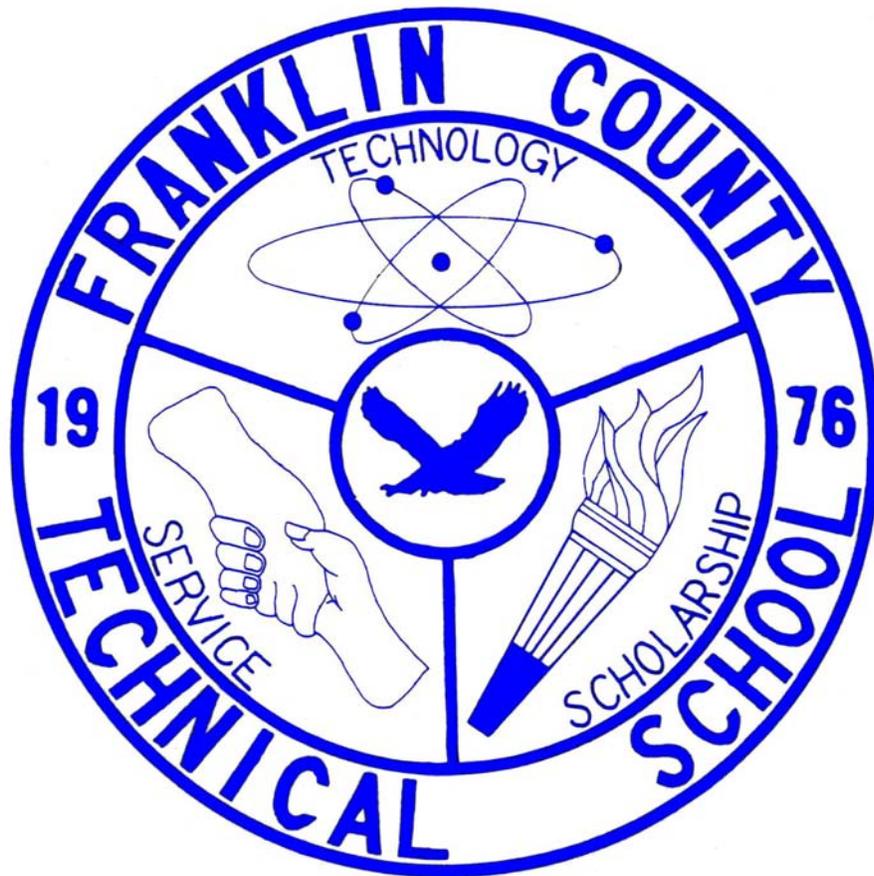


FRANKLIN COUNTY TECHNICAL SCHOOL  
PROGRAM OF STUDIES  
2016-2017



82 Industrial Boulevard  
Turners Falls, MA 01376  
413-863-9561  
Fax 413-863-2816, 413-863-4231

## ACCREDITATION STATEMENT

Franklin County Technical School is accredited by the New England Association of Schools and Colleges, Inc., a non-governmental, nationally recognized organization whose affiliated institutions include elementary schools through collegiate institutions offering post-graduate instruction.

Accreditation of an institution by the New England Association indicates that it meets or exceeds criteria for the assessment of institutional quality periodically applied through a peer group review process. An accredited school or college is one which has available the necessary resources to achieve its stated purposes through appropriate educational programs. This school shall substantially do so, and shall give reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation.

Accreditation by the New England Association is not partial but applies to the institution as a whole. As such, it is not a guarantee of the quality of every course or program offered or of the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution.

Inquiries regarding the status of an institution's accreditation by the New England Association should be directed to the administrative staff of the school or college. Individuals may also contact the:

NEW ENGLAND ASSOCIATION OF SCHOOLS AND COLLEGES  
3 BURLINGTON WOODS DRIVE  
BURLINGTON, MA 01803-4514

FRANKLIN COUNTY TECHNICAL SCHOOL  
PROGRAM OF STUDIES - 2016-2017

ADMINISTRATION

Richard Martin – *Superintendent*  
Shawn Rickan – *Principal*  
Jocelyn Croft – *Vocational/Technical/Co-Op Coordinator*  
John D. Carey – *Assistant Principal*  
Nathan May – *Director of Pupil Personnel Services/Special Education/Title I*  
Russ Kaubris - *Business Manager*

SCHOOL COMMITTEE

Lloyd Szulborski - Bernardston  
Laura Earl - Buckland  
Nicole Slowinski- Colrain  
Stephanie Recore - Conway  
Katherine James - Deerfield  
Robert Bitzer - Erving  
Clifford Hatch - Gill  
Larry D. Geiser - Greenfield  
Mark M. Maloney – Greenfield  
Christopher L. Joseph. - Greenfield  
Arthur A. Schwenger - Heath  
Gerald Levine - Leyden  
Richard Kuklewicz (Chairperson) - Montague  
Dennis L. Grader - Montague  
Angela Fournier - New Salem  
Scott Milton- Northfield  
Linda R. Chapman - Orange  
Cliff Fournier (Secretary) - Orange  
Angus (Terry) Dun - Shelburne  
James Bernotas - Sunderland  
A. George Day, Jr., (Vice-Chairman) - Warwick  
Richard Drohen - Wendell  
Donald Sluter - Whately

It is the policy of the Franklin County Technical School not to discriminate on the basis of homeless status, sex, race, religion, age, sexual orientation, transgender, gender identity, sexual orientation, creed, color, national origin or handicaps in its educational programs, activities or employment policies.

FRANKLIN COUNTY TECHNICAL SCHOOL  
PROGRAM OF STUDIES 2016 - 2017

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Dear Parents and Students:

Since 1976, the Franklin County Technical School has been committed to providing quality programs in which students have the opportunity to earn a high school diploma, acquire a meaningful technical skill and receive preparation for post-secondary education. At the Franklin County Technical School, we continuously revitalize our curriculum both in academic and vocational/technical courses because the pace of change within industries and technologies is constant. We endeavor to update tools, equipment and processes used in vocational programs, as well as introduce new and relevant instructional materials for our academic classes. As a result, Franklin County Technical School joins the Commonwealth's overarching goal in attaining College and Career Readiness (CCR) for all high school graduates.

It is the belief of the Franklin County Technical School that all students are able to learn and that it is our responsibility to provide a safe, tolerant, disciplined and supportive environment, which will nurture and stimulate their growth as people.

By providing students with a well-rounded education in academic, technical and life skill areas, they will be better prepared to meet the demands and challenges of society.

To close, as you review this year's Program of Studies, please do not hesitate to contact me.

Sincerely,

Shawn Rickan  
Principal

# OUR SCHOOL

The Franklin County Technical School is a vocational high school operated by the Franklin County Technical School District. It is accredited by the New England Association of Schools and Colleges. Our school is located at 82 Industrial Blvd in Turners Falls, Massachusetts, close proximity to several colleges and places of business where many of our students are employed upon graduation.

The school offers licensed vocational training for students in grades 9-12 from the following district towns: Bernardston, Buckland, Colrain, Conway, Deerfield, Erving (Village of Millers Falls), Gill, Greenfield, Heath, Leyden, Montague (Villages of Millers Falls, Turners Falls, Lake Pleasant, Montague City, Montague Center) New Salem, Northfield, Orange, Shelburne, Sunderland, Warwick, Wendell and Whately. We also accept students from non-district towns (on a tuition basis). We are a tax-payer-supported public school.

Career & technical education is offered in the following areas:

- Automotive Technology
- Business Technology
- Carpentry
- Collision Repair & Refinishing
- Cosmetology
- Culinary Arts
- Electrical
- Health Technology
- Landscaping
- Machine Technology
- Plumbing/Heating
- Programming & Web Design
- Welding/Metal Fabrication

Franklin County Technical School operates on a rotating, alternate-week schedule with one week in academic classes and one week in a vocational program. During the academic week, students take a core curriculum of English, mathematics, science and history/social studies courses along with electives and certain required courses; there are six-56 minute classes each day. During the vocational week, students are in shop environments, supported by classroom based instruction for their vocation; in grades 9 and 10, students participate in an additional math course geared toward performance on the 10<sup>th</sup> grade state math assessment.

The alternate week schedule is maintained throughout the year so that a student spends about a half of each year in academics and a half in shop. Successful completion leads to both an academic diploma and a certificate of vocational proficiency. The Franklin County Technical School also offers a full program of athletics and extra-curricular activities for all students.

## OUR MISSION

The mission of Franklin County Technical School is to build futures through technical and traditional education.

