

# Keefe Technical High School

*Program of Studies*

2024-2025



# FOREWORD

Dear Student:

This Program of Studies is intended to give you a general overview of the courses offered at Keefe Regional Technical School. It should be helpful in selecting your classes for the coming year.

The Program of Studies and all other related school services offered at Keefe Regional Technical School are established in an effort to meet the individual needs of each student. We believe that the South Middlesex Regional Vocational Technical School District offers the best of both worlds to our students: academic excellence and career/technical skills. Students who attend Keefe Regional Technical School find their passion for skills-based learning and meet the academic requirements for life-long learning.

I encourage you to discuss your career options with your parents and make decisions that will assist you in obtaining course and career goals. We have many opportunities for you to be successful. Good decision making and career planning is the best way to begin.

Sincerely,

A handwritten signature in black ink that reads "Shannon Snow". The letters are cursive and fluid, with the first letter of each name being capitalized and larger than the others.

Shannon Snow  
Principal

# **KEEFE REGIONAL TECHNICAL SCHOOL**

## **MISSION STATEMENT**

The mission of Keefe Regional Technical School is to challenge students to demonstrate the academic, technical, and interpersonal skills necessary for successful lifelong learning.

## **PHILOSOPHY**

Our central purpose is to provide up-to-date technical training and marketable skills to high school students. Curricula are designed to integrate career/technical and academic areas. This training will ultimately lead to satisfying employment in our global economy. Our students may become employed directly after Graduation or after pursuing further education.

Academic core subjects are English, mathematics, sciences, and social studies. A wide range of instructional settings exists to help all students achieve their individual maximum competencies. Co-curricular and extra-curricular activities further support student development.

At Keefe Regional Technical School, a student's complete education includes the development of good work habits, citizenship, and a desire for lifelong learning. Our Programs foster student self-esteem, self-respect, and social awareness. Students are to participate actively in their education and to make learning their primary goal. During their training, students will undertake school projects that will benefit our member communities and their residents.

We provide our students with skills and academic training in a safe learning environment. It is the responsibility of staff and students to develop positive relationships throughout the school. Instructors will help to foster these relationships by teaching in structured, challenging, and supportive settings. The administration will help instructors and students by providing an avenue for open and constructive dialogue within a well-disciplined environment.

# ACCREDITATION STATEMENT

The Keefe Regional 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 necessary resources to achieve its stated purposes through appropriate educational Programs, is substantially doing so, and gives 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 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 Association at the following address:

**Commission on Public Secondary Schools  
New England Association of Schools and Colleges  
209 Burlington Road  
Bedford, MA 01730-1433**

**Please note:** The description of a course in this Program of Studies indicates the ability of Keefe Regional Technical School staff to provide the experience. However, if an inadequate number of students select a specific course, it will not be possible to offer the course. In cases where courses are oversubscribed, priority for enrollment will be first given to seniors, then juniors, then sophomores, and then freshmen, and the guidance department and administration will make determinations based on the best interest of the student. Students who are unable to be enrolled in a course of their first choice will be offered an alternative course.

## **DISTRICT INFORMATION**

Keefe Regional Technical School is a part of the South Middlesex Regional Vocational Technical School District. The regional school district includes five towns: Ashland, Framingham, Holliston, Hopkinton and Natick. Each member town has its own high school facility. Students residing in the district, however, have the option of attending Keefe Regional Technical School to pursue technical studies in addition to traditional academic course work.

# KEEFE REGIONAL TECHNICAL SCHOOL ADMINISTRATION

Mr. Jonathan Evans	Superintendent-Director
Dr. Shannon Snow	Principal
Ms. Dolores Sharek	Director of Finance and Business Operations
Mr. Kenneth Collins	Assistant Principal
Mr. Joseph Flynn	Director of Career and Technical Education
Dr. Rebecca Swasey	Academic Assistant Principal
Ms. Adrienne Bogusky	Director of Guidance and Admissions
Mr. Michael Dolan	Director of Special Education
Mr. Domenic Jannetti	Director of Satellite Vocational Programs and Facilities

## KEEFE REGIONAL TECHNICAL SCHOOL COUNSELORS

Sarah Cupertino	School Counselor Grade 9 (last names G-N) (bilingual A-D) Grade 10 (last names H-N) (bilingual A-D) Grade 11 (last names H-L) (bilingual A-D) Grade 12 (bilingual A-F)
Andrea Fisichella	Lead Counselor Grade 9, 10, 11 and 12 (last names L-Z)
Stacey Lyskowski	School Counselor Grade 9, 10, 11 and 12 (last names A-K)
Krishna Soares	School Counselor Bilingual (all Grades)

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# INTRODUCTION

The Integrated Comprehensive Program of Studies is designed to assist parents and students in selecting courses that will best meet the needs of each student. The student's individual Program should be based on ability, past achievement, school requirements and career goals. Counselors and classroom teachers will provide recommendations based on the student's performance and ability level. A full college preparatory and honors Program is available.

Keefe Regional Technical School strives to allow each student to be successful. Planning for the future is an important part of this success. Academic courses are designed to meet the learning standards set forth in the State Curriculum Frameworks.

All Grade 9 students take a core curriculum in English, mathematics, science, social studies, physical education, and health. In addition to the academic core, all Grade 9 students spend three periods every other week in a career exploratory Program. In this Program, students explore eight Career/Technical areas and receive career counseling in each area.

Grade 10 students enter a CTE Program that meets every day/five days per week on an every other week rotation. This Program continues through Grades 11 and 12 with possible internship and co-op placement during Grades 11 and 12. Students receive training in one of the following areas:

Automotive	Design & Visual Communications	Landscape Design & Horticulture
Carpentry	Early Childhood Education	Legal & Protective Services
Cosmetology	Electrical	Metal Fabrication & Joining Technologies
Culinary Arts	Plumbing	Programming & Web Development
Dental Assisting	Health Careers	
	HVAC/R	
	Information Technology	

Academic classes for Grades 10, 11, and 12 meet on an every other week basis. As with Grade 9, students take a core curriculum of English, mathematics, science, social studies, physical education, and health. Senior Seminar is required for students who are enrolled in one of our fifteen CTE Programs. Career /Technical Senior Project, transition, and academic components of CTE comprise the subject matter of this course.

Articulation agreements with local colleges provide students in Automotive Technology, Culinary Arts, Early Childhood Education, Information Systems. Qualifying seniors may participate in a dual enrollment Program with a college.

Internships and co-operative education Programs are available to qualifying juniors and seniors. In co-op, students participate in paid work experiences in their CTE fields of study while continuing to earn credit toward their diploma.

# ADMISSIONS

Prospective students are able to apply to Keefe Regional Technical School through an online application or with a paper one. Students interested in applying online can create an account and submit their application at [www.keefetech.go2cte.com](http://www.keefetech.go2cte.com). If students are more comfortable with a paper format a Keefe Regional Technical School application is available from the Guidance Departments at all sending schools in the South Middlesex Regional Vocational Technical School District or through the Keefe Regional Technical School Guidance Office.

Our admissions review is based on attendance, Grades, discipline, sending school recommendation, and an interview. Admissions representatives will work with applicants and their families on transitioning to Keefe Tech.

The following information needs to be submitted with your application for Grade 9 fall admission:

- Final report card for Grade 7 and the most recent Grade 8 report card with teacher comments;
- Attendance/tardiness record for Grades 7 and 8;
- Discipline record for Grades 7 and 8;

If you have any questions, please contact the Guidance Office at 508-416-2270.

## **EQUAL ACCESS**

All courses of study, co-curricular activities, services, and facilities offered at South Middlesex Regional Vocational Technical School District (Keefe Regional Technical School) are available to all students without regard to race, color, national origin, gender identity, religion, limited English proficiency, sexual orientation, disability, or housing status. (Title IX, Chapter 622)

## **SCHOOL COUNSELING PROGRAM**

The Keefe Regional Technical School Counseling Department consists of a full-time administrator, three full-time counselors, and an admissions school counselor. The Director is responsible for the coordination of all guidance and counseling services for Grades 9-12. The counseling load for each of the three full-time counselors is less than 250 students, and students remain with the same counselor for all four years of high school.

School counseling services are an integral part of the total educational process at Keefe Regional Technical High School. The primary goal and function of the department is to assist ALL students through a planned Program of developmental guidance and counseling services, to understand themselves in relation to their goals, abilities, interests, and needs. This planned Program of services assists the student in developing the critical-thinking and decision-making skills necessary in order to formulate future goals and plans that help each student reach maximum Growth potential. An appropriate school counseling Program in the academic/technical, workplace readiness, and personal/social domains is one that provides each student with a sense of belonging and stability during his/her high school years.

Such a Program is a shared endeavor of the student, parent, and school counselor. The guidance faculty assumes the roles of facilitator, teacher, consultant, advocate, and counselor in order to assist each student in his/her social, psychological, educational, career/technical goals, and in the development of a relevant Career Plan. Counselors are readily available to students and families by appointment and without appointments in times of significant need.

Every student is assigned a school counselor who will work with the student, parents, teachers, and other professionals. Primarily, the counselor assists the student in addressing concerns and decisions about course selections, school Progress, personal and social relationships, and educational and career-technical planning. Some small Group counseling and support Groups are available. The school counseling department has a collection of career materials and information on schools and colleges, scholarships, and supplementary material. It has established a network of referrals with community agencies to assist students and their families who are in need of specialized assistance.

## **GOALS**

- To develop each student's decision-making capabilities particularly as related to academic/technical, workplace readiness, and social development that includes the development of a relevant Career Plan;
- To help a student deal with personal problems and, if necessary, make referrals to appropriate school or community resources;
- To assist in the student's transition/adjustment from middle school to high school and high school to adulthood;
- To continually evaluate the student's academic Progress and suggest to students and parents appropriate courses of action;
- To assist parents and students in developing realistic perceptions of the student's aptitudes, abilities, and interests as they relate to educational/career planning and personal/social goals;
- To serve as a consultant to administrators and teachers by providing and suggesting materials and experiences that will help them to better understand the individuality and unique needs of each student;
- To foster in the student a sense of personal responsibility and a respect for ethnic and cultural diversity.

## **AFTER-SCHOOL AND EVENING PROGRAMS**

The School Counseling and Admissions Department sponsors and/or participates in a number of informational after-school and evening Programs throughout the year:

- Accepted Students Day – Incoming eighth Graders
- Grade 9 Parent Information Night
- Parent/Teacher Night
- Career Night Open House – Prospective middle school students and high school transfer students
- Welcome Orientation Dinner – Accepted incoming grade 9 students and families
- Financial Aid Night
- Junior College Planning Night
- Senior Awards Night

Depending on the event, the date can be found on the Keefe Regional Technical School website ([www.keefetech.org](http://www.keefetech.org)), the current school calendar, or by contacting the Guidance Department.

## **COURSE SELECTION**

As you plan your Program of studies, you should choose subjects which will give you an adequate foundation in English, Mathematics, Social Studies, Science, and Career/Technical Education. You should make your choice a realistic one in keeping with your goals, your interests, your abilities, and your aptitudes.

Each counselor aims to assist the student during his/her high school years. These are the steps in developing the most appropriate individual Program of studies for each student:

- Faculty recommendations
- Individual meetings with counselors to select courses
- Parental/guardian review and signature approval

## **COURSE CHANGES AND WITHDRAWALS**

In order to minimize changes in their Program, students should carefully select the courses they plan to take the following year. It is the student's responsibility to read the course information in the Program of Studies.

All necessary course changes should be made early in the school year prior to the deadline communicated by the Guidance Department, which will be prior to October 1<sup>st</sup>. Any course changes made after this deadline will require Administrative Approval.

## **ADVANCE PLACEMENT AND HONORS LEVEL COURSES**

Advanced Placement and Honors level courses move at a rapid pace and are more in-depth than college preparatory courses. As a result, students must be highly motivated and prepared to work independently. The successful completion of one AP or honors course does not always lead to placement into another. As a student advances through the AP or honors Program of course offerings, each succeeding course may become more difficult. Standardized test scores often are used together with a student's Grades to determine eligibility for AP and/or honors courses.

The following prerequisites apply to all students interested in pursuing AP and/or Honors courses:

1. Current teacher approval during the course selection process;
2. Departmental approval for special circumstances;
3. Students must be responsible, conscientious, highly motivated, and able to work independently;

4. Approval of the Academic Assistant Principal.

Students and parents may appeal a student's denial of acceptance into an AP or Honors level course through the guidance department. Upon review, the Administrative Leadership Team will notify students and parents of the final placement decision within two weeks of appeal.

## GRADUATION REQUIREMENTS

<b>DISCIPLINE</b>	<b>CREDITS</b>	<b>Required to Pass</b>
<b>English Language Arts</b>	<b>5.0</b>	<b>5.0 (4 courses total)</b>
<b>Mathematics</b>	<b>5.0</b>	<b>5.0 (4 courses total)</b>
<b>Science and Technology</b>	<b>5.0</b>	<b>3.0 (3 courses total)</b>
<b>History and Social Sciences</b>	<b>4.0</b>	<b>3.0 (3 courses total)</b>
<b>World Language</b>	<b>Optional</b>	<b>Optional</b>
<b>Career and Technical</b>	<b>21.0</b>	<b>21.0</b>
<b>Physical Education/Health</b>	<b>1.75</b>	<b>.5 (2 years of Phys Ed)</b>
<b>Electives</b>	<b>7.0</b>	<b>6.0</b>
<b>TOTAL</b>	<b>48.75</b>	<b>42.5</b>

\*\*English and math must be taken each of the four years of high school.

## PROMOTION REQUIREMENTS

<b>Year</b>	<b>Suggested Credits</b>	<b>Required Credits</b>
<b>End of Freshman Year</b>	<b>12</b>	<b>7</b>
<b>End of Sophomore Year</b>	<b>24.25</b>	<b>18</b>
<b>End of Junior Year</b>	<b>44.5</b>	<b>30.25</b>
<b>End of Senior Year</b>	<b>48.75</b>	<b>41.5</b>
<b>Total Credits for Graduation</b>	<b>48.75</b>	<b>42.5</b>

School Counseling representatives support students in all classes to meet Graduation requirements. Over the last three years there has been an increase in the number of elective credits students need to earn in order to meet graduation requirements. Beginning with the Class of 2019, students will need to earn 6.0 elective credits to be eligible for graduation. These additional credits can be earned through successful completion on a variety of coursework, including Foreign Language courses and additional coursework in Social Studies or Science.

All students must complete four years of high school and satisfy all Graduation requirements in order to receive a South Middlesex Regional Vocational Technical School District diploma. All students must also pass the MCAS test (Massachusetts Comprehension Assessment System) or must earn a competency determination in order to receive a South Middlesex Regional Vocational Technical School District diploma. **Changes in courses, sequence, or requirements may result, subject to School Committee approval.**

## **DETERMINATION OF GRADES**

The South Middlesex Regional Vocational Technical School District recognizes that no one method of student assessment and Grading can be all encompassing. Assessment and Grade reporting at the high school is considered a positive tool to measure Growth, Progress, and the development of the student. The unique demands and challenges of academic classroom learning and experiential career technical preparation make necessary a varied focus.

Each course has an established syllabus that provides the description, philosophy and goals, highlights of major projects and activities, and assessment plan of the course. The Grading policy will address the following areas: class attendance, class participation, homework, tests, quizzes, projects, working with others, class notes, and, if applicable, extra credit. The course syllabus will also indicate the amount of and quality of work necessary for a student to earn an A or B.

Our expectation is that students strive to demonstrate proficient performance in both academic and career and technical preparation in both knowledge and skills as measured by the state and federal curriculum standards.

## **REPORT CARDS**

Report cards indicate the student's achievement in each course, his/her habits of studies, attitude, attendance, and other factors which are indicative of his/her record. They are issued at the end of each term. Advanced report cards may be issued in the case of unique extenuating circumstances and must be separately approved as such, in advance, by the Principal.

## **METHOD OF MARKING AND TERM GRADES**

### SCHOLASTIC ACHIEVEMENT

90-100	High Honor
85-89	Honor Roll
80-84	Good
75-79	Average
70-74	Low Average
60-69	Low Passing
Below-60	Failing

## **HONOR ROLL**

To be eligible for the honor roll, students must complete each of his/her courses receiving quality points.

- **High Honor Roll** – Students may not receive a Grade below 90% in order to make High Honor Roll status.
- **Honor Roll**—Students may not receive a Grade below 80% in order to make Honor Roll status.

