing the soil, selecting types and locations within the garden for various vegetables, care of seedlings/growing plants, and harvesting are covered. Concepts of sustainable agriculture are discussed and implemented.

*Italian Language and Culture:*

Italian Language and Culture exposes students to the highlights of Italian art, architecture, music, literature, culture, cuisine, and more. Students will also be learning common conversational expressions geared toward travel, making acquaintances, and building recognition of culturally unique idioms.

*Miscellaneous— Independent Study:*

Miscellaneous—IndependentStudy courses, typically organized as a mentorship with a teacher or outside professional, enable students to conduct investigations related to their field(s) of interest.

*Music History and Appreciation:*

Music History and Appreciation provides students the opportunity to explore diverse musical genres, trace the development of distinct musical periods, and share their own musical preferences. Students will be encouraged to delve more deeply into topics of high personal interest. They will also be given a grounding in the foundational content of music in the Western tradition and exposure to a variety of world music traditions.

*Safety and First Aid:*

Safety and First Aid courses provide specialized instruction in first aid techniques, cardiopulmonary resuscitation (CPR), relief of obstructed airways, and general safety procedures and behaviors. These courses may include such topics as an overview of community agencies and hotlines providing emergency care and information and opportunities for first aid and CPR certification.

*Seminar (Required):*

Seminar courses vary widely, but typically offer a small peer group the opportunity to investigate areas of interest. Course objectives may include improvement of research and investigatory skills, presentation skills, interpersonal skills, group process skills, and problem-solving and critical-thinking skills. Seminars aimed at juniors and seniors often include a college and career exploration and planning component. Recognizing personal strengths, understanding and enhancing executive function skills, and foundational financial literacy skills are also routine components of Seminar.

*Textiles:*

Textiles courses teach the same lessons as Creative Art—Comprehensive courses, but do so with a focus on textiles. These courses may survey a wide range of crafts and art forms using textiles, or they may focus on only one type of art form; possibilities include weaving, macramé, quilting, batik, stitchery, and so on.

*Theatre Arts:*

Theatre arts courses focus on the study and performance of drama including musical theatre. These courses review a wide range of scripted materials, such as plays, screen plays, teleplays, readers' theatre scripts, dramatic criticism, creation of original dramatic works, and the role of dramatic arts in society. In addition, students will work collaboratively on performances.

*Yoga:*

Yoga is offered at all levels to help students develop greater strength, flexibility, and body awareness. Students will also enjoy the benefits of developing habits of mindful breathing and other techniques that promote mental and physical relaxation.