## PHILOSOPHY

The foundational philosophy of the Franklin County Technical School is that all students are capable of academic and technical skills. All students can grow intellectually, socially, ethically and physically. Students learn best in a safe, tolerant and disciplined environment.

It is our task to nurture students into mature, young adults capable of life-long learning and curiosity. We achieve that by providing the professionally trained technical and academic teachers who are accomplished in reaching all students. We focus on support and individual instruction in those areas students will need for full, successful lives.

The basis of all instruction is that enjoyable learning is connected to students' immediate lives and their working and learning futures. Our programs are designed to mold students into young adults who have extensive training in their technical fields and who have reached levels of competence in their academic disciplines. All of our students are prepared for further educational experience after high school and are provided with cooperative working skills for the workplace. We are confident that our students will have pride in workmanship, character, commitment to service, and the ethical maturity to perform outstandingly in their community after they graduate from Franklin County Technical School.

# GENERAL ADMISSIONS

The Franklin County Technical School accepts applications from students who: (1) reside in our 19 district towns, (2) have been promoted into grades 9, 10 or 11, (3) are 14 years of age or older and, (4) have been enrolled as a full-time student the previous year.

The Franklin County Technical School admits students, and makes available to them its advantages, privileges, and course of study, without regard to sex, race, religion, age, sexual orientation, transgender, gender identity, sexual orientation, creed, color, national origin or handicaps in its educational programs, activities or employment policies.

Franklin County Technical School is a regional vocational technical high school for students (age 14-21), grades 9-12, in the towns of Bernardston, Buckland, Colrain, Conway, Deerfield, Erving, Gill, Greenfield, Heath, Leyden, Montague, New Salem, Northfield, Orange, Rowe, Shelburne, Sunderland, Warwick, Wendell and Whately.

Franklin County Technical School provides vocational educational programs complying with the Chapter 74 regulations governing vocational education in the Commonwealth of Massachusetts.

By a District agreement, the Franklin County Technical School selects students who have met the admissions criteria. Qualified students are selected according to a DESE-approved admission program.

Qualified students from outside the district also are eligible to apply for admission on a tuition basis.

Admission to Franklin County Technical School is by application. Students wishing to apply may request an application from their guidance department or directly from the Franklin County Technical School guidance department.

During the months of March and April students who have filed an application will be interviewed by a Franklin County Technical School counselor at their sending school.

Each application is reviewed by the Admissions Board comprised of: The Director of Pupil Personnel Services, Guidance Counselors and Principal or designee. After the review of applications, students, parents and sending school personnel are notified of the following status: acceptance, rejection or waiting list. Applicants are typically notified of acceptance or rejection by the end of June.

Non-District students should complete their application to a vocational school by March 15 to ensure adequate time for superintendent notification.

# REQUIREMENTS FOR A HIGH SCHOOL DIPLOMA

Awarding a high school diploma and a certificate of technical competency is based on the following: earning a sufficient number of credits, meeting course requirements, achieving a passing grade in required courses, completion of a student portfolio, and any other requirements mandated by the Massachusetts Department of Elementary & Secondary Education (i.e., MCAS). If a student has fulfilled local requirements but has not met the MCAS requirement, a local certificate or a state-endorsed certificate of attainment will be awarded in lieu of the diploma. A student becomes eligible to receive a diploma when he or she has passed the MCAS in re-takes after graduation.

## **COURSE REQUIREMENTS:**

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- four years: technical program
- four years: English language arts
- four years: mathematics
- four years: science and technology
- three years: history and social science\*
- two years: physical education
- academic courses required for technical program
- elective courses

\*Students who have passed two years of history may elect an alternative course junior year, and take a history course senior year. Alternatively, students who have passed three (3) years of history, as seniors, may elect to drop the course and replace it with an elective.

## **Total Credits Required:**

Class of 2016 – 149 credits

Class of 2017 – 153 credits

Class of 2018 forward – 157 credits

Total credit requirements for upper class transfer in to Franklin County Technical School will be determined by the number of years in attendance at the Franklin County Technical School. Transfers in for sophomore year will need to accrue a minimum of 113 credits during 3 years of attendance at FCTS in order to meet credit requirements for graduation. Transfers in for junior year will need to accrue a minimum of 74 credits during 2 years of attendance at FCTS in order to meet credit requirements for graduation.

## **PORTFOLIO REQUIREMENT**

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A satisfactorily completed portfolio must minimally contain:

- Three (3) letters of recommendation. These letters may be from: shop teachers, academic teachers, employers, coaches, counselors or non-family members
- A cover letter
- A resume
- A list of achieved vocational competencies
- A record of grades
- List of books read independently
- A grade 9 self-selected project in English class demonstrating acquired research skills and formation of vocational identity.
- A grade 10 selection of work reflecting the Math & Science Frameworks.
- A grade 11 history-focused project on a topic relevant to the world of work.
- A grade 12 Capstone project representing the culmination of the student's shop experience.

The Career Enhancement Skills instructor and senior guidance counselor will review each portfolio to determine if the graduation requirements have been met. Please reference the FCTS Portfolio Handbook for more detailed information.

Only students who have fulfilled their entire academic, technical program, disciplinary and financial obligations to the Franklin County Technical School by the day of graduation may participate in the graduation ceremony.

## PROMOTION REQUIREMENTS

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Promotion from year to year is not based on the acquisition of a specific number of credits. Promotion is based primarily on the successful completion of specific courses passed. However, students will be expected to have earned a prescribed number of total credits in order to graduate.

In order to be promoted, students, at each grade level, must achieve a passing grade and receive credit in the following areas:

### **Grade 9**

Vocational/Technical  
Program  
English  
Math  
Science  
History

### **Grade 10**

Vocational/Technical  
Program  
English  
Math  
Science  
History

### **Grade 11**

Vocational/Technical  
Program  
English  
Math  
Science  
History\*

### **Grade 12**

Vocational/Technical  
Program  
English  
Math  
Science  
History\*

## OUR ACADEMIC PROGRAM

Franklin County Technical School operates on an alternating week schedule, with one week in academic classes and one week in a vocational/ technical program. The alternating week schedule runs throughout the school year, so that students spend at least 90 days in each of their academic and vocational programs.

While the nature of providing two distinct curriculums (academic and vocational) is highly demanding, the Franklin County Technical School curriculum is aligned with the Massachusetts Curriculum Frameworks and for preparing students for success on the state wide achievement exam. FCTS coursework targets students' growth with and emphasis on mastery of the knowledge and skills necessary for graduates to be fully prepared for career and college readiness.

Counselors play an active role in determining each student's academic schedule each year and welcome questions from parents. Counselor contact information is available on our website.

Franklin County Technical School vocational/ technical and academic departments and the associated faculty are instrumental in reviewing their courses for relevancy, quality of instruction and rigor. The administrative team provides oversight and approval of all course content. As a community, we encourage an open and ongoing dialogue with students and their families about the quality of their education and the depth of the learning they experience as vocational/ technical and academic students. Teacher' contact information is available on our website.

# ENGLISH LANGUAGE ARTS

## OVERVIEW

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The guiding principles of English instruction in all grades are to develop the literacy level and critical thinking skills of all students to the highest possible extent. To this end, reading, writing, and speaking are at the core of each program. Much attention is given to the practice of expository writing and other writing forms. Each level of English is carefully designed to meet the needs and interests of students of varying abilities. Placement of each student will be determined by the recommendations of English teachers and guidance counselors. The following guidelines will be used to determine student placement level within specific grades.

## ENGLISH 9 (Grade 9)

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The theme of ninth grade English is Personal Identity. This will be explored through writing and reflection about who students are as learners. They will be introduced to the requirements of English at FCTS, including reading and writing strategies to build their academic identities and set themselves up for a successful transition to high school. Possible texts may include *A Midsummer Night's Dream*, *The Absolutely True Diary of a Part-time Indian*, *Fahrenheit 451*, and *The Pearl*. In addition, students will have the opportunity to read supplemental short stories, nonfiction, and poems that will connect to their developing senses of who they are as academic and vocational learners. Writing is an integral part of all parts of this English class. The freshman year culminates with a portfolio project that is a research-based exploration of an aspect of their identity that will aid them in setting goals for their academic and vocational futures here at FCTS. All classes and lessons are aligned to the Common Core Standards for English.

## ENGLISH 9 DEVELOPMENTAL (Grade 9)

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The goal of these classes is to provide the extra support needed to develop reading, writing, speaking, and listening skills in an environment that addresses the various learning needs of each student within the FCTS 9<sup>th</sup> grade English curriculum. The curriculum will be explored through the theme of Personal Identity. Students will use writing and reflection about who they are as students and learners. They will be introduced to the requirements of English at FCTS, including reading and writing strategies to build their academic identities and set themselves up for a successful transition to high school.