## LETTER/NUMBER GRADE CONVERSION GUIDELINES

The School Counseling Department will use these guidelines to convert final semester Grades and to convert “Grade in Progress” for those students who transfer to Keefe Regional Technical School from other systems or schools.

<b>A</b>	<b>94-100</b>	<b>B+</b>	<b>87 – 89</b>	<b>C+</b>	<b>77 – 79</b>	<b>D+</b>	<b>67 - 69</b>	<b>F</b>	<b>0-59</b>
<b>A-</b>	<b>90-93</b>	<b>B</b>	<b>84 – 86</b>	<b>C</b>	<b>74 – 76</b>	<b>D</b>	<b>60 - 66</b>		
		<b>B-</b>	<b>80 – 83</b>	<b>C-</b>	<b>70 – 73</b>				

## GRADE POINT AVERAGE PHILOSOPHY

A weighted Grade Point Average (GPA) will be determined for all Keefe Regional Technical High School students based on a 4.0 scale. The GPA will be based on Grades in Academic subjects and Career/Technical courses. Weight shall be given to Advanced Placement courses (+1.0) and honors level courses (+.5) according to the following scale.

<b>GRADE</b>	<b>COLLEGE PREP</b>	<b>HONORS</b>	<b>AP</b>
<b>A</b>	<b>4.0</b>	<b>4.5</b>	<b>5.0</b>
<b>A-</b>	<b>3.7</b>	<b>4.2</b>	<b>4.7</b>
<b>B+</b>	<b>3.3</b>	<b>3.8</b>	<b>4.3</b>
<b>B</b>	<b>3.0</b>	<b>3.5</b>	<b>4.0</b>
<b>B-</b>	<b>2.7</b>	<b>3.2</b>	<b>3.7</b>
<b>C+</b>	<b>2.3</b>	<b>2.8</b>	<b>3.3</b>
<b>C</b>	<b>2.0</b>	<b>2.5</b>	<b>3.0</b>
<b>C-</b>	<b>1.7</b>	<b>2.2</b>	<b>2.7</b>
<b>D+</b>	<b>1.3</b>	<b>1.8</b>	<b>2.3</b>
<b>D</b>	<b>1.0</b>	<b>1.5</b>	<b>2.0</b>

A Grade of 59 and below in an academic course receives no points, but the course will be included in the divisor when factoring the average.

The two highest GPAs will determine class valedictorian and salutatorian. To qualify for this honor, a student must be enrolled as a full-time student at Keefe Tech prior to the start of his/her junior year. Class valedictorian and salutatorian will be selected based on the Term 2 GPA during senior year.

Credits earned at another high school will be evaluated by a school counselor and approved by the Director of Guidance. Grades received outside by a transfer student at the school previously attended will be adjusted to the quality point system of Keefe Regional Technical High School in order to determine class rank. Transfer credits earned will be reflected on the Keefe Regional Technical High school transcript. A copy of the transcript from the sending school can be included in addition to the Keefe Regional Technical High School transcript when official transcripts are required.

AP Level (+1.0) Advanced Placement - Rigorous College-Level coursework.

Level I – H (+0.5) Honors - More extensive and intensive treatment of subject matter. Independent assignments determined by department curriculum.

Level II – CP1 Standard college preparatory curriculum. Written projects as determined by department curriculum. Percentage of variety of objective and subjective questions on tests and examinations as determined by department curriculum.

Level III – CP2 Standard college preparatory curriculum

## **EXTRA CURRICULAR ELIGIBILITY RULES**

A student cannot, at any time, represent Keefe Regional Technical School unless he/she is a student in good standing in his/her academic and Career/Technical Programs. Students must be passing nine credits based on the last marking period in order to be eligible for athletics and participation in activities.

## **LIBRARY/MEDIA INFORMATION CENTER**

The Library/Media Information Center is located on the top floor of the Main building. The center is a resource area which serves students, teachers, and counselors. It is staffed by a full-time librarian six hours a day and five days a week. Resources in the center include: interest inventories, occupational briefs, updated government employment figures, reference books, catalogues and pamphlets for colleges, universities, technical and trade schools, the military, a college and career video library and information concerning athletic eligibility for colleges and universities.

There are a number of computer stations as well as printers for student use in relation to research, career plans, and college information.

## **ACADEMIC EDUCATION**

### **PHILOSOPHY**

All academic coursework is provided at the college preparatory level in adherence to the standards and expectations of the Massachusetts Curriculum Frameworks. Honors level learning is provided in all core academic content areas for students seeking a rigorous, four-year college pathway. Opportunities exist for all students to gain academic support through enrichment electives and extra-help sessions. It is the intent of the Keefe Regional Technical School administration and faculty to provide rigorous course offerings in order to challenge students to achieve to their highest potential.

Keefe Regional Technical School students are required to enroll in six credits of core English and mathematics coursework and five credits of science and social studies coursework, all at the college preparatory or honors level. A student's guidance counselor will work throughout the four years to establish and revise a career plan that identifies additional academic electives that will best guarantee meeting college and career goals. Students are required to participate in a four-year comprehensive, developmental health and physical education Program. Additionally, all students must enroll in Technological, Entrepreneurship & Business Management and Employability Knowledge and Skills coursework that directly support career preparation.

### **ENGLISH**

Each year students are required to take and successfully complete an English course; they must earn a minimum of six credits overall with eight or more credits possible. The curriculum, a combination of traditional academic materials that adhere to the Massachusetts Curriculum Frameworks for English Language Arts and Literacy and integrated career technical assignments, provides students with both the skills necessary for further education and the practical experience necessary to succeed in a competitive work force.

In the freshman year, students take prescribed literature and composition courses that are supported by reading enrichment or writing workshops. In the sophomore year, students take American Literature with an emphasis on literature and composition. In the junior and senior years, students take the core courses World Literature and Survey of Literary Analysis/Rhetoric, respectively. Seniors in the honors program take British Literature. There are also two AP ELA courses available to students before they graduate. All courses require standards-based assessments by unit and final exams.

**1001 – LITERATURE & COMPOSITION I HON - (GR 9)**

**2 CREDITS**

This course is designed for students who excelled in middle school language arts and have demonstrated advanced reading skills. Students will read a variety of literary genres including the short story, the play, the epic, the novel, poetry, and the essay. Students will learn literary terms and be asked to apply those terms as they analyze and interpret the literature. Students who select this course should be able to work more independently, participate in a faster paced program, contribute to class discussions using higher level thinking skills, and be intrinsically motivated to learn. Enrichment topics are added as time permits. Students will learn to write precisely and clearly while mastering Grammar and usage and acquiring a more mature vocabulary. Students will practice techniques for revising and editing their own work. Writing assignments focus on literary analysis, the essay, narrative, creative writing, and a research project.

**1002 – LITERATURE & COMPOSITION I CP1 - (GR 9)**

**2 CREDITS**

This course is designed to help students strengthen the reading, speaking, and listening skills developed in middle school language arts. Students will develop their vocabularies and improve their reading skills while completing both fiction and non-fiction readings including the short story, the play, the epic, the novel, poetry and the essay. Students will learn literary terms and apply these terms to the readings. Students who select this course should have a solid background in reading. Students will learn the rules of usage and grammar and are expected to write clearly, concisely, and correctly. Through editing and proofreading, students will focus on syntax, spelling, vocabulary, punctuation, and capitalization skills. Writing assignments will focus on literary compositions, expository, narrative, and creative writing.

**1003 – LITERATURE & COMPOSITION I CP 2- (GR 9)**

**2 CREDITS**

This course is designed to help students who need to improve their reading, writing, and communication skills in order to be successful at the high school level. Students will read some abridged versions of books that are read in the other CP level course as well as other unabridged books. Students will develop their vocabularies and improve their reading skills while completing readings including the short story, the play, the epic, the novel, poetry, and the essay. Students will learn literary terms and will use these terms to help them understand what they read. Students will learn the rules of usage and grammar and will be expected to write clearly, concisely, and correctly. Through editing and proofreading, students will focus on syntax, spelling, vocabulary, punctuation, and capitalization skills. Writing assignments will focus on literary compositions, expository, narrative, and creative writing.

**1021 – AMERICAN LITERATURE HON - (GR 10)**

**1 CREDIT**

This course is designed to explore modern American literature with a focus on diverse young adult texts. Specific authors include Steinbeck, Alexie, Fitzgerald, Green, Frost, and Poe. Honors level students are expected to complete challenging requirements including, but not limited to, textual analysis, presentations, essays, and other outside, research based assessments. The course is based on the assumption that students who elect it are already proficient in writing, thus it is aimed at enhancing skills students already possess, rather than teaching basic skills. Students will be required to write, to peer edit, and to study the works of professional writers – both fiction and non-fiction. Consideration will be given to the study of the works of outstanding American writers.

**1022 – AMERICAN LITERATURE CP1 - (GR 10)**

**1 CREDIT**

This college preparatory course is structured as a survey of modern American literature with a focus on diverse young adult texts. Students will be required to write various types of essays and compositions, including extended essay questions, designed to refine and improve critical thinking and writing skills. Some assignments will require that students demonstrate an understanding of societal and literary concepts specific to the contemporary period, for example, the American Dream. Students will continue to develop their skills in using standard English to produce concise and well-organized prose.

**1023 – AMERICAN LITERATURE CP2 - (GR 10)****1 CREDIT**

This college preparatory course is structured as a survey of modern American literature with a focus on diverse young adult texts. Students will be required to write various types of essays and compositions, including extended essay questions, designed to refine and improve critical thinking and writing skills. Assignments will require that students demonstrate an understanding of thematic and structural elements of assigned readings. Students will continue to develop their skills in using standard English to produce concise and well-organized prose.

**1041 – WORLD LITERATURE HON - (GR 11)****1 CREDIT**

This course will offer a survey of world literature from a variety of time periods and geographical locations. Selections will reflect the seminal values and culture of the era and location through short stories, passages, novels, memoirs, poetry and plays. Students will enhance their writing skills through textual analysis, presentations, essays, and research-based projects. This is a reading intensive course.

**1042 – WORLD LITERATURE CP1 - (GR 11)****1 CREDIT**

This course will offer a survey of world literature from a variety of time periods and geographical locations. Selections will reflect the seminal values and culture of the era and location through short stories, passages, novels, memoirs, poetry and plays. Students will enhance their writing skills through textual analysis, presentations, essays, and research-based projects.

**1043 – WORLD LITERATURE CP2 - (GR 11)****1 CREDIT**

This course will offer a survey of world literature from a variety of time periods and geographical locations. Selections will reflect the seminal values and culture of the era and location through short stories, passages, novels, memoirs, poetry and plays. Students will enhance their writing skills through textual analysis, presentations, essays, and research-based projects.

**1202 –LITERATURE & RHETORIC CP1 - (GR 12)****1 CREDIT**

Senior English CP1 Literature and Rhetoric focuses on the importance of both literary composition and analysis. The course will concentrate on the skills necessary for post-secondary writing, editing and literary analysis. Additional units will incorporate the use of databases, research topics, the development of senior projects and oral presentations.

**1212 –LITERARY ANALYSIS AND CAREER AND TECHNICAL WRITING CP1 - (GR 12)****1 CREDIT**

Senior English CP1 Literary Analysis and Career and Technical Writing focuses on the importance of both literary composition and analysis. The course will concentrate on the skills necessary for career and technical writing and editing, such as instructional texts, business communications and proposals. Additional coursework will focus on the elements of research and argument, senior presentations and film and literature.

**1100 –AP ENGLISH LANGUAGE & COMPOSITION - (GR 11)****1 CREDIT**

This course engages students in becoming skilled readers of prose written in a variety of rhetorical contexts, and in becoming skilled writers who compose for a variety of purposes. Both their writing and their reading should make students aware of the interactions among a writer's purposes, audience expectations, and subjects as well as the way generic conventions and the resources of language contribute to effectiveness in writing.

**1110 –AP ENGLISH LITERATURE & COMPOSITION - (GR 12)****1 CREDIT**

Following the College Board's suggested curriculum designed to parallel college-level English courses, the AP English Literature and Composition course enables students to develop critical standards for evaluating literature. Students study the language, character, action, and theme in works of recognized literary merit; enrich their understanding of connotation, metaphor, irony, syntax, and tone; and write compositions of their own (including literary analysis, exposition, argument, narrative, and creative writing).

**1111 – BRITISH LITERATURE HON - (GR 12)****1 CREDIT**

This course is structured as a survey ranging from the Anglo-Saxon period to the modern age. Students will be required to write various essays based on novels discussed and analyzed in class. Students will read and analyze works of such authors as Chaucer, Swift, Shakespeare, Milton, and Orwell. This course is reading-intensive with a strong emphasis on refining students' writing skills in preparation for college-level work. This course is designed for the student with intentions of attending a four-year college.

**WORLD LANGUAGE****1802 – SPANISH I CP1****1 CREDIT**

Spanish I is designed for students who wish to apply to colleges that have a foreign language entrance requirement. The course is a combination of grammar-based and communication-based Programs that integrate material applicable to the world of work. In addition to vocabulary and grammar exercises, students also have ample opportunity to practice speaking Spanish through dialogues and question-and-answer exercises. A limited introduction is given to Spanish and Latin American cultures. This course adheres to standards set forth in the Massachusetts Curriculum Frameworks.

**1812 – SPANISH II CP1****1 CREDIT**

Spanish II, a continuation of Spanish I, is designed for students who wish to apply to colleges that have a foreign language entrance requirement. The review material is expanded and enhanced. Also, emphasis is placed on students increasing their vocabulary, grammar, writing, speaking, and listening skills. As in Spanish I, consideration is given to the study of Spanish and Latin American culture and histories. This course adheres to standards set forth in the Massachusetts Curriculum Frameworks. This course is appropriate for students who have completed Spanish I and II, or who are native Spanish speakers that are looking to take a language class. This class is also appropriate for graduates of Framingham's two-way immersion Program.

**1822 – SPANISH III CP1****1 CREDIT**

The skills learned in Spanish I and II are put to extensive use via more complex grammar structure and the reading of short stories to develop vocabulary. At this level, students should be able to communicate well in all forms of Spanish, including writing short stories, reading some famous Spanish literary works, and having conversations in Spanish.

**1832 – SPANISH IV CP****1 CREDIT**

This course is appropriate for students who have completed Spanish III and are prepared to take on the challenge of an advanced language course or who are native Spanish speakers that are looking to take a language class. This class is also appropriate for graduates of Framingham's two-way immersion program. Spanish IV begins with a comprehensive review of the curriculum taught in Spanish III and will focus on communication in all modes (presentational speaking and writing, interpersonal, and interpretive listening and reading). Students will utilize authentic resources such as speeches, videos, and newspaper articles to explore the cultures of the Spanish-speaking world.

**1843- SPANISH LANGUAGE, CULTURE AND LITERATURE HONORS****1 CREDIT**

This course is composed of thematic units using intermediate/advanced authentic text and media resources with emphasis on the development of language skills within the four modes of communication - interpretive, presentational, interpersonal, and intercultural, through the use of authentic texts, including videos, audios, articles, blogs, interviews, and literature gathered from Spain and Latin America. Students will be accountable for readings and presentations in Spanish. Hispanic culture will be further examined through the study of history, literature, art, music, and current events. The class is taught exclusively in Spanish, and grades will reflect that students use Spanish almost exclusively in the classroom.

**1702 – PORTUGUESE I CP 1****1 CREDIT**

Portuguese I is designed to be a combination of grammar-based and communication-based programs that integrate material applicable to the world of work. In addition to vocabulary and grammar exercises, students also have ample opportunity to

practice speaking Portuguese through dialogues and question-and-answer exercises. A limited introduction is given to Portuguese and Latin American cultures. This course adheres to standards set forth in the Massachusetts Curriculum Frameworks.

**1712 – PORTUGUESE II CP 1**

**1 CREDIT**

Students continue to further develop and improve listening, speaking, reading and writing skills. Emphasis is placed on comprehension of Portuguese, as well as reading and writing practice in the target language using a variety of activities incorporating familiar vocabulary and structures. Supplementary materials are introduced to enhance language use. This course adheres to standards set forth in the Massachusetts Curriculum Frameworks.

**1722 –PORTUGUESE III CP 1**

**1 CREDIT**

The skills learned in Portuguese I and II are put to extensive use via more complex grammar structure and the reading of short stories to develop vocabulary. At this level, students should be able to communicate well in all forms of Portuguese, including writing short stories, discussing Portuguese literary works, and having conversations in Portuguese.

**1732- PORTUGUESE LANGUAGE, CULTURE AND LITERATURE H**

**1 CREDIT**

This course is composed of thematic units using intermediate/advanced authentic text and media resources with emphasis on the development of language skills within the four modes of communication - interpretive, presentational, interpersonal and intercultural, through the use of authentic texts, including videos, audios, articles, blogs, interviews, and literature gathered from Brazil and Portugal. Students will be accountable for readings and presentations in Portuguese. Culture will be further examined through the study of history, literature, art, music and current events. The class is taught exclusively in Portuguese and grades will reflect that students use Portuguese almost exclusively in the classroom.

## **MATHEMATICS**

The Mathematics curriculum is structured to best address the broad needs of students. All courses are designed for students who learn best in an applied approach. The department advances five major goals for students:

1. Learn to value mathematics as a tool to explore relationships between mathematics and the many disciplines it serves.
2. Gain confidence in using mathematical power to make sense of new problem situations and the world in which we live.
3. Develop ability in solving problem situations independently and in a cooperative group setting.
4. Given opportunities to read, write and discuss ideas, use the signs, symbols, and terms of mathematics.
5. Gather evidence, make conjectures, develop and support rationale using mathematical reasoning.

Students are required to complete successfully the objectives of six credits of mathematics coursework but may elect up to eight credits. Aspects of mathematics that emphasize real-life situations are integrated regularly throughout all the mathematics courses. All courses are college preparatory and fully address the goals and objectives of the Massachusetts Curriculum Frameworks.

The Honors mathematics pathway moves from Algebra Two to Geometry to Advanced Algebra and Pre-Calculus with senior year expectation of Calculus. Additional electives are available dependent upon student career plans. The majority of students follows a college preparatory pathway beginning with Algebra One but may elect Honors-level courses. The need for technological proficiency is recognized at all levels and in all courses. Students are encouraged and trained to use calculators to speed arithmetic calculations, for advanced analysis, and to explore relationships and concepts, visualize solutions, and promote hypothetical modeling of real-life situations. Additional methods utilizing computer software for exploration and analysis are also employed in all courses.

**2001 – ALGEBRA I HON (GR 9)**

**2 CREDITS**

This is a rigorous course in algebra, aligned to the Common Core, which introduces abstract concepts by the use of symbolism in which quantitative relationships can be stated in general terms. Emphasis is on the relationship of the real number system. Manipulation of symbols according to mathematical laws requires a thorough understanding of fundamentals. Particular areas of emphasis include factoring, powers, functions, and the solution of linear, simultaneous, and quadratic equations. Applications will be emphasized.

**2002– ALGEBRA I CP1 - (GR 9)**

**2 CREDITS**

CP Algebra I is a course that is designed to provide a solid foundation of algebra following the Common Core where students learn variable notation, operations, manipulations, functional notation, linear functions, and modeling. Students also engage in the development of components to and the applications of quadratic equations and models. Applications of concepts will be explored. This course is appropriate and necessary as preparation for the Massachusetts Comprehensive Assessment System exam.

**2003– ALGEBRA I CP2 - (GR 9)**

**2 CREDITS**

Algebra I is a course that is designed to provide a solid foundation of algebra following the Common Core Frameworks where students learn variable notation, operations, manipulations, functional notation, polynomial operations, linear functions, and modeling. Students also engage in the development of components to and the applications of quadratic equations and models. This course is appropriate and necessary as preparation for the Massachusetts Comprehensive Assessment System exam.

**2071– HONORS ALGEBRA II – (GR 9)**

**2 CREDITS**

This honors-level course is intended for students who are capable of benefiting from an accelerated and deeper treatment of the topics of an Algebra II-Trigonometry course in one year. Following the Common Core Frameworks, topics will include: properties and operations in the real number system, sequences and series, graphing and solving quadratic equations, systems of equations, functions, graphing first- and second-degree equations, and the elements of coordinate geometry. Students will learn to solve a wide range of problems using a graphing calculator.

**2041 – GEOMETRY HON - (GR 10)**

**2 CREDITS**

The objective of this rigorous honors course is for students to develop an understanding of the mathematics of spatial forms and how this branch of mathematics lends itself to the art of reasoning. It places considerable emphasis on fundamental principles of logic and the role they play in the inductive and deductive processes. Following the Common Core Frameworks, basic definitions, postulates and theorems are critically examined and subsequently applied to a detailed study of angles, triangles, quadrilaterals, perpendicularity, and parallelism. Although mastery of concepts in two-dimensional geometry is the primary goal of the course, three-dimensional concepts are also introduced.

**2042 – GEOMETRY CP1 - (GR 10)**

**2 CREDITS**

This college preparatory course will guide students in their understanding of the basic principles of geometry and help develop spatial visualization skills. It will allow time to develop deductive reasoning. Following the Common Core Frameworks, main topics will include: the study and analysis of the characteristics and properties of two-dimensional shapes, transformations, congruence, similarity, and measurement. Students will also develop an understanding of geometric and algebraic relationships through coordinate geometry as well as algebraic angle relationships. Emphasis is placed upon connected concepts useful for further career technical study.

**2023 – INTEGRATED ALGEBRA & GEOMETRY CP2 - (GR 10)**

**2 CREDITS**

The course is designed to help students bring together topics of Algebra and Geometry, following the Common Core Curriculum Frameworks with direct connection to real-life application problems. Topics include: Cartesian coordinate systems, spatial understanding of geometric shapes and their properties, Pythagorean Theorem, systems of linear equations, parallel, perpendicular, and skew lines, angle relationships, and right triangle trigonometry. As the topics mirror state frameworks, students will apply concepts to open-ended questions that will apply directly to and maximize their likelihood of success on the 10<sup>th</sup> grade MCAS Mathematics examination.

**2141 – ALGEBRA II HON (GR 10, 11)**

**1 CREDIT**

This honors-level course is intended for students who are capable of benefiting from an accelerated and deeper treatment of the topics of an Algebra II-Trigonometry course in one year. Following the Common Core Frameworks, topics will include: properties and operations in the real number system, sequences and series, Graphing and solving quadratic equations, systems of equations, functions, graphing first- and second-degree equations, and the elements of coordinate geometry. Students will learn to solve a wide range of problems using a graphing calculator.

**2081 – TRIGONOMETRY & PRECALCULUS H**

**1 CREDIT**

*(Prerequisite: Successful completion of Algebra I and Honors Geometry)*

This course represents rigorous coursework in preparation for Honors/AP Calculus. Following the Massachusetts Curriculum Frameworks, topics of discussion include: real numbers and integers, polynomials and factoring, sequences and series, rational expressions, irrational numbers, simple radical expressions, exponents, and quadratic equations. This course focuses on problem-solving strategies and real-world application of mathematics. Algebra and geometry are woven together with topics from logical reasoning, measurement, statistics, trigonometry, and discrete mathematics. Linear and non-linear functions are regularly investigated through concrete experiments. The collection and analysis of real-life data with follow-up integration requires students to connect the major topics studied in Algebra and Geometry. Graphing calculators and computers are used regularly to enable modeling and validation of links between observed and abstract concepts.

**2072 – ALGEBRA II CP1 - (GR 11, 12)**

**1 CREDIT**

*(Prerequisite: Successful completion of Algebra I)*

This college-prep level course is designed to build on students' existing mathematical skills and help them develop more sophisticated problem-solving skills. This course is important for success on the S.A.T. and in subsequent mathematics courses. Following the Common Core Frameworks, topics include: properties and operations throughout the real number system, sequences and series, graphing and solving quadratic equations, systems of equations, functions, graphing first- and second-degree equations, and the elements of coordinate geometry. Students will learn to solve a wide range of problems using a graphing calculator.

**2073 ALGEBRA II CP2 - (GR 11, 12)**

**1 CREDIT**

Building upon an understanding of number systems and basic algebraic manipulations, students move through mastery of linear functions and non-linear phenomena. Following the Common Core Frameworks, students are engaged in individual and cooperative investigations and experiments demanding data collection and analysis. Using graphing calculators, the work is focused on the development of best-fit mathematical models that may be linear, quadratic, exponential, logarithmic, rational, radical, or periodic in nature.

**2091 – PRE-CALCULUS HON - (GR 11 & 12)**

**1 CREDIT**

*(Prerequisite: Successful completion of Algebra II)*

This course provides preparation for both the rigor and learning standards of a freshman collegiate mathematics elective. Standard pre-calculus topics are presented along with gaining knowledge of discrete mathematics and data analysis. Beginning with a review of algebraic properties, the course-work leads into in-depth application of algebraic and inverse functions, exponential and logarithmic functions, conic sections, matrices, determinants, and complex numbers and Vector operations.

**2000 – AP PRE-CALCULUS (GR 11)**

**1 CREDIT**

*(Prerequisite: Successful completion of Algebra II)*

In AP Precalculus, students explore everyday situations using mathematical tools and lenses. Students build deep mastery of modeling and functions through regular practice and examine scenarios through multiple representations. They will learn how to observe, explore, and build mathematical meaning from dynamic systems, an important practice for thriving in an ever-changing world.

AP Precalculus prepares students for other higher-level mathematics and science courses. The framework delineates content and skills common to college precalculus courses that are foundational for careers in mathematics, physics, biology, health science, social science, and data science.

**2101 – CALCULUS HON - (GR 12)**

**1 CREDIT**

*(By special arrangement - Prerequisite: Successful completion of Pre-Calculus)*

This rigorous course will provide a solid foundation for students planning on studying mathematics-related topics in college. This elective develops the principal concepts of the differential and integral calculus of functions of one variable. Topics include: Exponential growth and decay, logarithmic functions, curve sketching and optimization. It is intended for students who plan on collegiate majors that will require advanced mathematical study. The concepts are presented in an intuitive manner with an emphasis on practical applications.

**2122 – STATISTICS I CP1 - (GR 12)**

**1 CREDIT**

Statistics is the scientific tool for describing the world in which we live. In many ways, it is formalized common sense, requiring the use of many mathematical formulas and, occasionally, an algebraic equation. Statistics is a vital part of everyday life - necessary for starting a business, planning for your financial future, or simply understanding the daily news. It appears in all facets of life from opinion polls to economic reports to the latest in health research. Knowledge of statistics is crucial to success in the modern world. The course will begin with a broad overview, hinging ideas on hands-on everyday life applications. Simple examples will be built upon to develop a step-by-step understanding, which can then be applied to more complex studies.

Computations will be employed utilizing graphing calculators, iPad, computer spreadsheets, and specialized software. Throughout the entire course, the primary focus will be on case studies and projects. Readings, written reports, and cooperative work are significant components of this elective.

**2151 – PERSONAL FINANCE (Gr 12)**

**1 CREDIT**

*(Prerequisite: Successful completion of Algebra II)*

This course presents essential knowledge and skills to make informed decisions about real world financial issues. Students will learn how choices influence occupational options and future earning potential. Students will also learn to apply decision-making skills to evaluate career choices and set personal goals. The course content is designed to help the learner make wise spending, saving, and credit decisions and to make effective use of income to achieve personal financial success.

**2201 –FINANCIAL ALGEBRA HON (Gr 12)**

**1 CREDIT**

This honors-level course engages students with real-world financial applications while maintaining deep mathematical rigor. Each of the course units blends one finance topic with one relevant math concept. Following the Common Core frameworks, topics will include: Taxes and the fundamentals of algebra, checking and linear equations, savings, budgeting and systems of equations, investing and exponential functions, credit and modeling functions, credit and statistics, and insurance and probability.

**2100 – AP CALCULUS AB – (GR 12)**

**1 CREDIT**

The overall goal of this course is to help students understand and apply the three big ideas of AB Calculus: limits, derivatives, and integrals and the Fundamental Theorem of Calculus. Embedded throughout the big ideas are the mathematical practices for AP Calculus: reasoning with definitions and theorems, connecting concepts, implementing algebraic/computational processes, connecting multiple representations, building notational fluency, and communicating mathematics orally and in well-written sentences. All students are required to complete summer work reviewing pre-calculus and Algebra 2 concepts prior to entry in the course.

## **SCIENCE & TECHNOLOGY**

The Science curriculum is designed to provide courses for students that coordinate with their career/technical areas. This alignment enables students to pursue a career immediately after high school in addition to the preparation for continuing their education. Through science, students can make informed decisions, are able to ask thought-provoking questions, and clearly communicate their questions and findings to those around them.

Students will come into contact with multiple science experiences that nurture and foster their increased understanding of the things they observe and investigate. They advance their ability to offer reasonable explanations, make predictions, and engage in more rewarding activities. They also learn to respect nature and their environment. Science strengthens the skills they need to think effectively, objectively, and creatively.

By the conclusion of a student's senior year, each student will have been exposed to many science themes. Students will be exposed to such themes as: the processes of life; the interaction of life and the environment, forces and motion; energy; and the nature of matter. The student will understand that science, technology, and society are all interwoven and interdependent.

**3001 - BIOLOGY I LAB HON - (GR 9)**

**2 CREDITS**

Honors Biology is designed to give students an in-depth knowledge of biological science. The curriculum strictly follows the Massachusetts standards preparing students to take the Biology MCAS test at the end of their freshman year. Topics that are covered include biochemistry, cell biology, genetics, human anatomy, evolution, and ecology. Students are assessed based on daily class work, unit tests, projects, and weekly homework.

**3002 – BIOLOGY I LAB CP1 - (GR 9)**

**2 CREDITS**

College Preparatory Biology is designed to give students a primary knowledge of biological science. The curriculum strictly follows the Massachusetts standards, preparing students to take the Biology MCAS test at the end of their freshman year. Topics

that are covered include biochemistry, cell biology, genetics, human anatomy, evolution, and ecology. Students are assessed based on daily class work, unit and district tests, and weekly homework.

**3052 - BIOLOGY II LAB CP1 - (GR 10)**

**1 CREDIT**

This is a sophomore level course that is designed to meet the specific needs of students who need to meet the Biology MCAS competency requirements. Topics of study will include the chemistry of life, cell biology, genetics, anatomy and physiology, biodiversity, and ecology. Students will be prepared to take the Biology MCAS.

**3061 – CHEMISTRY LAB HON - (GR 10)**

**1 CREDIT**

This is a sophomore level course for students who have strong math skills. Students will study concepts of matter and bonding, the gas laws, and balancing chemical equations. Students will engage in a variety of lab activities which will give a broader understanding of chemistry and its real world applications. (Department approval required).

**3062 - CHEMISTRY LAB CP1 - (GR 10, 11)**

**1 CREDIT**

*(Prerequisite: Algebra II)*

This is a college preparatory course that introduces students to the fundamental concepts of matter and bonding, the gas laws, and balancing chemical equations. Students will engage in a variety of lab activities which will give a broader understanding of chemistry and its real world applications.

**3071 – PHYSICS LAB HON - (GR 11)**

**1 CREDIT**

*(Prerequisite: Algebra and Geometry)*

This is a junior level course for students who have strong math skills. Students will use scientific inquiry to explore the basic concepts of physics and their relationship to real-world situations. Students will study, conduct experiments, and perform calculations in topics such as motion, forces, energy, heat waves, electricity, and magnetism. (Department approval required).

**3072 – PHYSICS LAB CP1 – (GR 11, 12)**

**1 CREDIT**

*(Prerequisite: Algebra and Geometry)*

Students will use scientific inquiry to explore the basic concepts of physics and conduct experiments in topics such as motion, forces, energy, heat, waves, electricity, and magnetism. Students will apply the laws of physics to everyday situations.

**3081 – ANATOMY & PHYSIOLOGY LAB HON - (GR 12)**

**1 CREDIT**

This is a senior elective course in which students will take an in-depth look at the structure and function of the various systems of the human body. These systems include cardiovascular, skeletal, digestive, endocrine, muscular, urinary, integumentary, respiratory and nervous. Students will engage in various activities that will focus on the physiology of various organs including dissections. (Department approval required)

**3082 – ANATOMY & PHYSIOLOGY LAB CP1 - (GR 12)**

**1 CREDIT**

This is a senior elective course that introduces students to the basic functions of various structures within the human body. Students will study the major organs of the integumentary, cardiovascular, muscular, skeletal, digestive, endocrine, and nervous systems. Students will engage in various activities that will focus on the physiology of various organs including dissections.

**3092 – ENVIRONMENTAL SCIENCE LAB CP1 - (GR 11)**

**1 CREDIT**

This is an elective course that will provide students with a greater understanding of the environment in which they live. Students will study the impact humans have on the earth's ecological systems. Topics to be discussed will include energy transfer, pollution, and climate change. Students will work cooperatively to study and look for solutions to these environmental issues.