## **HONORS ENGLISH (GRADE 9)**

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An Honors English student demonstrates the ability to be an abstract thinker, sequentially connecting constructs of writing mechanics with the acquisitions of language. Honors English requires students to be independent learners, advanced readers and sophisticated writers willing to express their ideas in a clear and concise manner. Honors English challenges students to aspire toward constant improvement in all areas of English Language Arts. Homework is completed with thoughtfulness and timeliness.

## **ENGLISH 10 (Grade 10)**

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The joint themes of tenth grade English are Choices, Consequences, and Overcoming Adversity. These are apt themes as the reality of this year is the Massachusetts State Assessment test. All efforts are made to identify and address individual challenges approaching test time, while also keeping the classes vibrant and engaging. Reading and writing skills will be reviewed, strengthened, and developed as we explore the year's themes through texts such as *Of Mice and Men*, *Romeo and Juliet*, *To Kill A Mockingbird*, as well as many varied nonfiction texts, short stories, and poems. Writing will serve as a way of engaging with and responding to texts. We will refine the process of writing an analytical essay, identifying themes in fiction and nonfiction, building text based responses, and arguments involving theme in particular. All classes and lessons are aligned to the Common Core Standards for English.

## **ENGLISH 10 DEVELOPMENTAL (Grade 10)**

---

The goal of these classes is to provide the extra support needed to develop reading, writing, speaking, and listening skills in an environment that addresses the various learning needs of each student within the FCTS 10<sup>th</sup> grade English curriculum. The joint themes of tenth grade English are Choices, Consequences, and Overcoming Adversity. These are apt themes as the reality of this year is the Massachusetts State Assessment test. All efforts are made to identify and address individual challenges approaching test time, while also keeping the classes vibrant and engaging. Reading and writing skills will be reviewed, strengthened, and developed as we explore the year's themes through texts.

## **ENGLISH 10 HONORS (GRADE 10)**

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An Honors English student demonstrates the ability to be an abstract thinker, sequentially connecting constructs of writing mechanics with the acquisitions of language. Honors English requires students to be independent learners, advanced readers and sophisticated writers willing to express their ideas in a clear and concise manner. Honors English challenges students to aspire toward constant improvement in all areas of English Language Arts. Homework is completed with thoughtfulness and timeliness.

## **ENGLISH 11 (Grade 11)**

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The theme of eleventh grade English is Individuals in Society with an emphasis on ideas and ideologies. A main focuses of writing is analysis and composition of argument and purpose. Another focus is on connecting historical texts and systems of thought into our study of literature. This will culminate in an argumentative essay that is aligned with ideas or themes from one of the texts from class. Texts may include *Catcher in the Rye*, *Huckleberry Finn*, *A River Runs Through It*, *The Crucible*, *Much Ado About Nothing*, or *Raisin in the Sun*. As always, the texts and writing that we do in class will be supported and enriched through the study of nonfiction, short stories, and poetry. All classes and lessons are aligned to the Common Core Standards for English.

## **ADVANCED PLACEMENT ENGLISH LANGUAGE & COMPOSITION (GRADE 11)**

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The Advanced Placement English Language and Composition course is an 11th grade English course, open to juniors selected on the basis of ability and interest. In AP English Language and Composition, students read works selected for their elements of rhetoric, as well as their importance as literature. Students will study rhetorical tactics of expository, analytical, and argumentative essays. Skills emphasized will prepare students who will take the AP English Language and Composition exam. A qualifying score of three (3) or better on the AP exam may earn a student college credit.

Pre-requisite: Teacher Recommendation

## **ENGLISH 12 (Grade 12)**

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In addition to our robust offering of electives in the twelfth grade year, our twelfth grade English class offers many options to extend the lessons learned over the previous three years and prepare students for the world of college and career. Texts as diverse as *The Things They Carried*, *1984*, *Different Seasons*, *Macbeth*, *Othello*, *Hamlet*, as well as short stories, nonfiction, and poetry are used to explore the ideas of identity, choices and challenges, ideology, work, and independence. This class offers the opportunity for students, through writing and reading, to reflect on their own experiences, while further developing and connecting their understandings to the world beyond school. All classes and lessons are aligned to the Common Core standards for Career and College Readiness.

## **POETRY (Grade 12)**

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Students will gain relevant exposure to classical and contemporary poetry – through reading, analysis, writing, reflection, language acquisition, dictation, annotation, memorization, recitation, research, speaking, and listening. Since poetry is an oral tradition, the course heightens students’ skills as listeners, as well as equipping them to be more intentional about diction during the writing process. Students will learn vocabulary specific to poetry analysis and execution, and students will engage in the close reading of rich text. Students will explore a variety of poetic forms, and students will cultivate habits of revision as they develop an original writing voice.

## **JOURNALISM / YEARBOOK (Grade 12)**

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Students will learn about the craft of journalism and how it’s shifted over the years. Students will practice journalism, writing articles in a variety of styles and publishing them in the student newspaper, *The Eagle*. Classes will include: lectures/presentations, discussions, workshops, group and individual meetings, conducting interviews, researching, writing, revising, editing, and online publishing. Creative Journalism texts studied include: Joseph Mitchell’s *Joe Gould’s Secret* and Truman Capote’s *In Cold Blood*. A major focus of the class is the development and production of the school yearbook. Students will design, take pictures, write articles, complete layouts, obtain advertisements from the community, and participate in the selling of the yearbook

## **ADVANCED PLACEMENT ENGLISH LANGUAGE AND COMPOSITION (Grade 12)**

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The AP English Literature and Composition course is designed to engage students in the careful reading and critical analysis of literature. Through the close reading of selected texts, students can deepen their understanding of the ways writers use language to provide both meaning and pleasure for their readers. As they read, students should consider a work’s structure, style, and themes, in conjunction with elements such as figurative language, imagery, symbolism, and tone. Students should expect a rigorous undergraduate English experience with intellectual challenges and considerable workload that culminates in the AP exam in May. A qualifying score of three (3) or better on the AP exam may earn a student college credit.

Pre-requisite: Teacher Recommendation

## **LANGUAGE AND READING (Grades 9 -12)**

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These courses are designed for the student who has special needs in the area of reading, writing and/or language. Initial emphasis is placed on the development of basic reading and writing skills in order to develop a base to teach reading comprehension and interpretations, and composition skills. Course objectives are incorporated into the students' Individualized Educational Plan. The course is aligned with the Massachusetts Curriculum Frameworks for English Language Arts and utilizes a modified form of the general education curriculum to ensure students are given the opportunity to make effective progress. Language and Reading courses are available in all grade levels.

# MATHEMATICS

## **PRE-ALGEBRA (Grade 9)**

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Pre-Algebra is a course designed to strengthen a student's algebra readiness by reinforcing fundamental number sense and problem solving skills. Intended to prepare students for future success in their study of Algebra, Geometry and Advanced Mathematics. Course topics include fractions, decimals, rates, ratios, and percent, as well as basic algebraic modeling.

## **ALGEBRA I (Grade 9)**

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Algebra I begins with a quick review of basic algebraic concepts, such as variables, order of operations, exponents and problem solving skills. Students gain a thorough introduction to functions which is the basis of all of algebra and higher mathematics. Students learn how to solve and manipulate linear equations, including multi-step equations and equations with multiple variables, as well as writing linear equations based on the graph of a line. This course is in alignment with the Common Core State Standards (CCSS).

*Prerequisite: Based on 8<sup>th</sup> grade test results for grade 9*

## **GEOMETRY (Grades 9 & 10)**

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Geometry is a course designed to formalize and extend students' prior knowledge of geometry and to incorporate algebra concepts. Students explore geometric relationships found in plane and solid figures. The course focuses on topics such as properties of shapes and solids, area, volume, and similarity. Students investigate geometric properties in a variety of ways which may include investigations with 3 - dimensional solids, use of computer programs, constructions, and group work. This course is in alignment with the Common Core State Standards (CCSS).

*Prerequisite: Successful completion of Algebra 1 Standard for grade 10, or based on 8<sup>th</sup> grade test results for grade 9*

## **ALGEBRA 1 DEVELOPMENTAL (Grade 10)**

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Algebra 1 Developmental is a 10<sup>th</sup> grade course that follows Pre-Algebra. The course begins with a supported review of basic algebraic concepts, such as variables, order of operations, exponents and problem solving skills. Students are introduced to the family of functions which is the basis of all of algebra and higher mathematics. Students learn how to solve and manipulate linear equations, including multi-step equations, equations with multiple variables, and writing linear equations based on the graph of a line. This course is in alignment with the Common Core State Standards (CCSS).