**3094 - HUMAN BIOLOGY- (GR 11)****1 CREDIT**

This is a junior level course that is designed to meet the specific needs of students who need to meet the Biology MCAS competency requirements. Topics of study will include the chemistry of life, cell biology, genetics, anatomy and physiology, biodiversity, and ecology. Students will be prepared to take the Biology MCAS

**3095 - BIOTECHNOLOGY LAB CP1- (GR 11)****1 CREDIT**

In this junior level course, students will study the use of cells and biological molecules to solve problems or make useful products. They will learn the fundamentals of working in a laboratory, such as maintaining a laboratory notebook, laboratory safety, proper use of equipment, and performing calculations. Laboratory skills will include DNA extraction, micropipetting, calculating dilutions, making solutions and writing SOPs. Activities will include restriction enzyme digestion, gel electrophoresis, DNA fingerprinting, plasmid mapping and bacterial transformation.

**3096- BIOTECHNOLOGY LAB H- (GR 11)****1 CREDIT**

This honors course for grade 11 students will study the use of cells and biological molecules to solve problems or make useful products. They will learn the fundamentals of working in a laboratory, such as maintaining a laboratory notebook, laboratory safety, proper use of equipment, performing calculations, asking scientific questions, good research practices, biotechnology, and medical ethics. Laboratory skills will include DNA extraction, micropipette, calculating dilutions, making solutions, and writing SOPs. Activities will include restriction enzyme digestion, gel electrophoresis, DNA fingerprinting, plasmid mapping, and bacterial transformation. Students will explore topics related to enzymes, genetically modified organisms, microbiology, stem cells, genetic testing, and cancer.

**3091- ZOOLOGY CP 1- (GR 12)****1 CREDIT**

This grade 12 course will explore the main phyla and classes of the animal kingdom. Students will engage in projects and lab-based activities (including dissections) that will examine the evolution and physical makeup of the diverse species within the animal kingdom. Students are assessed based on daily classwork, unit tests, projects, and weekly homework.

**3093 - FORENSIC SCIENCE LAB HON – (GR 12)****1 CREDIT**

This is a course that introduces students to the fundamentals of forensic science. Students will use the disciplines of Biology, Chemistry, Physics, and Behavioral Sciences and apply them to basic principles of the American Criminal Justice System. Students will learn the techniques involved in crime scene investigation and the significance of the preservation of evidence. This course will focus on the fundamental principles of criminalist methods which include chemical analysis of trace evidence (hair, fiber, glass, and paint), principles of serology, toxicology, DNA fingerprinting, ballistics, fingerprint identification, and forensic pathology.

**3301- HEALTH AND WELLNESS FOR LIFE-(GR 12)****1 CREDIT**

Health and Wellness for Life is a grade 12 elective designed to expand and explore in more depth the health topics previously discussed during grade 9. Students will learn more about public health resources, mental health disorders, nutrition, consumer health, healthy relationships, sexual health, safety and first-aid (hands-only CPR), substance abuse prevention and treatment, stress management, and conflict resolution. Students will connect with local resources to improve student health behaviors. Students will practice health skills to be prepared to live healthy, independent lives.

**3200 - AP COMPUTER SCIENCE – (GR 12)****1 CREDIT**

This course introduces students to computer science with fundamental topics that include problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing. The course emphasizes object-oriented and imperative problem solving and design using the Java language. These techniques represent proven approaches for developing solutions that can scale up from small, simple problems to large, complex problems. The AP Computer Science a course curriculum is compatible with many CS1 courses in colleges and universities.

### **3400 – AP ENVIRONMENTAL SCIENCE – (GR 11, 12)**

**1 CREDIT**

The AP Environmental science course follows the curriculum recommended by the College Board and is designed to provide students with scientific principles, concepts, and methodologies so that they can understand the interrelationships of the natural world, identify and analyze environmental problems (both natural and human made), evaluate the relative risks associated with these problems, and examine alternative solutions for resolving and/or preventing them.

### **3500 – AP PHYSICS B – (GR 12)**

**1 CREDIT**

AP Physics B is an algebra-based, introductory college-level physics course. Students cultivate their understanding of physics through classroom study, in-class activity, and hands-on, inquiry-based laboratory work as they explore concepts like systems, fields, force interactions, change, conservation, and waves.

## **SOCIAL STUDIES**

The primary purpose of social studies is to help young people develop the ability to make informed and reasonable decisions for the public good as citizens of a culturally diverse, democratic society in an interdependent world. Therefore, the underlying goal of the Social Studies curriculum is to develop important qualities of citizenship including disciplinary knowledge, thinking skills, commitment to democratic values, and citizen participation. Citizenship in a democratic society requires the development of skills for critical thinking, decision-making, and participation. In a democratic society, citizens of all ages make decisions that affect themselves, their families, their communities, their nations, and the world.

The social studies curriculum at the Keefe Regional Technical School is based on the standards set forth in the Massachusetts and Social Science Curriculum Framework and is designed to incorporate the major strands of Social Studies: history, civics, government, geography, and economics. Students are presented with multiple opportunities for rich experiences and in-depth study of the social sciences as they Progress through the grades. Making the subject matter relevant to the lives of our students is an important and underlying goal of instructional delivery

The sequence of courses for grades nine through twelve (Massachusetts Framework “Pathway 2”) was chosen to accommodate future state assessment on the standards, skills, and concepts for both U.S. History I and II at the end of grade 10. The curriculum has been restructured to prepare our students effectively for both district and state assessments. All ninth-grade students are required to take U.S. History I, and all tenth-grade students are required to take U.S. History II. A variety of social studies electives are offered to eleventh and twelfth grade students. All courses require standards-based assessments by term or unit and final exams.

### **UNITED STATES HISTORY I**

#### **The Revolution through World War I, 1754-1919**

In U.S. History I, students examine the historical and intellectual origins of the United States during the Revolutionary and Constitutional eras. Students will learn about the important political and economic factors that contributed to the outbreak of the Revolution as well as the consequences of the Revolution including the writing and the key ideas of the U.S. Constitution. Students will also study the framework of American democracy and the basic concepts of American government such as federalism, separation of powers, checks and balances, popular sovereignty, and individual rights. Other important topics that will be examined include: America’s westward expansion, the establishment of political parties, economic and social change, the causes and consequences of the Civil War. The reading of primary source documents is a key feature of the two-year set of U.S. history standards. Strong emphasis is placed on the integration of new skills and concepts in the three social studies strands... history, civics, and economics. This course focuses on the development of skills in research, note taking, writing, and study skills as preparation for college. A common end-of-the-year assessment will be given to all students.

### **4001- US HISTORY I: 1754-1850 HON - (GR 9)**

**1 CREDIT**

This course will trace the political, diplomatic, and cultural development of the United States from its historical and intellectual origins through the Antebellum Period, from the Civil War Period through the Progressive Era, and American entry into World War I. The course is designed to provide students with the analytical skills and enduring understandings content necessary to

prepare students for college level coursework. Students work at a **rigorous** pace as they participate in a wide variety of activities that are designed to strengthen reading, writing, and research skills necessary to succeed at a four-year college.

**4002 - US HISTORY I: 1754-1850 CP1- (GR 9)**

**1 CREDIT**

This course will trace the political, diplomatic, and cultural development of the United States from its historical and intellectual origins through the Antebellum Period and from the Civil War Period through the Progressive Era and American entry into World War I. The course is designed to provide students with the analytical skills and enduring understandings necessary to prepare students for college level coursework. Students work at an **accelerated** pace as they participate in a wide variety of activities designed to strengthen the reading, writing, and research skills necessary to succeed at a two-year college.

**UNITED STATES HISTORY II**  
**The Roaring Twenties to Contemporary America, 1920-2001**

This course is a required course for all sophomores and incorporates the Massachusetts framework core knowledge, skills, and concepts. In U.S. History II, students will study the domestic and foreign policy issues faced by America in the post-World War I era including the prosperity of the 1920's, the causes and effects of the great Depression, and the impact of the New Deal. Students also learn about the various factors that led to America's entry into World War II as well as the consequences of those wars on American life. Finally, students study the causes and course of the Cold War, important political and economic changes during the Cold War, including the Civil Rights movement and recent events and trends that have shaped modern-day America, including the course and consequences of America's recent diplomatic initiatives.

The reading of primary source documents is a key feature of the two-year set of U.S. history standards. Strong emphasis is placed on the integration of new skills and concepts in the three social studies strands: history, civics, and economics. This course focuses on the development of skills in research, note taking, writing, and study skills as preparation for college. A common end-of-the-year assessment will be given to all students.

**4021 – US HISTORY II: 1920 – 2001 HON – (GR 10)**

**1 CREDIT**

This course will trace the political, socioeconomic, diplomatic, and cultural development of the United States from the Post-World War I Era, including the Great Depression and World War II, through the recent events and trends that have shaped modern-day America. The course is designed to provide students with the analytical skills and enduring understandings necessary to prepare students for college level coursework. Students work at a **rigorous** pace as they participate in a wide variety of activities designed to strengthen the reading, writing, and research skills necessary to succeed at a four-year college.

**4022 – US HISTORY II: 1920 – 2001 CP1 – (GR 10)**

**1 CREDIT**

This course will trace the political, socioeconomic, diplomatic, and cultural development of the United States from the Post-World War I Era, including the Great Depression and World War II, through the recent events and trends that have shaped modern-day America. The course is designed to provide students with the analytical skills and enduring understandings necessary to prepare students for college level coursework. Students work at an **accelerated** pace as they participate in a wide variety of activities designed to strengthen the reading, writing, and research skills necessary to succeed at the college level.

**WORLD HISTORY II**

In this course, students study the rise of the nation state in Europe, the French Revolution, and the economic and political roots of the modern world. They study the origins and consequences of the Industrial Revolution, 19th century political reform in Western Europe, and imperialism in Africa, Asia, and South America. They will explain the causes and consequences of the great military and economic events of the past century, including World War I, the Great Depression, World War II, the Cold War, and the Russian and Chinese revolutions. Finally, students will study the rise of nationalism and the continuing persistence of political, ethnic, and religious conflict in many parts of the world. This course focuses on the development of skills in research, note taking, writing, and study skills as preparation for college. The reading of primary source documents is a key feature of the history standards for this course. A common end-of-the-year assessment will be given to all students.

**4041 – WORLD HISTORY 1800 HON – (GR 11)****1 CREDIT**

This course will trace the political, economic, and social development of the modern world from the Industrial Revolution and 19<sup>th</sup> century political reform in Western Europe through the continuing persistence of political, ethnic, and religious conflict in many parts of the world. The course is designed to provide students with the analytical skills and enduring understandings necessary to prepare students for college level coursework. Students work at an accelerated pace as they participate in a wide variety of activities designed to strengthen the reading, writing, and research skills necessary to succeed at a four-year college.

**4042 – WORLD HISTORY II CP1– (GR 11)****1 CREDIT**

This course will trace the political, economic, and social development of the modern world from the Industrial Revolution and 19<sup>th</sup> century political reform in Western Europe through the continuing persistence of political, ethnic, and religious conflict in many parts of the world. The course is designed to provide students with the analytical skills and enduring understandings necessary to prepare students for college level coursework. Students work at a rigorous pace as they participate in a wide variety of activities designed to strengthen the reading, writing, and research skills necessary to succeed at a two-year college.

**4062 - CURRENT WORLD AFFAIRS CP1– (GR 11, 12)****1 CREDIT**

The primary goal of the curriculum is to raise an awareness of students to the world around them. By providing students with an opportunity to discuss current events, they will develop a sense of their own view on issues and begin to define themselves as a political personality. The use of a variety of technologies and methodologies is integrated throughout the curriculum. Through regular viewing of print and television media, an emphasis is placed on the role of the media in shaping world events and influencing public opinion. Students work at a rigorous pace as they participate in a wide variety of activities designed to strengthen the reading, writing, and research skills necessary to succeed at a two-year college.

**4051 – LAW & SOCIETY HON – (GR 12)****1 CREDIT**

This course examines the broad issues related to why we have laws and how such laws influence individuals and the society in which we live. By drawing on students' knowledge, values, and experiences, the course connects them with the overall framework of the law to help them become more active citizens. Students work at a rigorous pace as they participate in activities in which they solve problems and analyze case studies and hypothetical situations within the areas of criminal and civil law to develop the critical thinking skills that are necessary to succeed at a **four-year college**.

**4052 – LAW & SOCIETY CP1 – (GR 12)****1 CREDIT**

This course examines the broad issues related to why we have laws and how such laws influence individuals and the society in which we live. By drawing on students' knowledge, values, and experiences, the course connects them with the overall framework of the law to help them become more active citizens. Students work at an accelerated pace as they participate in activities in which they solve problems and analyze case studies and hypothetical situations within the areas of criminal and civil law to develop the critical thinking skills that are necessary to succeed at a **two-year college**.

**4081 – ENTREPRENEURSHIP HON – (GR 11)****1 CREDIT**

This course follows the National Foundation for Teaching Entrepreneurship (NFTE) curriculum which introduces students to the entrepreneurial concepts of business management, including planning, raising capital, using business information, managing employees, and marketing products and services. Students will apply these principles by creating a business plan to develop, open, market, and operate a small business of their choice. Students work at an accelerated pace as they participate in a wide variety of activities designed to strengthen both their academic and business skills necessary for success in either continuing education in their technical career areas or at either a two-year or four-year college.

**4083 – ENTREPRENEURSHIP I CP1 – (GR 11)****1 CREDIT**

This course follows the National Foundation for Teaching Entrepreneurship (NFTE) curriculum which introduces students to the entrepreneurial concepts of business management, including planning, raising capital, using business information, managing employees, and marketing products and services. Students will apply these principles by creating a business plan to develop, open, market, and operate a small business of their choice. Students participate in a wide variety of activities designed to

strengthen both their academic and business skills necessary for success in either continuing education in their technical career areas or at either a two-year or four-year college.

## ENGLISH LANGUAGE LEARNERS

This English Language Learner (ELL) Program welcomes students from all countries and language groups who do not speak English as their first language and who require assistance completing schoolwork in English. Students in the ELL Program are enrolled in English as a Second Language (ESL) classes to help them listen, speak, read, and write in English. They are mainstreamed into all other academic and career/technical education courses. In the academic classes of social studies, mathematics, and science, bilingual aides are present to help students understand and complete class work. Language support services are provided to ELL students in career/technical education classes as well.

### **501, 511 – ESL 1 CP1 – (GR 9-12)**

**1 CREDIT**

This course is designed for students who speak little to no English. Emphasis is on developing students' vocabulary, speaking, listening, reading, and writing skills for personal, social, and academic purposes. The focus of the course is on survival and academic vocabulary development as well as understanding and using basic English grammar including: the verb to be, present tense, continuous tense, future tense and pronouns. Students read beginning level material in this course. By the end of this course, students transition into CP ESL 2.

### **502, 512 – ESL 2 CP1 – (GR 9-12)**

**1 CREDIT**

This course is designed for students who are at the low intermediate level of English. There is continuing emphasis on the development of vocabulary, speaking, listening, reading, and writing skills. Students begin to use both regular and irregular past tense verbs and modals such as: can, may, might, and should. Students read high-beginning and low-intermediate material in this course. By the end of this course, students transition into CP ESL 3.

### **503, 513 – ESL 3 CP1 – (GR 9-12)**

**1 CREDIT**

This course is designed for students who have transitioned into the high intermediate level of English. Continuing emphasis is placed on developing students' vocabulary, speaking, listening, reading, and writing skills for personal, social, and academic purposes. Students in this course are ready for more complex grammatical structures including: present and past perfect, two-word verbs, connectors, gerunds, and infinitives. There is a strong emphasis on reading and increasing the students' independent and instructional reading level. By the end of this course, students transition into CP ESL 4.

### **504, 514 – ESL 4 CP1 – (GR 9-12)**

**1 CREDIT**

This course is designed for students who are at the advanced level of English but are not yet ready for mainstream classes. Students will comprehend and communicate orally using spoken English to participate in academic and social settings. They will write English for a variety of purposes with clear focus, coherent organization, and sufficient detail. Students in this course learn to use very complex grammatical structures including: conditionals, passive voice, perfect modals, embedded questions, tag questions and reported speech. Students in this course are reading novels and are able to write essays in response to MCAS questions.

### **516ACP ELD ENRICHMENT CP1- (GR 9-12)**

**1 CREDIT**

This course provides both individualized academic support and additional literacy practice to students. English Language Learners who are being pushed into mainstream English are eligible to take this course, and it is also open to grade 9 students in their first year out of the ESL program. The purpose of this course is to ensure that English Language Learners get the support that they need on any take-home work for academic classes, while also giving them additional support and helping to bridge the gap between ESL and mainstream classes for students who are new to mainstream English classes. This class is pass/ fail.

### **520 ESL LANGUAGE LAB 1&2 CP1- (GR 9-12)**

**1 CREDIT**

English Language Learners who are enrolled in ESL 1 or ESL 2 are eligible to take this course. This course is designed to build up their productive language skills in English. English Language Learners will engage in speaking and writing activities.

Students in this class will receive support with take home work for their other academic classes, while mainly focusing on the development of productive language skills in English. This class is pass/ fail.

**521 ESL LANGUAGE LAB 3&4 CP1- (GR 9-12)**

**1 CREDIT**

English Language Learners who are enrolled in ESL 3 or ESL 4 are eligible to take this course. This course is designed to refine their productive language skills in English. English Language Learners will engage in speaking and writing activities. Students in this class will receive support with take home work for their other academic classes, while mainly focusing on the development of productive language skills in English. This class is pass/ fail.

## **PHYSICAL EDUCATION/HEALTH & WELLNESS**

Physical Education is a required course for all students in grades nine through twelve unless medically excused.

Physical Education will focus on individual competence in movement skills, understanding the concepts of movement, and relating physical activity to lifelong health and wellness. Students can increase their awareness of the benefits of exercise and how it relates to fitness and overall health and wellness. Grades nine through twelve curricula covers topics that include: motor skill development, muscular strength and conditioning, fitness, agility, coordination, flexibility, group and individual sports and activities and personal and social competency. Students will be evaluated on their preparedness, cooperation, attitude, participation, and effort.

Throughout all four years, students are required to Progress through a developmental study of health and wellness topics. Through health literacy, healthy self-management skills, and health promotion, comprehensive health education teaches fundamental health concepts, promotes habits and conduct that enhance health and wellness, and guides efforts to build healthy families, relationships, schools, and communities. Fundamental health knowledge and skills need to be taught, reinforced and expanded regularly in a student's four-year high school career. A planned, sequential curriculum addresses a variety of topics with increasing degrees of complexity appropriate to students' developmental levels as they move through adolescence. Such a Program ensures thorough, balanced coverage of health content areas, and its success relies on our skilled teachers who readily adapt to incorporate emerging health topics.

**3201- GRADE 9 P.E., HEALTH AND WELLNESS**

**1 CREDIT**

This is a full year course required for all grade 9 students. Topics included are cardio respiratory function, vascular disease, tobacco abuse, fitness evaluation, substance abuse, sexually transmitted diseases, nutrition, eating disorders and weight control, violence prevention, and personal safety issues. Emphasis will be placed on the importance of developing positive personal choices that promote life-long wellness. Notebooks and journals are a requirement of the course.

<b>9112 – PHYSICAL EDUCATION - (GR 10)</b>	<b>.25 CREDITS</b>
<b>9122 – PHYSICAL EDUCATION - (GR 11)</b>	<b>.25 CREDITS</b>
<b>9132 – PHYSICAL EDUCATION - (GR 12)</b>	<b>.25 CREDITS</b>
<b>3152 – PERSONAL FITNESS (GR 11)</b>	<b>1 CREDIT</b>
<b>3162 – EVERYDAY FITNESS – (GR 10 &amp; 12)</b>	<b>1 CREDIT</b>
<b>3172 – TEAM SPORTS – (GR 10 &amp; 12)</b>	<b>1 CREDIT</b>
<b>3182 – YOGA &amp; AEROBICS – (GR 10 &amp; 12)</b>	<b>1 CREDIT</b>
<b>3301- HEALTH AND WELLNESS FOR LIFE (Gr. 12)</b>	<b>1 CREDIT</b>

## **SPECIAL EDUCATION PROGRAMS**

The Philosophy of the Special Education Program is consistent with the school's mission statement. Specialized courses and approaches to learning are designed to help students meet high expectations, MCAS requirements, and the challenges of the Massachusetts Curriculum Frameworks, while addressing the goals and objectives of their Individualized Education Programs (IEPs).

Special education services and Programs are offered in accordance with state and federal laws that govern special education and are driven by the scope of the Individuals with Disabilities Education Act (IDEA) and the Massachusetts Curriculum Frameworks.

Student needs are identified through the TEAM meeting process. Programs are tailored to student needs as identified through this ongoing process. Inclusion supports, specialized instruction, and learning strategies are some of the services provided to help students achieve these goals. An inclusion consult model in the general curriculum, supported by special educators and paraprofessionals, is provided in all content areas. A variety of materials, instructional approaches, supports, and assistive technology are provided in order to meet the unique needs and challenges of each student.

Transition Planning is an integral part of each student's Program. Transition planning focuses largely on areas of school to work, school to community, and post-secondary education as well as planning for independent life after high school. Special educators work with students, parents/guardians, guidance counselors, and additional service providers in order to establish annual goals and to implement the steps necessary to achieve post-secondary outcomes. Students may achieve these goals either independently and/or in small group seminars conducted in collaboration with guidance and special education.

Each student on an individualized IEP is assigned a liaison that monitors student Progress. Communication is ongoing with the parent, guidance counselor, student, academic and career/technical staff, as well as outside service providers.

It is the intent of the special education department to support student participation and access to the general curriculum, as well as to remediate weaknesses, to increase student skills, and to foster student self-esteem.

The special education department provides a wide range of services to students with varying abilities and needs. Students with learning disabilities, emotional difficulties, and/or physical limitations have Programs tailored to their specific needs through the Individualized Education Program (IEP) process. Also, related services such as counseling and speech therapy are available to aid students.

## LITERARY SKILLS

Literary Analysis and Reading classes are offered to students in grades 9 through 12 in an effort to enhance the skills of students in analyzing essential readings from upcoming study or for students who are in need of support. These classes cover vocabulary acquisition, comprehension and listening skills, and reading strategies. Oral expression, phonics, accuracy, and fluency are also addressed.

### **704- LITERACY SKILLS CP2 – (GR 9)**

**1 CREDIT**

Literacy skills is a balanced approach to reading, writing, and spelling across the curriculum. This course will teach the skills necessary to master phonemic awareness, the alphabetic principle, fluency, and comprehension. Instructional use of ongoing assessment is used to monitor individual strengths and needs. A variety of methods will support the processes of introduction, discovery, learning, review, practice, and evaluation.

### **704U – LITERACY SKILLS CP2U – (GR 10, 11, 12)**

**1 CREDIT**

Literacy Skills CP2 U is a continuation of the grade 9 curriculum and balanced approach to reading, writing, and spelling across the curriculum. This course will teach the skills necessary to master phonemic awareness, the alphabetic principle, fluency, and comprehension. Instructional use of ongoing assessment is used to monitor individual strengths and needs. A variety of methods will support the processes of introduction, discovery, learning, review, practice, and evaluation.

## LEARNING STRATEGIES

The Learning Strategies Program has been designed for special education students in grades 9 through 12 in an effort to support them in general education settings. Students who require specialized instruction are assisted with assignments from both career/technical related and/or academic classes. A variety of materials, instructional approaches, supports and assistive technology are provided in order to meet the unique needs and challenges of each student. Students are also taught specific organizational skills and study strategies. Some of the topics include: discovering your learning style, effective time management, reading strategies for success, writing effective essays, and test taking strategies. Additionally, there is an emphasis on the remediation of concepts in biology, math, language arts, and MCAS preparation.

**Please note: Students must be on an IEP to be eligible for the following classes:**

<b>713 – LEARNING STRATEGIES – (GR 9)</b>	<b>1 CREDIT</b>
<b>754 – LEARNING STRATEGIES – (GR 10)</b>	<b>1 CREDIT</b>
<b>755 – LEARNING STRATEGIES – (GR 11)</b>	<b>1 CREDIT</b>
<b>757 – LEARNING STRATEGIES – (GR 12)</b>	<b>1 CREDIT</b>

## **ELECTIVES**

### **604 – INTRODUCTION TO FINE ARTS CP1** **1 CREDIT**

Introduction to Art is the introduction to art classes. Students will learn how to use elements of art such as line, shape, and color as well as principles of design like balance, contrast, and movement. There are four units of study focusing on increasing ability in the techniques of Drawing, Painting, Printmaking, and Sculpture. Students will enhance artistic and creative abilities, understand art careers and current events, and see how art allows us to understand a visual language.

### **650 – INTRODUCTION TO MIXED MEDIA ART CP1** **1 CREDIT**

Introduction to mixed media is a type of visual art that combines more than one medium or material. This class inspires students to explore their creativity while learning new artistic techniques and approaches. Projects will introduce students to a wide variety of media, including textile design, drawing, painting, printmaking, stained glass, collage, and sculpture.

### **660-MIXED MEDIA EXPLORATIONS CP1** **1 CREDIT**

This class is open to students in grades 10-12 who have successfully taken Intro to Mixed Media and are interested in new and conceptual ways to explore the arts. This class focuses on advanced methods of painting, fiber arts, drawing, printmaking, sculpture, and collage. Students will learn to combine both conventional and unconventional materials to create fine arts pieces.

### **670- FINE ART PORTFOLIO H** **1 CREDIT**

This is a grade 11 and 12 honors-level class focused on building a portfolio for college fine art programs. This class is appropriate for students who have previously taken art and have a strong interest in developing their art and/or need to create a portfolio to apply to art school. The focus of this class is critique, developing conceptual and portfolio-worthy artwork, and building an artistic vocabulary. Students will also participate in presentations with the admissions departments from several area art colleges and programs.

### **617 – INTRODUCTION TO COMPUTER SCIENCE CP1** **1 CREDIT**

Exploring Computer Science courses present students with the conceptual underpinnings of computer science through an exploration of human computer interaction, web design, computer Programming, data modeling, and robotics. While these courses include Programming, the focus is on the computational practices associated with doing computer science, rather than just a narrow focus on coding, syntax, or tools. Exploring Computer Science courses teach students the computational practices of algorithm design, problem solving, and Programming within a context that is relevant to their lives.

### **630- MUSIC APPRECIATION I** **1 CREDIT**

This is an introductory course intended to help expand a student's knowledge base regarding several musical genres. Students will interact with various musical styles and mediums throughout this course, dating back to the first known incidents involving the creation of music. Students will also be exposed to music theory, with the goal of appreciation and a full understanding of the musical process and development.

### **631- MUSIC APPRECIATION II** **1 CREDIT**

Although this course is a continuation of Music Appreciation I, it can be fully enjoyed by students who have yet to take that foundational class. Students will take a deeper look into the characteristics of 20th-century music. They will begin to see how the music of that time influenced popular music by comparing and contrasting it with various modern-day genres. Students will also explore the music of the world and be able to make cultural connections.

**642 – CERAMICS CP1** **1 CREDIT**

This course is designed for students who have an interest in working with clay, and gives students experience in making functional as well as sculptural pieces, using a variety of techniques. **(Pre Req: Intro to Fine Arts)**

**643 – CERAMICS II CP1** **1 CREDIT**

Description: Ceramics II is an art course that will explore advanced solutions to creative problems in clay, glaze and firing techniques as well as art history from around the world. Students will become very good at wheel work and hand building and be able to concentrate on creative solutions that help them realize greater personal expression applicable to all art.

**(Prerequisite: Ceramics I.)**

**1162 – MYTHOLOGY** **1 CREDIT**

This course will explore the question: how does ancient mythology connect with our lives today? Students will read and act out myths from around the world written as plays to learn how ancient myths can teach us lessons for today. Students will participate in class readings, discussions, and presentations as well as some creative writing and individual or group projects.

**1132 –DRAMA AND PLAY PRODUCTION** **1 CREDIT**

The Keefe Tech drama/play/production class will study and perform monologues, soliloquies, scenes, and various play production formats. This is an applied class in which students will develop voice and movement through a variety of improvisational exercises performed both in the classroom and in the school auditorium. Students will be fluent in the rudimentary skills necessary to be successful as actors, directors, stage managers, backstage, and technical operators, depending upon their area(s) of focus. Students will be assessed on their proactive and enthusiastic class participation in addition to academic presentations, brief written responses, and journal entries. Students will learn that theatrical talents are versatile and may directly inform many on-the-job skills regardless of career choice. Texts considered will include, but are in no way limited to, those written by the following playwrights: August Wilson, David Ives, Wendy Wasserstein, William Shakespeare, Craig Lucas, Arthur Miller, Sam Shepard, Moises Kaufman, Oscar Wilde, Tennessee Williams, Jean-Paul Sartre, and Lorraine Hansberry.

**3031 - INTRODUCTION TO ENGINEERING DESIGN (HON)** **1 CREDIT**

Introduction to Engineering Design (IED) is a course that is appropriate for students who are interested in design and engineering or another technical career. The major focus of the IED course is to expose students to a design process, professional communication and collaboration methods, design ethics, and technical documentation. IED gives students the opportunity to develop skills in research and analysis, teamwork, technical writing, engineering graphics, and problem solving through activity-, project-, and problem-based (APPB) learning. Used in combination with a teaming approach, APPB-learning challenges students to continually hone their interpersonal skills and creative abilities while applying math, science, and technology knowledge learned in other courses to solve engineering design problems and communicate their solutions. IED also allows students to develop strategies to enable and direct their own learning--an ultimate goal of education.

**603-COMPUTER AIDED DESIGN (CAD) CP1** **1 CREDIT**

This is an introductory course for grade 10 students that focuses on the basic skills required to create and edit drawings with specialized software. Students are introduced to 2-dimensional and 3-dimensional software commonly used in industry. This is a hands-on, project-based class focused on reading and understanding detailed drawings. Projects consist of creating, editing and dimensional drawings.

**4091 – INTRODUCTION TO PSYCHOLOGY H** **1 CREDIT**

This is a year-long course taught at an accelerated pace. The honors curriculum exposes students to deeper content, based upon the framework of the CP 1 course. This course is designed to introduce students to systematic human behavior. Students will be exposed to the psychological facts and principles associated with the major sub-fields within psychology. This course introduces the psychological basis of behavior, development, learning, memory, consciousness, personality, and abnormal psychology. Students will also explore how people use their mental processes to learn, solve problems, and face the challenges of their daily

lives. An emphasis will be placed on the application of critical thinking skills, independent reading, individual and Group projects, essay writing, research skills, and objective tests and quizzes.

**4092 – INTRODUCTION TO PSYCHOLOGY CP 1**

**1 CREDIT**

This is a year-long course. The course is designed to introduce students to systematic human behavior. Students will be exposed to the psychological facts and principles associated with the major sub-fields within psychology. This course introduces the psychological basis of behavior, development, learning, memory, consciousness, personality, and abnormal psychology. Students will also explore how people use their mental processes to learn, solve problems, and face the challenges of their daily lives. An emphasis will be placed on the application of critical thinking skills, independent reading, individual and Group projects, essay writing, research skills, and objective tests and quizzes.

**1232- INTRODUCTION TO ACTING CP 1**

**1 CREDIT**

This course is designed for students with little to no theater experience and promotes enjoyment and appreciation for all aspects of theater. Classwork focuses on the exploration of theater literature, performance, historical and cultural connections, and technical requirements. Improvisations, creative dramatics, and the beginning scene work are used to introduce students to acting and character development. Incorporation of other art forms in theater also helps students gain an appreciation for other art forms such as music, dance, and visual art.

**1235-THEATER PRODUCTION ARTS CP 1**

**1 CREDIT**

Students will learn a variety of different jobs that are done on the technical side of the theater, including stagecraft, scene design, lighting, sound, costume design, make-up design, props, stage management, house management, box office management, and publicity.

**1236- INTRODUCTION TO MUSICAL THEATER CP1**

**1 CREDIT**

Students are introduced to musical theater, musical theater history, singing, performing, and some dance. Each student will have a series of songs to work on during the course and will perform at the end of the year.

**1238- SPEECH AND DEBATE CP1**

**1 CREDIT**

Students will learn how to become persuasive presenters and debaters by preparing a variety of speeches and engaging in planned debates with fellow classmates. They will develop skills in research, projection, listening, creating strong counter arguments, and how to carry themselves when presenting to a group of people.