*Prerequisite: Successful completion of Pre-Algebra - Developmental*

## **MATH 180 (Grade 9 & 10)**

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Math 180 supports 9<sup>th</sup> and 10<sup>th</sup> graders in mathematics development and retention during their participation in their technical vocational programs. The course targets skills development based on specific student need. Classwork is conducted through a self-paced computer course and is available to students at any time through the internet. This required course occurs one period every day during shop week.

## **ALGEBRA 2 (Grades 10 & 11)**

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This course begins with a thorough review of concepts from Algebra 1, including variables and expressions, exponents, polynomials, and solving equations and inequalities. Students learn several ways to solve systems of linear equations, through both graphing and algebraic methods. Other topics explored in Algebra 2 are families of functions, quadratic equations, complex numbers, and exponential and logarithmic functions. This course, which is aligned with the Common Core State Standards (CCSS), is a necessity for any student preparing for post-secondary work in mathematics.

*Prerequisite: 70 or above in Geometry for grade 11, or successful completion of grade 9 Geometry for grade 10.*

## **HONORS ALGEBRA 2 (Grade 11)**

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This course begins with a review of concepts from Algebra 1, including variables and expressions, exponents, polynomials, and solving equations and inequalities. The student will then delve into more complex concepts such as systems of linear equations, determinants and matrices, complex numbers, quadratic equations, families of functions, inverse functions, and exponential and logarithmic functions. This Honors section moves at a faster pace than the standard section of Algebra 2, and the use of graphing calculators is woven throughout the curriculum, leading to a better understanding of the theoretical concepts being explored. This course, which is aligned with the Common Core State Standards, is recommended for any student preparing for post-secondary work in mathematics.

*Prerequisite: 80 or above in Honors Geometry or 90 in Standard Geometry with teacher recommendation.*

### **ALGEBRA II APPLIED (Grade 11)**

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This course provides a supported review of concepts from Algebra 1, including variables and expressions, exponents and polynomials, and solving equations and inequalities. Students will then be introduced to several topics such as systems of linear equations, quadratic equations, families of functions, imaginary numbers, and exponential and logarithmic functions. When possible, real-life problems will be integrated into these topics. This course is aligned with the Common Core State Standards.

*Prerequisite: Successful completion of Geometry*

### **GEOMETRY DEVELOPMENTAL (Grade 11)**

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Developmental Geometry is an eleventh grade course designed to follow Developmental Algebra 1. This course will formalize and extend students' prior knowledge of geometry and to incorporate basic algebra concepts. Students explore geometric relationships found in plane and solid figures with real life applications. The course focuses on topics such as properties of shapes and solids, area, volume, and similarity. Students investigate geometric properties in a variety of ways which may include investigations with 3-dimensional solids, use of computer programs, constructions, and group work.

*Prerequisite: Successful completion of Algebra 1 Developmental.*

### **ADVANCED QUANTITATIVE REASONING (Grade 12)**

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This course is designed for seniors and will introduce them to three major conceptual themes: observing and exploring data; planning a statistically valid investigation which could lead to valid inferences; and anticipating patterns and using probability and simulations for predicting outcomes. Students will explore a large range of statistical topics with an emphasis on "real world" applications such as games of chance and randomness, assessing data for bias, and understanding how to manipulate data. Technology is an integral part of the course.

*Prerequisite: Successful completion of Algebra 2*

## **TECHNICAL MATH (Grade 12)**

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Technical Math will focus on fundamental concepts of mathematics as they apply to a variety of technical and career vocations, including material from Algebra 2. This course connects the academic curriculum to the needs of those preparing to enter the world of work or higher education. Specific topics include applications of fractions and decimals, measurement, plane geometry, linear and quadratic equations, and statistics.

*Prerequisite: Successful completion of Geometry Developmental or Applied Algebra 2*

## **ADVANCED PLACEMENT MATHEMATICAL DECISION MAKING-STATISTICS (Grade 12)**

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This 5 credit Advanced Placement course follows the completion of Algebra 2. The course includes a strong emphasis on statistics, an ongoing thread of financial applications, and the use of mathematical models from discrete mathematics, algebra, geometry, and trigonometry to solve complex problems in a range of engaging contexts.

*Prerequisite: Algebra 2 (final grade of 70 or better and teacher recommendation)*

## **FOUNDATIONS OF MATHEMATICS (Grades 9 –12)**

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These courses are designed for the students who have acute special needs in the area of mathematical fluency, computation, and problem solving. Initial emphasis is placed on the development of basic math computation skills and problem solving strategies in order to develop a base to build higher order Algebraic and Geometric thinking. Course objectives will be incorporated into the students' Individualized Educational Plan. Each course is aligned with the Massachusetts Curriculum Frameworks for Mathematics and emphasizes a modified form of general education topics to ensure that students are given the opportunity to access grade-level math curriculum in order to make effective progress.

# SCIENCE AND TECHNOLOGY

## OVERVIEW

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Courses offered through the science department seek to develop understanding of science principals through hands-on, skills-based instruction. Classes focus on engineering, physics, biology, and chemistry, supporting the instruction of technical content delivered in the 13 vocational programs. Additionally, curriculum in the 9th and 10th grades focuses on preparation for the Statewide Science exams. The Science curriculum aligns with the 2016 Massachusetts Science and Technology/Engineering (STE) Curriculum Framework (2016 MA STE Curriculum Framework) and the Common Core Frameworks. Our courses reinforce skills such as critical thinking and problem solving with professional career readiness as the primary goal for all of our students.

## HUMAN BIOLOGY/HEALTH (Grade 9)

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The Human Biology/Health course focuses on the concepts of human anatomy & physiology. Topics include the digestive, circulatory, nervous, respiratory, muscular, and skeletal systems, and health issues associated with them. Student learning is facilitated through lectures, laboratory work, computer simulations, and audio and video presentations as well as a range of projects such as the dissection of simple organisms, construction of a diet plans, and microscopic analysis of tissue groups. Students enrolled in this course would progress to sophomore biology for their next science course and take the Biology State Assessment during their sophomore year.

## INTRODUCTION TO ENGINEERING (Grade 9)

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This introductory course creates the knowledge foundation for two or more years of engineering and technology at FCTS. Through hands-on projects, students will explore the concepts of the Engineering Design Process (EDP), Engineering Design Sketching (on paper and through software like AutoDesk Inventor), Manufacturing Processes, Materials Testing, Structural Properties, Heat Transfer, Hydraulics and Pneumatics, Electricity and Circuits, and Communication Systems. Classwork projects include designing with energy efficient building practices, design sketching, structural properties testing, electricity and circuits labs. Students enrolled in this course would progress to Engineering Design for their next science course and take the Technology, Engineering State Assessment during their sophomore year.

## **BIOLOGY (Grade 10)**

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The central topics in this introductory semester-long Biology course are the chemistry of life, cell biology, genetics, evolution & biodiversity, & ecology. Student learning is facilitated through lectures, laboratory work, computer simulations, and audio and video presentations as well as a range of projects such as evolution simulations, ecosystem construction, college level genetics work and wet lab analysis. Students enrolled in this course will take the Biology MCAS during the spring of their sophomore year.

## **ENGINEERING DESIGN (Grade 10)**

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Engineering Design is a year-long course in a two year sequence of engineering and technology classes at FCTS. Through hands-on projects, students will explore the concepts of the Engineering Design Process (EDP), Engineering Design Sketching (on paper and through software like AutoDesk Inventor and Chief Architect), Prototyping, Building Structural Design and Testing, Heat Transfer Systems, Inputs and Outputs of Electronic Devices, The Forces of Lift, Drag, Friction, and Thrust as related to Flight. Classwork will include structural design and materials testing, and building scale airplanes that fly. Students enrolled in this course will take the Technology & Engineering State Assessment during their sophomore year.

## **APPLIED PHYSICS I (Grade 11 & 12)**

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Applied Physics I focuses on classical mechanics and its connections to biomechanics, machinery, and astronomy. The course covers translational kinematics and dynamics along with rotational kinematics and dynamics. Goals of the class focus on mastery of concepts and making connections over precedence to calculations; however, mathematics is the language of science and will be utilized with frequency in this course. Class projects develop student understanding of how upper-level mathematical concepts were discovered.