**756 - LEARNING STRATEGIES – (GR 12)**

**1 CREDIT**

This elective provides students with direct instruction to maximize success in on-going course work. Organizational skills, time-management skills, and note taking skills will support all major content areas: English math, science, social studies, and career and technical related theory.

## **CAREER/TECHNICAL EDUCATION**

### **PHILOSOPHY**

Our main purpose is to provide up-to-date technical training and marketable skills to high school students. Our curriculum is designed to integrate technical programs and academic areas. This training will ultimately lead to meaningful employment in our global economy. Our students may become directly employed after Graduation or after pursuing further education.

At Keefe Regional Technical School, a student's global education includes the development of strong work habits, good citizenship and the development of interest in lifelong learning. Our technical programs foster student self-esteem, self-respect,

and social awareness. Students actively participate in their education with educational success as their primary goal. During their four years, students will undertake school projects that will benefit our member communities and their residents.

Students are educated in a safe learning environment. It is the responsibility of staff and students to develop positive relationships throughout the school. Instructors will help to foster these relationships by teaching in structured, challenging, and supportive settings. The Keefe Tech administration will help instructors and students by providing an avenue for open and constructive dialogue within a well-disciplined environment.

The fundamental concept of Career/Technical Education is that all education experiences, curriculum, instruction, and counseling should be geared for economic independence and appreciation for the dignity of work. Career/technical education is not limited to the task of skill training; it also focuses on helping the student master several career development tasks for awareness, exploration, and decision making. Keefe Regional Technical School supports an educational process designed as follows:

1. To increase the relationship between society and the schools as a whole.
2. To provide opportunities for counseling, guidance, and career development for all students.
3. To relate the subject matter of the curricula of schools to meet the needs of persons and society.
4. To extend the concept of the education process beyond the school into the area of employment and the community.
5. To foster flexibility in attitudes, skills, and knowledge in order to enable persons to cope with accelerating changes and obsolescence.
6. To make education more relevant to employment and functioning in society.
7. To eliminate any dichotomy between education and career/technical purposes and academic education.

## CAREER EXPLORATORY

The Career Exploratory Program is designed to help grade 9 students make an informed decision as to which technical Program best coincides with their aptitudes and interests.

**Technical Program** – Upon completion of the exploratory cycles, each student will choose the technical Program in which they were most interested and successful. For the remainder of the school year they will spend their exploratory periods in the shop for which they have earned placement. While they are in their technical program, they will be evaluated to determine their potential for successful employment in their chosen field. They will also have the opportunity to change technical programs if they so desire and if a seat is available within that technical program. If a program is oversubscribed, the student's academic, attendance, discipline records and performance in the Exploratory/Career Technical Program will be considered for placement into the program as indicated in the Keefe Tech Admissions Policy.

### 8001 – CAREER EXPLORATION (GR 9)

3 CREDITS

**Exploratory Program** - Prior to the beginning of the school year, the students are introduced to the career technical Programs offered at Keefe Regional Technical School. They spend 15 periods during a two-week cycle in a career/technical area exploring eight of fifteen Programs. These CTE areas are based upon choices of interest expressed by the student and also include non-traditional CTE areas.

## AUTOMOTIVE TECHNOLOGY

Keefe Regional Technical School's Automotive Technology Program is certified in all eight ASE (Automotive Service Excellence) service areas and has received master status certification from the National Automotive Technicians Education Foundation (NATEF). Keefe is an authorized inspection station under the new Massachusetts Enhanced Emission and Safety Program.

Keefe Regional Technical School offers our students the ability to work with the latest technology in the automotive service industry. After graduation, Keefe Regional Technical School students are in demand in the MetroWest community working as entry-level technicians.

### 8011 - AUTOMOTIVE TECHNOLOGY PROGRAM I (GR 9)

3 CREDITS

The Freshman Automotive Program consists of training students in the fundamental aspects of automotive service. It includes an emphasis on automotive safety practices, hazard communication, hand tool and equipment usage, precision tool knowledge, automotive component removal and replacement, work order documentation, confidence building, and teamwork skills.

**8012 - AUTOMOTIVE TECHNOLOGY PROGRAM II (GR 10)**

**5 CREDITS**

The sophomore automotive shop Program consists of performing NATEF task-based jobs on our existing training fleet of vehicles. These jobs include servicing the suspension, brake and electrical systems. Using student generated work orders, the technicians practice their skill at component removal and replacement within a team production setting. In addition, the students become familiar with precision measuring instruments during engine disassembly and reassembly procedures.

**6012 – AUTOMOTIVE TECHNOLOGY RELATED THEORY II (GR 10)**

**1 CREDIT**

This takes the students beyond basics starting with the more complicated functions. The students will learn how to diagnose and repair starters, charge systems, use testing equipment, such as battery testers, and repair standard transmissions, clutches, drive lines, cooling systems, and engine lubrication systems.

**8013 – AUTOMOTIVE TECHNOLOGY PROGRAM III (GR 11)**

**5 CREDITS**

The third year automotive student will be instructed through live hands-on work, and learn to diagnose and repair major components of domestic and imported cars. The student will first be instructed in the proper procedure of diagnosing a problem; then, the exact procedure of removal of the component, the disassembly of the unit, the inspection of the unit, the complete repair and the re-installation of the component. All of these above-mentioned procedures will be performed on engines, transmissions, differentials, and the driveline components.

**6013 – AUTOMOTIVE TECHNOLOGY RELATED THEORY III (GR 11)**

**1 CREDIT**

This course is more advanced in the automotive area. The students will learn how to service air conditioners, drive lines, fuel systems, fuel injections, exhaust emissions controls, engine diagnostics, and engine rebuilding. The students will learn how to use test equipment to check engine blocks, crankshafts, and valve trains

**8014 – AUTOMOTIVE TECHNOLOGY PROGRAM IV (GR 12)**

**5 CREDITS**

The senior shop will be run as a live repair facility. The seniors will be reviewing all automotive shop procedures plus encounter heavy involvement in the computer controls of the modern automobile. They will be instructed in the use of special test equipment, to read the codes that are stored in each computer, and the proper way to repair them.

**6014 - AUTOMOTIVE TECHNOLOGY RELATED THEORY IV (GR 12)**

**1 CREDIT**

The senior year will be devoted to teaching the students about electrical systems, engine tune ups, alternators, voltage regulators, starting circuits, wiring circuits and computer control systems. The student will learn how to diagnose and troubleshoot engine problems and how to repair them. The student will learn how the sensors operate and what role they play.

The senior automotive student will review work ethics, customer relations, attendance, and how to succeed in the automotive technical industry.

**CAREER OPTIONS INCLUDE:**

Automotive Technician  
Parts Specialist  
Service Writer/Advisor  
Service Manager  
Emission Repair Technician

# CARPENTRY

Mill and House Carpentry is a three-year Program that is divided into two major parts. The first and second year students receive basic instruction in the process of milling lumber into various components including cabinets and countertops. The third and fourth year students spend the majority of their time learning how to construct a house from foundation to finished product. The annual house-building project provides the setting for the “on the job” learning activities.

The Carpentry Program has the major role in the house-building Program, as we are responsible for completing the structure of the building in a timely fashion. This enables the other trades of Plumbing and Electrical to perform their work. The carpenters also install all windows and doors, shingle the roof, and install finished products to both the exterior and interior of the house.

## **8031 - CARPENTRY PROGRAM I (GR 9)**

**3 CREDITS**

The freshmen will learn and demonstrate safe and appropriate work practices and procedures. The students will learn how to properly and safely use and maintain hand tools, portable power tools, and stationary shop equipment. The students will begin to learn the basics of working with various types of wood and creating shop projects to increase their knowledge base and develop their skills.

## **8032 – CARPENTRY PROGRAM II (GR 10)**

**5 CREDITS**

The sophomore students will continue to develop their skills with the necessary carpentry tools through a succession of projects which build on previous skills and continue to introduce new techniques. The students will be capable of proper tool set-up and maintenance. The students will be able to produce a project from a shop drawing. Introduction to the skills required to prepare them for the house building project including the safety requirements will begin in the latter portion of the course.

## **6032 – CARPENTRY RELATED THEORY II (GR 10)**

**1 CREDIT**

Students will be re-tested on tool safety and use. The sophomores will learn how to interpret drawings and prints. They will practice related math skills and the use of measuring devices. The sophomores will know why MSDS data sheets are posted on job sites and in shop areas as a safety measure, as well as take the OSHA ten-hour training course. Students will be involved in activities involving interpersonal skills to make them better workers and thinkers.

## **8033 – CARPENTRY PROGRAM III (GR11)**

**5 CREDITS**

The juniors will learn basic framing methods used in modern house construction. The students will have the opportunity to lay out floor and ceiling joists, walls, and rafters. They will do most of the finish work involved in a house including hanging doors, installing baseboard, and building stairs. The students will learn safe work procedures. This course brings the students into direct contact with the public. The students will develop proficiency in the skills learned in the first two years of shop.

## **6033 – CARPENTRY RELATED THEORY III (GR 11)**

**1 CREDIT**

The juniors will learn how to read prints, estimate, layout, and build a modern-day house. The students will learn how to frame a house using the platform method of construction. Concepts taught are: sill and floor framing, wall framing, and roof framing. The related Program will coordinate as much as possible with the house building Program. Construction practices and safety will be continuously emphasized. Soft skills such as resume writing interviewing, getting along with co-workers, and other skills related to creating a good work ethic and a well-rounded worker.

## **8034 – CARPENTRY PROGRAM IV (GR 12)**

**5 CREDITS**

The seniors will expand on the knowledge gained from the previous years. They will refine job skills already learned, and have the opportunity to learn different methods of accomplishing the same task. As each house is different, they will learn to solve problems not previously encountered. They will learn cooperation with different trades, which is a necessity if one wishes to succeed in any trade or profession. This course is designed to provide the student with the entry level skills needed to procure employment in the carpentry trade. It is the objective to promote personal pride while striving for excellence in every task undertaken.

**6034 – CARPENTRY RELATED THEORY IV (GR 12)**

**1 CREDIT**

The seniors will learn how to do interior and exterior trim. The exterior trim will include a water table, corner boards, windows and doors, casing, rake, and siding. Interior trim will include kitchen cabinets, door and window trim, hardwood floors, baseboard and closet trim. This related instruction will coordinate with the house building Program. The seniors will review all modern day concepts and products involved in platform construction. House design and floor plan layout will be introduced as an area to extend the students’ accumulated knowledge and skills into a post high school education.

**CAREER OPTIONS INCLUDE:**

- |                   |                          |
|-------------------|--------------------------|
| General Carpenter | Lumber Sales             |
| Framing Carpenter | Pattern Maker            |
| Cabinetmaker      | Floor Layer and Finisher |
| Finish Carpenter  | Siding Installer         |
| Roofer            | Sheetrock Installer      |

**COSMETOLOGY**

This is a licensing Program for students meeting the State Board of Cosmetology’s age requirements. In the 1,000-hour course curriculum, students will learn how to cut, style, perm, color, and highlight hair. Cosmetology students will also learn basic facial procedures and manicure procedures to prepare them to take the Massachusetts State Board of Cosmetology exam. A major emphasis is placed on sanitation and sterilization.

**8041 – COSMETOLOGY PROGRAM I (GR 9)**

**3 CREDITS**

Students will learn shop safety precautions, sanitation, and sterilization. The grade 9 students will also be introduced to the basics of draping, shampooing, and conditioning the hair, braiding, roller placement and hair styling, as well as basic manicures and facials.

**8042 - COSMETOLOGY PROGRAM II (GR 10)**

**5 CREDITS**

Students will learn wet hairstyling, blow drying, thermal styling, manicuring, hair shaping, facials and make-up application as well as scalp treatments through demonstrations, DVD’s and hands-on procedures.

**6042 - COSMETOLOGY RELATED THEORY II (GR 10)**

**1 CREDIT**

The grade 10 students will cover career opportunities, life skills, professional imaging, communication, the general science of infection control: principles and practices, structure and chemical composition of the hair, principles of hair design, hair shaping, and hairstyling as well as hair removal, facials, and nail care.

**8043 - COSMETOLOGY PROGRAM III (GR 11)**

**5 CREDITS**

The grade 11 students will continue with the hands-on skills developed in grade 10 and will perfect the basic practices required by the State Board of Cosmetology while working towards their requirement of 1,000 hours. They will be introduced to chemical texture services as well as hair coloring.

**6043 - COSMETOLOGY RELATED THEORY III (GR 11)**

**1 CREDIT**

The grade 11 students will learn to develop a positive and cultivating approach in health, poise and professional ethics. They will be provided with knowledge of cosmetology theory that is needed to be successful in the trade and assist the students in creating their own sense of style. They will also learn the theory of chemical texture services as well as hair coloring. The use of films and demonstrations are used in accomplishing these goals.

**8044 - COSMETOLOGY PROGRAM IV (GR 12)**

**5 CREDITS**

The grade 12 students will continue with the chemical application of products, various hair-coloring products, the types of coloring services performed and methods used. The students will also learn chemical relaxing methods and techniques, thermal and chemical hair straightening, and the safety precautions that must be used with each salon service. The students will learn

basic salon management, how to maintain accurate business records, and the fundamental rules of first aid. The students will further enhance their ability in all phases of the cosmetology course such as, facials, manicures, hair removal, artificial nail application, scalp treatments, hair shaping, and make-up application. This will prepare the student for gainful employment and fully prepare them for the Massachusetts State Board Exam.

**6044 - COSMETOLOGY RELATED THEORY IV (GR 12)**

**1 CREDIT**

The grade 12 students will cover the science of the chemistry of products used, skin and nail structure and growth, the basics of electricity and general anatomy and physiology. They will develop a basic knowledge and understanding that will set the foundation for the student to advance into the industry. The State of Massachusetts uses demonstrations, class projects and films in accomplishing these tasks which will prepare the student in related science for their State Board Exam, issued upon completion of 1,000 hours.

**CAREER OPTIONS INCLUDE:**

Hair Stylist  
Aesthetician  
Manicurist  
Platform Artist

Salon Owner  
Receptionist  
Cruise Ship Stylist  
Nail Technician

Instructor  
Make-up Artist  
Theatrical Make-Up Artist

## **CULINARY ARTS**

The Culinary Arts Program provides students with the training and experience needed to pursue a rewarding career in the ever growing food service industry. Students learn knife skills, equipment use, cooking and baking methods, techniques and terminology, as well as customer service and restaurant management in our dining room and retail bakery operations.

Related theory classes stress the importance of safe food handling and sanitation and provide the opportunity to attain nationally recognized Serv-Safe and Pro-Start Certifications.

The comprehensive curriculum is supported and enhanced by hands-on practice in our state-of-the-art kitchen and student-run restaurant and retail bakery, open to the public.

**8051 - CULINARY ARTS PROGRAM I (GR 9)**

**3 CREDITS**

Freshmen will learn the basics of the professional kitchen. This includes running a dish washing station, pot washing, sanitation, dining room procedures, food product identification, basic sandwiches, salads and knife skills. Also covered is the use of equipment such as portion scales, baker's scales, mixers and hand tools. Baking curriculum includes: weights and measures, introduction to baking procedures and the preparation of cookies, dinner rolls, and other simple items. Students will learn trimming and cutting of vegetables and begin to learn cooking methods and techniques. The student will spend time in the dining room learning set up for service. Particular emphasis is placed on physical safety and food safety.

**8052 - CULINARY ARTS PROGRAM II (GR 10)**

**5 CREDITS**

Sophomores will continue with their kitchen basics. Students will continue to develop food and personal practices, knife skills and preparation skills. Students will work with basic recipes/formulas to develop organizational skills and some independent work habits. They will also be introduced to preparation of vegetables, starches and various proteins using a variety of cooking methods. Students will learn to identify and make basic soups and salads. The students will work on yeast and quick breads, pie dough products, custards and dessert sauces. Particular emphasis is placed on safety.

**6052 - CULINARY ARTS RELATED THEORY II (GR 10)**

**1 CREDIT**

Sophomores will continue with their kitchen basics as in the first year. Students will learn more about recipes/formulas, product and tool identification and weights and measure. Students will also complete the NRA Serv-Safe certification Program for food safety.

**8053 - CULINARY ARTS PROGRAM III (GR 11)****5 CREDITS**

Juniors will continue to develop professional work habits and begin to work on meat, poultry and seafood preparation, sauces, soups, and more advanced bakery items including cakes, frozen and plated desserts. Students will operate the East Side Room restaurant including a la carte cooking and service. In addition, they will learn to operate the Point of Sale register system and retail pastry counter. Students will gain practical marketing and merchandising experience.

**6053 - CULINARY ARTS RELATED THEORY III (GR 11)****1 CREDIT**

Juniors will be introduced to advanced cooking methods and techniques as well as baking theory. Students are introduced to market forms and quality standards for meats, poultry, seafood and produce. Students continue to develop measurement skills, safety and sanitation.

**8054 - CULINARY ARTS PROGRAM IV (GR 12)****5 CREDITS**

Seniors will build upon professional work habits, advanced meat, poultry and seafood preparation, sauces, soups, bakery items, and desserts. Students will operate the East Side Room restaurant and bakery producing advanced desserts, food courses and dining room service. In addition, students will develop advanced plating and garnishing skills. Students will also develop managerial and entrepreneurial skills.

**6054 - CULINARY ARTS RELATED THEORY IV (GR 12)****1 CREDIT**

Seniors will build on more advanced cooking methods and techniques as well as baking theory. Students continue to work on market forms and quality standards for meats, poultry, seafood and produce. Students continue to develop measurement skills, safety and sanitation.

**CULINARY CAREER OPTIONS INCLUDE:**

Server	Dining Room Manager	Baker
Caterer	Pastry Chef	Host/Hostess
Food Sales/Distribution	Chef	Cook
Cookbook Author/Food Blogger	Food Critic	Food Scientist
Nutritionist	Chef Instructor	Product Development
Food Stylist	Artisanal Food Manufacturing	Entrepreneur
Brewer/Vintner	Hotels/Resorts/Cruise Ships	

**DENTAL ASSISTING**

The Dental Assisting Program is designed to prepare students with knowledge and hands-on skills to gain entry-level employment in the dental field. Students will be exposed to all aspects of dental assisting including appointment scheduling, patient charts, and legal obligations of the dental team. Emphasis will be placed on infection control, dental radiology, chairside dental assisting, dental materials and dental specialties. Certifications will include OSHA Career safe, First Aid and CPR Healthcare Provider level through the American Heart Association. Students 18 years of age are qualified to apply for a dental assistant license through the state of Massachusetts. The students will have the opportunity to achieve certifications through the Dental Assisting National Board (DANB). After completion of a minimum of 3,500 hours of work experience, the student will be eligible to take the Chairside portion of the DANB exam to obtain full certification as a dental assistant.

**8171 -DENTAL ASSISTING PROGRAM I (GR 9)****3 CREDITS**

During Freshmen Exploratory, the students will spend five days in the dental assisting Program. The importance of Program safety and emergency procedures will be established. Students will receive an overview of the course including fundamental dental anatomy, infection control and dental materials. Skills introduced will include creating dental casts, proper handwashing, taking an alginate impression on a typodont and placing an amalgam restoration. After Program selection, the students will

become familiar with infection control, dental anatomy, the role and responsibilities of the dental assistant, personal protective equipment, legal and ethical issues, and front desk duties. Additional skills will include greeting and seating the patient, coronal polishing on typodont, application of fluoride treatment and telephone etiquette.

**8172 - DENTAL ASSISTING PROGRAM II (GR 10)**

**5 CREDITS**

The main focus of the sophomore year will involve infection control protocols. Skills will include breaking down, cleaning and disinfection of the dental treatment area, proper handling, and sterilization of dental instruments. The student will also learn about maintaining dental equipment, flushing dental water lines and biological monitoring of the autoclave. Other topics to be covered include dental charting, instrument identification and sequence, dental bases and liners, examination and treatment planning. CPR and First Aid certification will be acquired.

**6172 - DENTAL ASSISTING RELATED THEORY II (GR 10)**

**1 CREDIT**

The importance of infection prevention will be covered. This will encompass microbiology, disease transmission, and prevention, principles and techniques of disinfection, principle and techniques of instrument processing and sterilization. OSHA Career Safe certification will be earned.

**8173 -DENTAL ASSISTING PROGRAM III (GR 11)**

**5 CREDITS**

Junior year curriculum will highlight radiographic imaging. Students will learn and practice techniques for exposing intraoral and extraoral radiographs on a Dental X-ray Teacher Training Replica (DXTTR) mannequin. Introduction to DEXIS digital radiology software as well as analog radiographs; processing and developing or radiographs and the American Dental Association approved method for dental mounting. Additional skills will include record keeping, mixing and application of various impression materials, fabricating temporary crowns, and preventing a medical emergency.

**6173 - DENTAL ASSISTING RELATED THEORY III (GR 11)**

**1 CREDIT**

Junior year related theory will incorporate foundations of radiology, radiographic equipment, radiation safety, digital imaging, intraoral and extraoral imaging, dental films and processing. Supplemental topics will include legal issues, quality assurance, infection prevention, errors and solutions for exposing, processing and developing.

**8174 - DENTAL ASSISTING PROGRAM IV (GR 12)**

**5 CREDITS**

In the senior year, students will continue to develop and hone their clinical abilities from preceding years and apply newly acquired skills. This will include assisting duties for orthodontics, pediatrics, endodontics, periodontics, prosthodontics, and oral maxillofacial surgery. Support skills will include vital signs, patient assessment, dental materials and CPR recertification. Students will have the opportunity to work in a co-operative job to apply and refine their previous expertise.

**6174 - DENTAL ASSISTING RELATED THEORY IV (GR 12)**

**1 CREDIT**

The seniors will study procedures, instruments and equipment used in various dental specialties, patient assessment techniques and importance of vital signs.

Career Options Include:

Licensed/Registered Dental Assistant  
Surgical Assistant  
Dental Office Receptionist  
Orthodontic Assistant

Sterilization Assistant  
Patient Care Coordinator  
Insurance Coordinator  
Dental Hygiene Assistant

## **DESIGN AND VISUAL COMMUNICATIONS**

Students interested in the world of Visual Design will find opportunities to explore several areas of this exciting field. Freshmen and sophomore students will learn the foundations of design, including color theory, drawing, perspective, and layout. In the junior and senior years, students will work with Photoshop, In-Design, Digital Photography and Video to produce a variety of

multimedia projects for their portfolio. Package Design, Product Photography, Multimedia Presentations, Web design, and Audio Production will be introduced through the use of the latest technology.

Graduates of this Program will be prepared to continue their education at a college level or obtain an entry-level position.

**8141 – DESIGN AND VISUAL COMMUNICATIONS PROGRAM I (GR 9) 3 CREDITS**

Freshmen will be introduced to the elements and principles of design. Drawing from still life, imagination, and the human figure will be emphasized. Students will begin keeping a sketchbook of ideas and assigned drawings. The concept of visualization will be introduced through the creation of thumbnail and rough layout drawings. Students will be introduced to the MACLAB through a series of projects that begin in the studio and are completed using several different applications.

**6142 – DESIGN AND VISUAL COMMUNICATIONS RELATED THEORY II (GR 10) 1 CREDIT**

Sophomores will research artists, art movements, techniques, and history. Students will prepare and present a multimedia slideshow based on these areas. Students will become familiar with pitching ideas, group critique, and brainstorming sessions. Students will continue to receive training via lecture, demonstration, and video.

**8142 – DESIGN AND VISUAL COMMUNICATIONS PROGRAM II (GR 10) 5 CREDITS**

Sophomore students will begin working on a portfolio of their work. Assignments in studio and MACLAB will be given to strengthen the student materials presented in their portfolio. Students will complete daily and weekly assignments based on the Massachusetts frameworks for Design & Visual Communications. Students will be introduced to Vector Drawing applications in the MACLAB and will create a series of pieces utilizing this software. Image scanning and manipulation will be demonstrated. Instruction in multimedia technologies available to artists will continue throughout the sophomore year. Students will complete portfolio pages for each project completed.

**6143 - DESIGN AND VISUAL COMMUNICATIONS RELATED THEORY III (GR 11) 1 CREDIT**

Juniors will continue with research on artists, techniques, and history. Students will prepare and present a multimedia slideshow using industry standard computer applications, based on one of the subjects previously mentioned. Students will continue to receive training via lecture, demonstration, and video. An emphasis will be placed on self-guided exploration of art styles, techniques and interpretation.

**8143 – DESIGN AND VISUAL COMMUNICATIONS PROGRAM III (GR 11) 5 CREDITS**

Juniors will continue with studio and digital projects. Students will refine and enhance their knowledge and skills working in the studio with several media including: acrylic paint, charcoal/pastels, watercolor and colored pencil. Students will continue to explore the software applications available to artists in the MACLAB. Photoshop and Illustrator will be used to create portfolio pieces. Several specialized software applications will be utilized in the creation of logos letterheads, brochures and other advertising media. Students will work with digital photography to archive work as well as create multimedia presentations. Portraiture and product photography will be introduced.

**6144 – DESIGN AND VISUAL COMMUNICATIONS RELATED THEORY IV (GR 12) 1 CREDIT**

Seniors will design and create senior presentations using multimedia authoring software. This presentation will be a 10-minute multimedia recap of their experiences at Keefe Regional Technical School. Artwork, photographic images, music and video will be combined to create a digital “scrapbook”. An electronic portfolio will be produced in parallel with this year long assignment. Proper presentation/submission of artwork for college consideration will be emphasized. Students will work toward a successful admission application at an art school or schools. Students will prepare work for review and critique by college admissions representatives.

**8144 – DESIGN AND VISUAL COMMUNICATIONS PROGRAM IV (GR 12)****5 CREDITS**

Emphasis in senior year is placed on projects/pieces to be used in a website and/or portfolio presentation. Pieces prepared traditionally, as well as digitally, will be collected and prepared for presentation. Portfolios will be complete and ready for presentation to college admission representatives or work opportunities.

**CAREER OPTIONS INCLUDE:**

Graphic Designer	Fine Art
Illustrator	Web Design
Multimedia Artist	
Industrial Design	
Fashion Design	
Product/Package Design	
UX Design	

**EARLY CHILDHOOD EDUCATION**

The Early Childhood Education Program at Keefe Regional Technical School is an in-house training site designed to introduce the high school student to the development of children. Students choosing Early Childhood will be exposed to the emotional, social, physical, and cognitive changes that take place during a child’s life.

Students will learn and demonstrate the duties of a classroom teacher. Students will also learn theme development, behavior management, observation, and assessment skills for children. Other curriculum learned includes: classroom limitations, child guidance, brain development, lesson plan creations, and classroom learning areas (math, science, language, art and writing).

The Early Childhood Education Program at Keefe Regional Technical School provides practice in different off-site child care centers. Students who successfully complete this course will meet the licensing requirements for the Massachusetts Department of Early Childhood and Care in infant-toddler and preschool areas. Students will also receive First-Aid and CPR certifications. Students in Early Childhood Education are eligible to receive three college credits from Massachusetts Bay Community College upon Graduation.

**8061 - EARLY CHILDHOOD EDUCATION PROGRAM I (GR 9)****3 CREDITS**

Freshmen will be introduced to the employability/physical skills they need in order to work with children. Freshmen will begin to learn about prenatal development. Students will be introduced to children disabilities, infections and family components. As well as, be introduced to the physical, emotional, social, cognitive, and moral development of children ages birth through adolescence. Students will learn how activities are incorporated into the curriculum in order for children to learn. Freshman will begin to learn about the development of children beginning at birth.

**8062 - EARLY CHILDHOOD EDUCATION PROGRAM II (GR 10)****5 CREDITS**

Child growth and development continues to be the focus for the sophomore year. Students will continue the introduction to the physical, emotional, social, cognitive, and moral development of children, birth through adolescence. Students will begin working with children in the childcare center to demonstrate the duties of classroom teachers.

**6062 – EARLY CHILDHOOD EDUCATION RELATED THEORY II (GR 10)****1 CREDIT**

Students will study the responsibilities of the childcare teacher and the importance of a professional attitude. In addition, students will be introduced to the responsibilities of being a professional, the importance of communicating with others, and the need to project a professional appearance.

**8063 - EARLY CHILDHOOD EDUCATION PROGRAM 111 (GR 11)****5 CREDITS**

The information received during the sophomore year will assist the junior early childhood education and teaching students in the creation of developmental areas and activities for young children. Juniors will be expected to create educational, fun and age appropriate lesson plans in math, language, art, technology, dramatic play, to name a few. Students will be introduced to assessments, observation and interpretation in the EEC classroom. Special populations of children will also be discussed. Junior students will continue to assist teachers at the off-site childcare center, while earning hours toward their Massachusetts Teachers License in infant, toddler and preschool.

**6063 – EARLY CHILDHOOD EDUCATION RELATED THEORY III (GR 11)**

**1 CREDIT**

Students will be introduced to career options involving children and families that will range in educational requirements and experience. Students will continue to learn about professional expectations; students will examine career experiences through the Professional Development Program (PDP's) readings and student texts.

**8064 - EARLY CHILDHOOD EDUCATION PROGRAM IV (GR 12)**

**5 CREDITS**

Senior students will be exploring the business aspect of owning and operating a child care center. They will be expected to create a business plan for their future reference. Seniors will continue to plan, create, and perform specific developmentally appropriate activities with the preschoolers attending our early childhood education center. Students will also have the opportunity to participate in cooperative education that will give them hands-on experience at area centers. Students successfully Graduating from our ECE Program are able to go into the Early Childhood field upon Graduation in the capacity of Assistant Preschool Teacher. Once a student has obtained their Office of Child Care Services license, they will be able to be employed as a preschool teacher.

**6064 – EARLY CHILDHOOD RELATED THEORY IV (GR 12)**

**1 CREDIT**

Students study the growth and development of young children. Each week topics that introduce and influence development are discussed. Topics include: prenatal development and the newborn and continues with the physical, social, emotional, and cognitive growth of children from the infant through the five-year-old. In addition, students will look at how to provide for the children's needs at each stage of development and the importance of play.

**CAREER OPTIONS INCLUDE:**

Classroom Teacher	Guidance Counselor
Social Worker	Resource Referral
Child Psychologist	Pediatric Nurse
Child Care Center Director	Play Therapist
Parent and Family Life Educator	Speech-Language Pathologist

## **ELECTRICAL**

The electrical trade is one of the skilled trades of the construction industry, a trade where individual ability and motivation are recognized and rewarded. The Keefe Regional Technical School Electrical Department covers commercial, industrial, and residential wiring of old and new buildings as well as alarm system installation. The course of study provides the student with the knowledge of how a building is constructed and wired as well as solar energy and wind energy technology.

Residential wiring is just one segment of the electrical course of study. Keefe Regional Technical School emphasizes residential wiring by completing all the electrical work for our annual house-building project. This project introduces the students to the telephone, familiarization with blueprints for location of outlets, and the type of wiring method that will satisfy the Massachusetts Electrical Code.

**8071 – ELECTRICAL PROGRAM I (GR 9)**

**3 CREDITS**

Freshmen will learn about shop safety, the proper use of hand tools, responsibilities, shop procedures, and the Right to Know Laws regarding use and storage of chemicals. Students will learn to install low voltage wiring for doorbells and buzzers. Students will be introduced to wiring methods for residential, commercial, and industrial settings. Students will be certified to use a conduit cutting and threading machine. Students will be introduced to alternating current theory and the National Electrical Code.

**8072 - ELECTRICAL PROGRAM II (GR 10)**

**5 CREDITS**

Sophomores will focus on becoming skilled in installing seven common wiring methods used today. As the year progresses, students will attain skills in residential wiring, commercial wiring, and industrial wiring. We cover installations of Romex, low voltage cabling, armored cable, electrical metallic tubing, P.V.C., rigid conduit, and wire mold. Students will become proficient with three-way switching circuits, doorbell circuits, parallel circuits, and switch loops. Sophomores will learn to bend conduit to blueprint specifications.

**6072 -ELECTRICAL RELATED THEORY II (GR 10)**

**1 CREDIT**

Sophomores will learn the basics of navigating the Massachusetts electrical code. They will also learn the higher math of the electrical trade along with batteries wire sizing, voltage drop, switching, and series parallel circuits. Safety on and off the job will be covered. Also, they will learn O.S.H.A. and other safety organizations.

**8073 – ELECTRICAL PROGRAM III (GR 11)**

**5 CREDITS**

Juniors will learn how to use and maintain all safety equipment on both inside and outside projects. They will train in all aspects of the electrical field. Students will be introduced to outside projects in the community and continue to work on jobs in the school itself. They will also train on lab volt trainers to sharpen their motor control and troubleshooting skills. At the beginning of the third quarter, students would be allowed to participate in the Co-op Program.