## **CHEMISTRY I (Grade 11 & 12)**

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Scientific literacy is achieved as students inquire about chemical phenomena. The curriculum includes substantial hands-on laboratory and computer simulations to develop and use scientific skills in chemistry, along with inquiry skills applicable to science, student's technical programs, and life in general. Concepts include the properties of matter, atomic structure, nuclear chemistry, periodicity, chemical bonding and reactions, and stoichiometry. Major emphasis is placed on forming hypotheses based on observations, scientific articles, experiments, and knowledge, as well as articulation of investigation concepts and purpose. Classwork includes scientific investigations, conducting experiments, and laboratory work (proper use of lab equipment and materials as well as following strict safety guidelines)

## **APPLIED PHYSICS II (Grade 12)**

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Applied Physics II focuses on fluid dynamics, thermal physics, and electrical physics and its connections to boat hulls, alternative building design, and off-grid energy solutions. Project based learning is the theme of this course; students will build and test a canoe, a cob dwelling and a working generator.

Pre-requisite: None

## **CHEMISTRY II (Grade 12)**

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Scientific literacy developed in Chemistry I is broadened as students inquire about chemical phenomena. The curriculum includes substantial hands-on laboratory and computer simulations to develop and use scientific skills in chemistry, along with inquiry skills applicable to science, student's technical programs, and life in general. Concepts include acids and bases and oxidation-reduction reactions, solution, rates of reaction, equilibrium, states of matter, kinetic molecular theory, and thermochemistry. Major emphasis is placed on forming hypotheses based on observations, scientific articles, experiments, and knowledge, as well as articulation of investigation concepts and purpose. Classwork includes scientific investigations, conducting experiments, and laboratory work (proper use of lab equipment and materials as well as following strict safety guidelines)

Pre-requisite: Chemistry I (final grade of 70 or better and teacher recommendation)

# HISTORY AND SOCIAL SCIENCES

## OVERVIEW

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Courses offered in the History and Social Sciences department encourage discussion of ideas, enhance reading, writing, listening and speaking skills, and employ varied teaching methodologies to promote mastery of diverse and challenging course concepts. Additional emphasis on research and writing promotes preparation for college level work, following the Federal C3 Social Studies Frameworks (preparing students for Career, College, and Civic Engagement). All courses align with the Massachusetts Curriculum Frameworks for History.

## WORLD HISTORY SURVEY COURSE (Grade 9)

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World History Survey is designed as a freshman year course that serves both as an introduction to the skills required in history class as well as an overview of World History from the year 300 to the present day. The course is based around the TCI textbook, History Alive: World Connections, and is supplemented by outside resources, including lessons from the Stanford History Education Group. It is divided into six units of study: Themes of World History, Expanding Interactions 300-1500, The First Global Age 1400-1800, An Age of Global Revolutions 1700s-1914, Global Crisis and Achievement 1900-1945, and The Cold War and Beyond 1945-Present. Throughout the year, students will learn history through primary and secondary sources, including written documents and visuals. Their progress will be measured through tests and document-based question (DBQ) essays, as well as projects and other assignments.

## UNITED STATES HISTORY I (Grade 10)

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In US History I, students examine the historical and intellectual origins of the United States during the Revolutionary and Constitutional eras. Students study the basic framework of American democracy and the basic concepts of America government, as well as America's westward expansion, the establishment of political parties, economic and social change, sectional conflict, the Civil War, and Reconstruction. Instructional activities target student literacy through development of reading, writing, speaking, listening and critical thinking skills.

## **HONORS UNITED STATES HISTORY I (Grade 10)**

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As in standard US History I, students examine the historical and intellectual origins of the United States during the Revolutionary and Constitutional eras. Students study the basic framework of American democracy and the basic concepts of America government, as well as America's westward expansion, the establishment of political parties, economic and social change, sectional conflict, the Civil War, and Reconstruction. This course will provide the opportunity for increased exposure to historical concepts by emphasizing the development of historical thinking skills; sourcing, close reading, contextualizing and corroborating. This will be accomplished through the utilization of advanced primary source documents. Increased emphasis will be placed on evidence based writing, small group activities and self-guided study as well as daily engagement in class discussions based on individual work.

## **UNITED STATES HISTORY II (Grade 11)**

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In US History II, students will explore the transformative effects of the Civil War and the emerging role of the United States as world power. They will examine the expanding concept of democracy, and the tumultuous 20<sup>th</sup> century as American influence expands in industry, world affairs, military conflicts and ideology. The course will conclude with an examination of the current state of the people of the United States in the world. Instructional activities target student literacy through the development of reading, writing, speaking, listening and critical thinking skills.

## **HONORS UNITED STATES HISTORY II (Grade 11)**

---

As in standard US History II, students will explore the transformative effects of the Civil War and the emerging role of the United States as world power. They will examine the expanding concept of democracy, and the tumultuous 20<sup>th</sup> century as American influence expands in industry, world affairs, military conflicts and ideology. This course will provide the opportunity for increased exposure to historical concepts by emphasizing the development of historical thinking skills; sourcing, close reading, contextualizing and corroborating. This will be accomplished through the utilization of advanced primary source documents. Increased emphasis will be placed on evidence based writing, small group activities and self-guided study as well as daily engagement in class discussions based on individual work.

## **CURRENT ISSUES (Grade 12)**

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World events have taken the United States into what some consider as very dangerous waters. In the Current Issues class, complex issues of the day are examined and contextualized, allowing students to better understand the world around them. Classroom content might include global issues such as terrorism, racism, global bias in the media, and how others in the world view the United States (and why). Major events effecting foreign policy are examined, from the Vietnam era to the present day.

## **GOVERNMENT AND LAW (Grade 12)**

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Through this course, students develop their knowledge of legal rights and responsibilities, understand engagement in the democratic process, and develop an understanding of a nation based on the rule of law. The basic text will be the US Constitution and its Amendments. Students will develop a working knowledge of current issues facing the nation and the electoral process. The second half of the year students will engage in activities that will enhance their knowledge of the court system culminating in at least one mock trial. The emphasis throughout the year will be placed on reading primary and secondary sources, writing, research, discussion and critical thinking.

## **SOCIOLOGY (Grade 12)**

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Sociology introduces students to the study of human societies, with a focus on modern-day American society. We will examine the meaning of culture, how people become socialized to be part of a culture, and social roles and divisions in America. In particular, we will spend time examining race, gender, class, age, and other identity categories, looking at how these categories are formed and how power and prejudice (racism, sexism, etc.) affect people. We will investigate why people go against societal norms and commit crimes, the historical development of societal institutions such as marriage and the family, and examine how societies change over time. Throughout the course, students will draw on their own experience and current events to relate covered concepts to society today.

# ELECTIVES

## **CAREER ENHANCEMENT SKILLS I (Grade 11)**

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Career Enhancement prepares students for the world of work with an emphasis on employability skills. Activities and assignments integrate real-world work related issues, post graduate planning, and trade-specific content. Class topics include resume development, legal rights and responsibilities of employees and employers, leadership, economics, marketing, work place ethics, public speaking, presentation and interview skills, and business (including management and entrepreneurship). Career Enhancement I aligns with the Massachusetts Vocational Technical Education Framework's Strands 4, 5 and 6, and is a required course for all 11<sup>th</sup> graders.

## **CAREER ENHANCEMENT SKILLS II (Grade 12)**

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Career Enhancement II builds upon the knowledge and skills gained in the 11<sup>th</sup> grade targeting preparedness for the world of work. Activities and assignments integrate real-world work related issues, post graduate planning, and trade-specific content. Class topics include money management, career exploration, business plan development, and formal presentation skills. A major focus of the course is the Senior Capstone paper and presentation, which represents the culmination of 4 years of integrating academic and technical/vocational learning through a Senior Capstone project. Career Enhancement II aligns with the Massachusetts Vocational Technical Education Framework's Strands 4, 5 and 6, and is a required course for all 12<sup>th</sup> graders.

## **PROBLEM SOLVING WITH ROBOTICS (Grade 12)**

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Problem solving is sometimes defined as “what to do when you don’t know what to do.” In this course, students will explore a series of complex projects. They will work in teams to design, build, program, and troubleshoot robots that follow a specific rubric while employing technologies like sensors and microprocessors. Students will be exposed to a series of math topics that are directly related to the field of robotics, including unit analysis, gear train design, and collecting, organizing, and displaying data.

*Prerequisite: Successful completion of Algebra 2*

## **PHYSICAL EDUCATION AND HEALTH (Grades 9-12)**

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This course will provide students with the necessary material to further engage and progress within the Health and Physical Education department at Franklin Tech. The course is designed to involve learning about the habits, behaviors, interactions and decisions related to healthy daily living and obtaining optimal personal wellness throughout life. Topics may be personal in nature but allows for the individual to build on his or her personal values and beliefs within the context of school, family and the

community. The aim of this is to enable students to make well-informed, healthy choices and to develop behaviors that contribute to the well-being of self and others. The curriculum is based on the Massachusetts Comprehensive Health Frameworks and is aligned with the National Standards through SHAPE America. Topics covered in this course will include, but not be limited to: nutrition, sexual education and healthy relationships, mental health and suicide prevention (through the Lifelines curriculum), bullying prevention, drug and alcohol use and abuse, stress management etc.

PHYSICAL EDUCATION ACTIVITIES (9-12)

<u>Fitness</u>	<u>Team Sport</u>	<u>Games</u>	<u>Life Time Skills</u>	<u>Dance</u>
Aerobics	Soccer	Wiffleball	Disc Golf	Zumba
Walking	Lacrosse	Badminton	Walking	
Running	Basketball	Kickball	Horse Shoes	
Track Events	Volleyball	Dodgeball	Lawn Croquet	
Strength Training	Ultimate Frisbee		Ladderball	
Cardio fitness	Floor Hockey		Nutrition	

**COMPUTER-AIDED DESIGN & COMPUTER-AIDED MANUFACTURING (Grades 9-12)**

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Computer-Aided Design (CAD) & Computer-Aided Manufacture (CAM) is an elective course for all grade levels and required course for those students in Machine Technology, Welding, and Carpentry. CAD/CAM is a constantly evolving field, which affects the way everyday products are designed, prototyped, and manufactured. Students enrolled in CAD/CAM become proficient with various CAD/CAM functions, terminology, and career opportunities in related fields. Topics include introduction to CAD environment, 2 D mill course, creating geometries, chaining of tool paths, creation of drawings, modification of drawings, plotting, isometric (3D) drawings and dimensioning, finalizing projects for posting to a variety of CNC cutting devices. Classwork is almost exclusively in a computer lab environment with a hands-on approach. Students in good standing may qualify for college credit through articulation agreements with Greenfield Community College.

**MUSIC (Grades 9-12)**

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The Music course provides a foundation for the principals of music appreciation and a well rounded musical perspective through the study of instrumental, vocal, and electronic music. Classes include individual and group instruction of musical instruments, and individual and ensemble (brass, woodwind or vocal) performance work based on student specific interests. Music appreciation is developed through exposure to and discussion of musical styles, music history, and the exploration of music's involvement with politics and society, and attendance at community based and professional performances-

### **FILM STUDIES (Grades 10 or 12)**

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Film Genre Studies is a content-variable course. Each iteration of the course focuses on a specific genre of film in context, including the Western, the Epic, the Foreign Film, Film Noir, the Crime Story, Science-Fiction Adventure, War, or other film genres. This is an intensive study of the conventions, artists, and styles associated with specific genres and the circumstances in which the genre appeared.

Learning Outcomes

- Identify and evaluate the styles and conventions of a specific genre.
- Identify and evaluate genre directors and genre actors.

# TECHNICAL PROGRAMS

Franklin County Technical School provides career development and industry specific training in 13 technical vocational programs. Each vocational program provides a combination of theory and practical application through a competency based technical curriculum that is aligned to the Massachusetts Vocational Curriculum Frameworks. Safety is a focus of each program as students learn and practice in shops equipped with industry standard, state-of-the-art equipment. Career-readiness skills are continually developed and emphasized to provide students with the skills and knowledge necessary to successfully enter the world of work within or away from their program's focus.

## **CHAPTER 74 EXPLORATORY**

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All ninth graders who enroll in Franklin County Technical School participate in a half-year vocational technical exploratory program designed to help them learn about their talents and interests relative to a variety of different vocational-technical programs. During the exploratory program, students become aware of the curriculum and requirements for each shop, as well as related career, employment, and post-graduate training opportunities including those nontraditional for their gender. Students receive appropriate safety training during the exploratory experience, and are assessed for aptitudes, interests and academic skills.

At the outset of the year, 9<sup>th</sup> grade students explore all vocational technical shops during a short 'mini-exploratory.' Students then select four exploratory choices and enter an exploratory process that runs from September to January. Students are evaluated and scored by each shop teacher daily during their stay in each program: the categories of attendance, punctuality, self-motivation, behavior, work production and teamwork are the criteria utilized to determine vocational placement. At the end of the exploratory period, each student selects his/her program of choice. Students are admitted into the program of their choice based on the grade point average they received in all shops combined.

## **OSHA**

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Seniors in all vocational programs will complete the necessary training and assessment in order to receive the 10 hour Construction or General Industry card issued under the guidelines of the Occupational Safety & Hazard Administration (OSHA). In addition, all students will receive the necessary training and assessment for the First Aid/CPR certification under the guidelines of the American Red Cross. These courses are taught by certified instructors. There is no fee for this training.



## **AUTOMOTIVE COLLISION REPAIR & REFINISHING**

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This program has been evaluated by the National Automotive Technicians Education Foundation, Inc., and certified by the National Institute for Automotive Service Excellence. This program provides training in the repair of automobiles. Students are instructed in the safe and proper use of all basic hand and pneumatic tools. Students gain technical knowledge in the reconstruction and refinishing of automobile bodies. As skills develop, students complete “live” work on customers’ vehicles from the general public. Additional exposure to structure analysis, damage repair, non-structural analysis, mechanical and electrical components, plastics and adhesives, and water-based painting and refinishing techniques is provided both in the shop and in a separate theory class. The goal of the program is to train students for entry into the automotive body repair field as qualified apprentices, with a sound basic knowledge of the trade and exposure to individual Automotive Service Excellence (ASE) certification requirements. This program is accredited by the National Automotive Technicians Education Foundation, Inc.

## **AUTOMOTIVE TECHNOLOGY**

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Students in Automotive Technology focus on all phases of automobile maintenance and repair. Emphasis is placed on engine performance, brake systems, complete front-end service, replacement of component parts, lubrication, clutch, automatic and manual transmissions, driveline service, heating and air conditioning, electrical systems, and engine repair. Initial experience begins with a safety and career orientation and basic maintenance of automobiles. As skills are developed, students progress to “live” work on customers’ vehicles from the general public. The goal of the program is to train students for entry into the automotive field as qualified apprentices, with a sound basic knowledge of the trade and exposure to individual Automotive Service Excellence certification requirements. This program is accredited by the National Automotive Technicians Education Foundation, Inc. and certified by the National Institute for Automotive Service Excellence.

## **BUSINESS TECHNOLOGY**

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The Business Technology program introduces students to the field of business and office careers. This comprehensive vocational program emphasizes the development of skills related to Microsoft Office computer applications, modern office procedures and practices, business/marketing concepts, and effective oral/written communications.

Subjects of study include business document formatting, records management, telephone procedures & customer service, database design and management, principles of desktop publishing, compiling and editing spreadsheets, word processing, and lists management. Fundamental skills are developed in entrepreneurship and marketing, as well personal finance. A variety of office settings within the school and its neighboring businesses are used as a laboratory for student practice and skill building.

## **CARPENTRY**

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The Carpentry Program prepares students with knowledge and skills necessary for successful 21st century careers. Some will enter directly into the employment world as competent woodworkers, cabinetmakers, carpenters, apprentices, or CAD/CAM technicians.

From the fundamentals of woodworking through advanced house carpentry, our four year program covers all aspects of the industry. High expectations develop professional attitudes through daily goals, teamwork, quality workmanship, communication, and assessment. Developing a safety attitude is paramount; students are recertified in shop and equipment safety at the beginning of each school year. Course subject matter includes industry awareness, career pathways, employability skills, construction documentation, materials identification, job costing, scheduling, portable power tools, stationary machines, measuring and layout, joinery, machining, assembly, finishing, engineered wood products, rough and finish carpentry, and green building. Hands-on projects include in-shop woodworking and jobsite carpentry. Our students often cooperate on medium-to-large scale community service projects within Franklin County.

Our shop and jobsite projects are augmented with daily Related Theory Class to introduce new technical concepts, assess understanding, and evaluate progress. Students experience relevant learning activities integrating English Language Arts, History, Math, Science, and OSHA Safety. Also, the daily CAD/CAM Class presents computerized design and manufacturing concepts. Students utilize Chief Architect® software to design, draft, and interpret construction drawings. With MasterCam® software, students also design and manufacture woodworking projects using digitally-integrated machinery such as multi-axis routers and lathes. Field trips and guest speakers often provide excitement motivation, and inspiration beyond the classroom. Students also receive OSHA 10-Hour Construction Safety Certification, Basic First Aid/CPR Certification, and Fire Safety Certification. In our Cooperative Learning Program, grade 12 students meeting specific progress requirements may gain relevant work experience at a local employer as a paid employee.

## **COSMETOLOGY**

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This course of study introduces students to the artistic and technical fashion industry and prepares them for completion of the Massachusetts State Board of Registration of Cosmetologists examination. Students learn all facets of treatment, including hair styling, cutting, setting techniques, hair coloring, facial treatments, manicuring and artificial nail application, wig care and service, hair straightening as well as permanent waving and shampooing. Students gain knowledge in the areas of anatomy, physiology, and chemistry as well as interpersonal relations, management, sales, and entrepreneurship as they relate to cosmetology. Sanitation, safety, and hygiene are continually stressed.

The Techniques salon provides an authentic training site for students to be exposed to all aspects of the cosmetology industry, servicing clients from the general public.

## **CULINARY ARTS**

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The focus of the Culinary Arts program is the general study of cooking, baking, and service related to culinary arts. This program is designed to prepare individuals for a variety of skilled occupations within the hospitality/food service industry. Through constant observation and instruction, students perform “hands-on” tasks in one of the three shop areas: the range, the bakery and the dining room.

The Apprentice Restaurant provides an authentic training site for students to plan, supervise, and perform food and beverage preparation, service operations and restaurant facilities. The students develop and strengthen a variety of management functions, cash handling skills, and interpersonal abilities while working in the dining room. Seniors are trained and sit for the ServSafe Certification examination.

## **ELECTRICAL**

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The Electrical Program prepares students to safely apply technical knowledge and skills to install, operate, maintain, and repair electrical systems and equipment for residential, commercial, and industrial applications.

Emphasis is placed on the mathematical and scientific principles of electrical theory and standards set by the National Electrical Code. Wiring systems for transmission of power and power distribution for use in lighting, alternating current and direct current motor controls, heating and air conditioning systems are taught, as are communication (voice and data) wiring and fiber optic systems. Motor controls Programmable logic control systems (PLCs) are incorporated into projects that explore the functionality of modern PLC software relating to automation. A mobile photovoltaic (solar) array mounted on campus as well as panels within the shop provide training for residential applications of PV systems. The school’s electric vehicles (EVs) are partially managed by students. Finally, a multitude of electrical projects located off site as well as within the school building encompass a variety of hands-on applications of learning to build skills. Apprentice hours and electrical related hours may be accrued toward state electrical licensure requirements.

## **HEALTH TECHNOLOGY**

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This program prepares students for entry-level positions in the fast growing health field. This program introduces student to health service occupations that prepares individuals for either entry into specialized training programs or for a variety of concentrations in the allied health area. An instruction in the safety, basic sciences, research and clinical procedures, and aspects of subject matter related to various health occupations helps

lead students to become Certified Nurse Assistants, Home Health Aides and to attain a certificate of completion in Cardio-Pulmonary Resuscitation (CPR).

Collaboration with Greenfield Community College provides access to coursework leading to certification as an Emergency Management Technician (EMT). Regular collaboration with off-site health care providers enables students to spend portions of their day performing within the field.

## **LANDSCAPING AND HORTICULTURE**

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The Landscaping program provides individuals with diverse instruction in the management and maintenance of indoor and outdoor ornamental and recreational plants and ground covers. The program also involves instruction in related conceptual designs established by landscape designers, enterprise owners and managers, and individual clients. The program involves instruction in applicable principles of horticulture, plant identification, irrigation, plant nutrition, turf management, integrated pest management, landscape construction, arboriculture, personnel supervision, and purchasing. Individuals are instructed in the safety and operation of tractors, backhoes, front-end loaders, forklifts, lawnmowers, turf maintenance power equipment, and chainsaws. Students may also choose to prepare for a Massachusetts Hydraulics License and a Massachusetts Pesticide Applicator's License.

The Horticulture program focuses on the production and processing of domesticated plants, shrubs, flowers, foliage plants, trees, groundcovers, and related plant materials. Instruction includes the management of technical and business operations connected with horticultural services and basic scientific principles needed to understand plants and their management and care. The greenhouse operations involve bedding plant production, hydroponics, houseplant production and care, specialty plant production, plant nutrition, irrigation, greenhouse environment control, and integrated pest management (IPM). Landscaping & Horticulture students are also encouraged to take part in the co-curricular FFA chapter (student agricultural organization) activities and competitions.

## **MACHINE TECHNOLOGY**

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The Machine Technology program prepares students for entry-level positions within the precision machining and advanced manufacturing industry. Students are provided with training in general shop safety and specific machine safety. Training includes development of safe work skills, problem solving and critical thinking skills, work ethics and an awareness of working to the industry's professional standards.

Students are trained in a state-of-the-art program that develops skills needed to set-up, operate and maintain metalworking machinery for shop projects and other work pieces using a variety of metals and plastics. Students are trained in the use of machine tools such as:

- Manual - Lathes, Milling machines, Surface Grinders
- C.N.C. (computer numerical control) Vertical Milling Centers, (including 4th axis)
- C.N.C. Slant Bed Lathes (including 4th axis)
- Heat treat ovens
- Various support type machines and tooling, grinding and maintenance.

The program also includes training in layout and inspection practices, metrology, and industrial print reading. Students also will be trained in C.A.D. (Computer Aided Design) using Mastercam and Inventor design software. The program includes computer based training instruction using TOOLING U (Tooling University) which is widely used in industry and students will work towards MACWIC certification training and testing.

## **PLUMBING AND HEATING**

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The Plumbing/HVAC program prepares students for entry-level positions into the plumbing, pipe fitting, and heating fields. Emphasis will be placed on the knowledge and skills required in the installation and maintenance of plumbing, gas distribution, pumps, ductwork and both oil and gas heating systems. Students gain working knowledge of the fundamentals of electricity and electrical controls, the safe handling of hazardous chemicals, and a successful work ethic. In addition, a focus on solar-thermal function, design, and installation will accompany students' exposure to renewable energy sources. Hand and power tools, as well as diagnostic tools and software, are used to develop the skills necessary to succeed in the industry. A comprehensive safety training program exists for every student.

Advanced students will gain experience by working on the community plumbing and heating projects. Technical classroom study will cover the Massachusetts Plumbing Code, advanced plumbing theory, HVAC theory, related mathematics and geometry, print reading, heat-loss calculation, and general business are covered in related class and integrated into the shop projects. Students who wish to continue in the plumbing trade may receive apprentice and plumbing related hours towards State Journeyman Plumbing licensing requirements, training for Oil Burner Technicians Certificate, and the EPA 608 Refrigerant Handlers certificate.

## **PROGRAMMING AND WEB DEVELOPMENT**

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The Programming and Web Development Program at the Franklin County Technical School is directed toward the training of students for positions in computer programming and web development.

In the Programming section, students are taught Object Oriented and structured programming concepts using a variety of programming languages, such as Python, C#, C++ and Swift IOS programming. Students also experience working as a team. At the end

of four years, students should be able to create high quality programs, games and IOS apps

In the web development section, students are taught how to create professional web sites using a variety of tools and languages, such as html, css, javascript, php, while using applications such as Flash, Photoshop, and Dreamweaver. At the end of four years, students should be able to design, create and maintain client/server based websites.

### **ADVANCED PLACEMENT COMPUTER SCIENCE (Grade 12)**

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The AP Computer Science course is designed to introduce students to the steps and techniques necessary for computer programming. Students will use both simple algorithms and multi-classed programs to solve various real-world problems in preparation for the Advanced Placement exam. Students will learn how to design, implement and execute many programs using the object-oriented Java programming language. This is a 5 credit college level course offered in Programming and Web Design. Prerequisites include the recommendation of the shop instructor and qualifying FCTS transcript. Placement is approved by the Principal or Principal's designee.

### **WELDING AND METAL FABRICATION**

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The Welding/Metal Fabrication program at the Franklin County Technical School consists of instruction designed to meet the needs of students who are planning to pursue a career as a welder/metal fabricator. The program develops a theoretical and technical foundation to support a safe, hands-on learning experience using a variety of tools, equipment and metals.

An innovative industrial based curriculum blends related math, science, and metallurgy with modern, state of the art equipment. All of the most common welding processes are taught as part of this program. These include shielded metal arc welding, gas tungsten arc welding, gas metal arc welding, flux cored arc welding, oxy-acetylene welding, oxy-acetylene cutting, carbon arc gouging and plasma arc cutting. Students will be exposed to computer numerically controlled (CNC) oxy-fuel/plasma arc programming and operation.

The metal fabrication portion of the program introduces the shearing, bending, rolling and forming of metals in a project-oriented format. This Welding/Metal Fabrication curriculum is based on American Welding Society and American Society of Mechanical Engineers standards. The program is certified by the American Welding Society. Students enrolled in the program will have an opportunity to work towards certification according to these standards.

# STUDENT SERVICES

## **GUIDANCE**

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The Guidance Department at the Franklin County Technical School is committed to providing appropriate personal, vocational, and career-counseling services supporting each student's ability, interest, and motivation. By creating an environment in which personal growth and opportunity occur, the counseling staff cultivates and emphasizes the skills necessary for good citizenship, productive social behavior, and success on the job.

Counselors assist students with their post-school plans, including career plans, placement in colleges, technical schools and the work force. Involvement with parents during this process is strongly encouraged.

Guidance counselors meet with students to discuss attendance, behavioral issues, and academic and shop performance.

## **SPECIAL EDUCATION SERVICES**

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To accommodate the special needs of some students, Franklin County Technical School offers a number of quality supportive remediation and compensatory services and programs.

Our special education faculty provides services to all special needs students who need remediation and compensatory instruction in the development of their language and math skills, support in their other academic and vocational endeavors, and who could benefit from help with study and organizational skill development. This program is designed to improve academic skills, teach the skills necessary for students to mainstream into general education class placements, and provide support to students with disabilities. The program is staffed by certified special education teachers and often involves the active collaboration of general academic and vocational faculty.

Extensive support for these programs is provided by the Director of Special Education, the special education liaisons and the school psychologist, as well as the academic and vocational instructors.

## **ACADEMIC SUPPORT**

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Academic Support is a series of classes designed to provide a range of services to students with documented disabilities. Instructors focus on assisting students in their attempts to access the general curriculum of each grade level by providing specially designed instruction in the areas of reading, writing, mathematics, and/or organizational/study skills. Small group instruction and individual consultation is offered

to reinforce learning from a student's general education classes as well as develop compensatory skills to overcome learning challenges that may impede progress toward IEP goals and objectives.

## **VOCATIONAL SUPPORT**

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Vocational Support is programmatic consult based model of support allowing Instructors in vocational and technical educational areas to work with a trained support staff professional for the purpose of appropriate instructional practice relative to methodology, accommodations and performance criteria as it related to specific vocational, technical and related concepts. Additionally, support, both direct and indirect, is provided to instructors and students when necessary to access testing accommodations and assistive technology.

## **READING TUTORIAL**

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This course is designed to support students with specific issues in reading. If a student has deficits in the areas of decoding, encoding, fluency and/or reading comprehension and the deficits are severely below grade level, or if a student has a language-based learning disability and requires direct instruction in reading, they would be enrolled in this course. The course is designed to provide direct instruction to meet the goals and objectives outlined in a student's Individualized Education Program. The content and delivery of instruction for this course is provided by a certified reading specialist.

## **TITLE I**

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Franklin County Technical School's Title I program provides supplemental assistance to qualified students based on the Elementary and Secondary Education Act (ESEA). These supplemental services provide supports to help qualified students meet challenging state academic standards.

## **ENGLISH LANGUAGE LEARNERS**

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English language learners and students whose primary home language is other than English are identified upon registration so that second language instruction and translation services can be provided. Translation services are also provided for students in vocational areas as needed to insure safety precautions are fully understood and observed.

By Massachusetts law and regulation, English language learners are assessed using state supported testing. Students who have been enrolled in a school in the United States for a year or more are also required to participate in the Massachusetts Comprehensive Assessment System (MCAS).

## **SECTION 504**

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Section 504 of the Americans with Disabilities Act is anti-discrimination legislation that mandates any public institution (schools included) to provide accommodations to eligible individuals with disabilities (who have a major life function significantly impacted) that allow the individual to access the general education program; this includes extra-curricular activities. Guidance counselors are the 504 liaisons for their respective grade levels here at FCTS.

## **ARTICULATION AGREEMENTS**

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Articulation agreements with Greenfield Community College may grant eligible Franklin County Technical School students advance standing in specific programs at these two institutions. For further detailed information, contact the Coordinator of Vocational and Technical Education at Franklin County Technical School.

## **COOPERATIVE EMPLOYMENT PROGRAM**

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The cooperative employment program (co-op) provides students with on the job opportunities to continue comprehensive training and practical experience in their vocational field of study. The cooperative work program at the Franklin County Technical High School functions within the scheduled program of instruction at the school. During their scheduled shop week, students participate in the cooperative work program, and earn wages while gaining valuable work experience. The co-op work program is offered to seniors, and can serve as a reward to students who excel in both shop and academics and demonstrate a positive attitude in attendance and behavior. Cooperative work experience can also serve as an incentive tool to initiate within the student a desire to achieve a good scholastic average, show the value of good attendance, and demonstrate the benefits of good citizenship in both school and industry. For further detailed information, contact the FCTS Coop Coordinator.

## **EARLY ENTRANCE (DUAL ENROLLEMENT) PROGRAM**

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The Early Entrance (Dual Enrollment) Program was authorized in the Education Reform Act of 1993. Today, at the Franklin County Technical School, qualified high school students can earn both high school and college credit simultaneously through our Early Entrance Program. In addition to regulations specified by the State of Massachusetts, students from Franklin County Technical School must follow the procedures set forth by the school and receive approval from the Principal. For further detailed information, contact the Guidance Department at FCTS.

## **HEALTH SERVICES**

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The primary function of health services at the Franklin County Technical School is to provide immediate first aid and evaluation of students' injury and illness. Students receive basic treatment and are advised if further treatment is indicated. It is the school's policy to notify parents immediately of serious injury or illness. This approach results in an excellent safety record.

The health services office offers a variety of health education literature for the students. This material stresses preventive aspects of health care. Periodically, there are special workshops offered to further educate the student in his/her role in personal health care. Vision and hearing tests are completed each year. All students participating in athletics must have a physical examination each year.

## **FCTS LIBRARY PROGRAM**

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The primary mission of the Library program is to encourage intellectual curiosity in students and faculty, to enrich and support the curricular needs of the staff, and to strengthen our school community. The library itself offers an organized and accessible collection of materials that support college and career readiness for the 21st century learner.

The FCTS Library program works to:

- Build a love of reading by providing high quality, high interest independent reading selections.
- Provide a flexible use space that supports dynamic instruction, independent inquiry, collaborative learning, and individualized study.
- Provide a wide range of print and non-print materials to supplement classroom instruction and student intellectual growth.
- Collaborate with teachers on direct instruction of issues related to information and media literacy.

# EXTRA-CURRICULAR ACTIVITIES

These activities are offered to help our students interact with their classmates and the school community outside of their traditional school experience in order to expand students' independent interests and pro-social interactions.

Sample list of activities:

Art Club  
Camera Club  
Fins, Feathers, and Fur Club  
Music Club  
National Honor Society  
Outing Club  
School Council  
Ski/Snowboarding Club  
Student Council  
Student Equity Team/Gay Straight Alliance  
Student Peer Mediation  
Varsity Club  
Yearbook  
BMX and Skateboard Club

# CO-CURRICULAR ACTIVITIES

Membership in these national organizations is offered to students who wish to pursue their career and technical education further with research, travel, project-based learning, and competitions at the regional, state, and national level. The Franklin County Technical School has a history of student achievement in these organizations.

SkillsUSA  
Future Farmers of America (FFA)  
Business Professionals of America (BPA)  
Drumline

# ATHLETICS

The Franklin County Technical School Athletic Department is a member of, and abides by, the rules of the Pioneer Valley Interscholastic Athletic Conference and the Massachusetts Interscholastic Athletic Association.

Athletics at the Franklin County Technical School are open to all students providing they meet school and MIAA rules.

At the end of each sport season there is a banquet held for all athletes. Varsity letters are awarded to those athletes meeting the requirements. Junior Varsity athletes receive their numbers. Once an athlete has received both of these awards they will receive a certificate and pin.

## SPORTS PROGRAMS 2015-2016

Offered subject to sufficient participation as follows:

### **FALL**

Cross Country- Girls and Boys  
Field Hockey  
Football  
Golf  
Soccer –Boys  
Soccer- Girls  
Volleyball - Girls

### **WINTER**

Basketball - Girls  
Basketball – Boys  
Wrestling – Girls and Boys

### **SPRING**

Baseball  
Softball  
Track & Field – Girls and Boys