**6073 - ELECTRICAL RELATED THEORY III (GR 11)**

**1 CREDIT**

Commercial and residential blueprint reading and National Electrical Code (N.E.C.) regarding commercial buildings will also be covered. A more in-depth study of blue prints and the N.E.C. articles, conductors, branch circuits, and safety on and off the job will be covered.

**8074 – ELECTRICAL PROGRAM IV (GR 12)**

**5 CREDITS**

Seniors will learn how to properly use all the equipment in the shop. They will work more substantially on the outside projects. They will be given changes to individually advance in many areas of the trade. Students will also learn the knowledge of all factors including cost of tools and materials, time and labor. This will prepare them for an entry-level job in the trade and eventually a license. They will also train on lab volt trainers to sharpen their motor control and industrial control wiring troubleshooting skills.

**6074 - ELECTRICAL RELATED THEORY IV (GR 12)**

**1 CREDIT**

Seniors will learn about industrial transformers, fire alarms, motors, N.E.C. motor rules and Programmable logic controllers. The math covered this year is inductance, transformer, and motor calculations. The N.E.C. codes on industrial work are covered. Also covered are: labor laws, wages and the current electrical industry, apprenticeship Programs and employment. A complete review of all safety is covered in-depth.

**ELECTRICAL CAREER OPTIONS INCLUDE:**

Apprenticeship  
Electrical Construction  
Cable Installation  
Signaling Systems

Communications  
Alarm System Installation  
Motor Control  
Underground Service Installation

Light and Power Systems  
Electrical Motor Maintenance and Repair  
Equipment and Appliance Service

Residential Wiring  
Commercial Wiring  
Job Estimating

## HEALTH CAREERS

Students in the Health Careers Program have the opportunity to acquire skills that prepare them for successful career entry, advancement, and/or continuing education in the health field. This Program is designed to focus on the certification of nursing assistants. Students will receive certification as a Nursing Assistant and certifications in OSHA, First Aid, CPR/AED, Dementia Training. The first phase will emphasize foundation skills and common skills gloving, hand washing, and vital signs that are necessary in all health occupations. The second phase will focus on job-specific skills and knowledge. Skills learned will be introduced and practiced in the classroom and then transferred to residents in a long-term care setting during the career technical training activities. We often invite guest speakers in from the Healthcare Industry to share their knowledge and expertise with our students at all grade levels.

### **8091 - HEALTH CAREERS PROGRAM I (GR 9)**

**3 CREDITS**

Freshman Exploratory is a five-day Program designed to expose students to the Health Careers Program. The week long exploratory provides the student with an overview of the program course content, certifications policies and clinical opportunities. Students will learn the basics of first aid, how to recognize when someone needs CPR, and how to give CPR. Exploratory allows the student a “glimpse” into the aging process, and the importance of accurate measuring and recording of vital signs. For students who choose the Health Careers Program, the focus of study will include Health Care Safety, Infection Control, Professionalism, and basic skills related to the “Care of the Residents Environment”.

### **6092 – HEALTH CAREERS RELATED THEORY II (GR 10)**

**1 CREDIT**

Medical Terminology Course is introduced. Students study the principles of medical word building to help the student develop the extensive medical vocabulary used in health care occupations. Students receive a thorough grounding in basic medical terminology through a study of root words, prefixes and suffixes. The study focuses on correct pronunciation, spelling and use of medical terms. This skill and ability will provide the student with a powerful foundation of knowledge for the language of medicine. The use of the “Dean Vaughn Learning System” will enable the student to quickly remember and effectively apply the 350 elements taught in this course.

### **8092 – HEALTH CAREERS PROGRAM II (GR 10)**

**5 CREDITS**

The sophomore students will be introduced to the healthcare industry and have the opportunity to obtain certification in First Aid, Heartsaver CPR/AED, OSHA Career Safe Training, and Dementia Training. The sophomore students will also be exposed to introductory theory and related skills. Topics include Understanding Healthcare Settings, the Nursing Assistant and Care Team, Legal and Ethical Issues, Communication, Preventing Infection, and Safety and Body Mechanics. Students will complete a “Pre-Care Curriculum”. Skills will include, but are not limited to proper handwashing, applying personal protective equipment, bed making, vital signs, nail care, hair care, and repositioning a resident. Students will also participate in community volunteer clinical experiences which takes place in Long-Term Care Facilities, the Senior Centers, and Pearl Street Pantry. Students also participate in a “Sages and Seekers” program designed to bridge the gap between seniors and teenagers in order to generate the exchange of valuable wisdom. The “Body Systems” Course is started in 10th grade.

### **6093 – HEALTH CAREERS RELATED THEORY III (GR 11)**

**1 CREDIT**

Medical Terminology Course is completed. Students will receive a certificate of Completion for the course after achieving 100% on the Final Exam. The award will give evidence of their complete knowledge and understanding of medical terminology as presented in this course and will be a testament of the student’s high academic achievement.

**8093 – HEALTH CAREERS PROGRAM III (GR 11)****5 CREDITS**

As a junior, the student will focus on completing the Health Assisting Program of Studies and focus on obtaining certification as a Nursing Assistant through the American Red Cross, Massachusetts Department of Public Health, and Massachusetts Department of Elementary and Secondary Education approved curriculum. The student will complete theory and skills and provide direct, hands-on resident care with the supervision of their instructor at a nearby long-term care facility. The “Body Systems” course is completed in 11th grade.

**6094 – HEALTH CAREERS RELATED THEORY IV (GR 12)****1 CREDIT**

Students in senior year will complete the Home Health Aide Course and earn a certificate of completion. Students learn how to provide assistance to those elders who choose to stay at home but require assistance with ADL, chronically ill, providing valuable assistance for family caregivers who need relief from the stress of caregiving. Prerequisite for the Home Health Aide Course is the successful completion of the Nursing Assistant Program. A basic Medical Math course has been incorporated into the curriculum.

**8094 – HEALTH CAREERS PROGRAM IV (GR 12)****5 CREDITS**

Health Careers students’ senior year are encouraged to participate in the Cooperative Education Program. The program provides an opportunity for deserving students to participate in paid employment in a related Health Careers area during their shop week.

Students who do not participate in Co-Op will continue their Health Careers studies and learn advanced skills that a Certified Nursing Assistant may learn on the job. The course, Certified Nursing Assistant II, will use the “Body Systems Course” as a guide and implement related skills pertinent to individual systems. Skills may include Electrocardiogram (EKG), Blood Glucose Testing, Urinalysis, and Cranial Nerve Testing, to list a few.

Students may be offered Medical Terminology remediation so that they have the opportunity of earning their Certificate of Completion.

**HEALTH CAREER OPTIONS INCLUDE:**

Certified Nursing Assistant  
Patient Care Assistant  
Activity Assistant  
Home Health Care/Aides  
Dietary Assistant

## **HORTICULTURE AND LANDSCAPE MANAGEMENT**

This Program provides students with training opportunities in all aspects of the Green Industry. The curriculum stresses the study of landscaping management, plant and soil science, horticulture, turf management, equipment operation, small engine repair, landscape construction, masonry, greenhouse management, arboriculture care, floral designing, and plant propagation. Students use the Keefe Regional Technical School grounds and greenhouse for hands-on training and real-life work experiences. In addition, eligible students can participate in off-site cooperative work experiences. Placements may include private landscaping companies, Framingham Parks and Recreation Department, Framingham Highway Department, Natick Community Organic Farm or Cavicchios Greenhouses.

**8101 - HORTICULTURE AND LANDSCAPE MANAGEMENT PROGRAM I (GR 9)****3 CREDITS**

A broad overview of the horticultural industry is the primary learning track for new students. Learning to grow, care for and maintain various plants in a wide variety of circumstances is the focus. Plant identification is a constant component of the year as well. Growing plants in the school Greenhouse, vegetable gardens, and grounds are primary learning opportunities. Vegetables are grown and harvested for use in our culinary arts department restaurant. Flowers are grown and utilized for designing, selling, and grounds beautification. Students will also be familiarized with industry equipment and tools.

**8102 – HORTICULTURE AND LANDSCAPE MANAGEMENT PROGRAM II (GR 10)****5 CREDITS**

With a good foundation of how plants grow, students at this level work on more publicly visible horticultural projects. Students continue growing plants in all areas of the school grounds as well as maintaining and improving school grounds; maintaining and improving community gardens and property; participating in professional horticultural events, shows, and competitions; and operating all Program landscaping equipment safely and proficiently. The Program also produces its own maple syrup with the efforts of the 10<sup>th</sup> graders. Students will benefit from working relationships with the Natick Organic Farm (maple sugaring, greenhouse growing and gardening), The Massachusetts Horticulture Society as well as Hopkinton State Park (landscaping and natural resource management).

**6102 -HORTICULTURE AND LANDSCAPE MANAGEMENT RELATED THEORY II (GR 10) 1 CREDIT**

Students will be re-tested on tool and equipment safety and use. Sophomores will learn plant science, growing techniques, horticultural industry practices and regulations, and general mechanical skills. Plant identification is an emphasis at this level. They will practice related math skills and the use of measuring devices. The sophomores will know why MSDS data sheets are posted on job sites and in shop areas as a safety measure, as well as take the OSHA ten-hour training course. Students will be involved in activities involving interpersonal skills to make them better workers and thinkers.

**8103 -HORTICULTURE AND LANDSCAPE MANAGEMENT PROGRAM III (GR 11)****5 CREDITS**

Students begin taking a major role in all aspects of school grounds, landscape, greenhouse, and garden management. At this level, students are responsible for assisting with the planning and timing of all landscape and horticultural work on the school grounds. The students' responsibility is increased and they are expected to take initiative and represent the Program for all school and community horticulture, educational, outreach, sales, and promotional events. Students will maintain all equipment. Small and large engine maintenance and repair work is done at this level. All Program marketing and sales are generated from students at this level. Students are expected to participate in the FFA (student agriculture and horticulture organization) at a competitive level.

**6103 -HORTICULTURE AND LANDSCAPE MANAGEMENT RELATED THEORY III (GR 11) 1 CREDIT**

Students will be re-tested on tool and equipment safety and use. The juniors will further develop their plant science knowledge. They will utilize this knowledge by developing landscape designs and plans using appropriate plant materials. Designs are developed, presented, and often implemented. Juniors develop their personal portfolios at this level by organizing and accumulating their practical work. Also, students at this level are learning all aspects and responsibilities of horticulture workers in a variety of "green" occupations.

**8104 - HORTICULTURE AND LANDSCAPE MANAGEMENT PROGRAM IV (GR 12)****5 CREDITS**

A leadership role is introduced and placed upon students at this level. Students fine-tune all of their skills in horticulture, landscaping, sales, marketing, customer relations, and mechanics. All components of the Program to date are re-emphasized. Preparations are made for transitioning into industry, small business management, or higher education. Methods of achieving this are:

- a. Empowering students with "crew leader" responsibility and role in greenhouse manager, small engine mechanic, large equipment mechanic, garden manager, tree and shrub specialist, turf manager, shop manager, and sales and marketing manager.
- b. Participate in professional conferences and job fairs
- c. FFA and SkillsUSA competitions
- d. Participation in Horticultural Cooperative Education Experiences (each student is encouraged to do a minimum of a trimester at a workplace).

**6104 -HORTICULTURE AND LANDSCAPE MANAGEMENT RELATED THEORY IV (GR 12) 1 CREDIT**

Students will be re-tested on tool and equipment safety and use. Plant identification, vocabulary, and science skills are all enhanced at this level. Also, the seniors will be working on further preparing themselves for post-graduation by developing resumes, business plans, college applications, scholarship applications, and other relevant materials. Students will be learning

about leadership in the workplace. This curriculum ties in with their increased level of responsibility on our school grounds maintaining grounds and gardens. By the third trimester, students should be ready to be placed on cooperative work experiences.

**HORTICULTURE AND LANDSCAPE MANAGEMENT CAREER OPTIONS INCLUDE:**

Landscape	Grounds Maintenance Management
Greenhouse Management	Nursery Worker
Arboriculture Worker	Landscape Designer
National, State, or City Department of Public Works	Landscape Construction
Turf Management/Golf Course Management	Equipment Operators
Florist	Park Ranger
Organic Farming	

## HVAC/R

The Heating, Ventilation, Air Conditioning, and Refrigeration (HVAC/R) is one of the fastest expanding construction trade occupations in the country today. A well-trained student can enjoy the benefits of expanded career pathways, job security, and opportunities for advancement. Through HVAC-R theory instruction, laboratory projects, and live work on jobs within the Keefe Tech community, students learn how to install, service and maintain equipment used in environments, such as residential homes, schools, hospitals, restaurants and factories.

In-depth instruction related to electrical theory, the physics of heat and fluids, formulas for heat load calculations, as well as basic design and engineering of heating and cooling systems make HVAC a perfect fit for students interested in the field of applied science and math.

### **8191- HVAC/R PROGRAM I (GR 9)**

**3 CREDITS**

Heating, Ventilation, and Air Conditioning 17056 "These courses synthesize basic and advanced principles in heating, ventilation, and air conditioning and include topics such as air filtration methods, humidity control, and the installation and maintenance of heat pumps, furnaces, and air conditioners. Students also learn about climate control systems; electrical wiring; systems design; sizing, fabricating, and installing ductwork; installing and maintaining climate control systems; and safety.

**HVAC/R CAREER OPTIONS INCLUDE:**

Commercial HVAC&R apprentice	Ductwork Installer	Pipe fitter
Project cost estimator	HVAC&R Control Technician	Design engineer
Apprentice HVAC&R technician	Facilities Manager	HVAC/R engineer
Residential HVAC&R apprentice	Project Manager	System Designer
Assistant facilities manager	Maintenance Technician	Assistant project manager

## **INFORMATION TECHNOLOGY**

As both a Cisco and CompTIA Academy, our Information Technology program prepares students for industry exams such as CompTIA A+, CompTIA Network and Cisco CCNA that validate their skills. In the course of the program, students actively learn the fundamentals of computer repair and maintenance, advanced networking technologies, advance network application with Cisco switches and routers, and network security/cybersecurity operations analyst to meet the demands of the dynamic industry of Information Technology. The program prepares students to enter into entry-level Information Technology positions as well as prepares them for further education in the fields of Computer Science and more Information Technology career specific Associate Degrees at Community Colleges.

### **8111 - INFORMATION TECHNOLOGY PROGRAM I (GR 9)**

**3 CREDITS**

The Information Technology (IT) Basics Fundamental Course covers the necessary career skills to become a successful entry-level computer repair technician. The curriculum is designed to develop working knowledge of how computers operate both on a hardware platform and OS platform. Students will build state-of-the-art computers and install and configure multiple operating systems. Students will learn how to develop critical thinking and complex problem-solving skills using hands-on labs and virtual learning tools. Additionally, students will apply skills and procedures to install and upgrade hardware and software and troubleshoot systems. Labs will include Testout Lab Sim and using the Cisco Packet Tracer simulation tool.

### **6112- INFORMATION TECHNOLOGY RELATED THEORY II (GR 10)**

**1 CREDIT**

In the Basic HTML Fundamentals Course the student will learn to create and maintain Web pages using HTML and CSS. This course is taught in our PC computer lab, but one can do the coursework on other computer platforms. It is assumed that the student is proficient with the operating system on their computers, including file management and connecting to the Internet. It is also assumed that the student is proficient with using Web browsers. In this course, you will learn to edit HTML and CSS files directly using HTML or text editors.

### **8112 - INFORMATION TECHNOLOGY PROGRAM II (GR 10)**

**5 CREDITS**

The Advanced IT Essential Course will prepare students for new technology within the IT field. Students will concentrate on installations and configuration of computer systems and peripheral devices to enhance the system capabilities. Students will learn advanced troubleshooting methods and how to properly remove malware and viruses from computer systems. Students will also learn how to fix mobile devices and configure them for everyday use. Labs will include Testout Lab Sim and using the Cisco Packet Tracer simulation tool.

The Basic Networking Fundamentals Course introduces the students to the seven layers of the OSI model. General topics include network topologies; introduction to Local Area Networks, such as Ethernet, Token Ring, and FDDI, and internet-working. Special topics include TCP/IP and FTP protocols, socket interface, Remote Procedure Call (RPC), and client-server architecture. Students will learn to design networks and learn the basic routers and switching configurations. Students will utilize Cisco Packet Tracer simulation tools as well as real equipment to build and troubleshoot networks. Labs will include Testout Lab Sim and using the Cisco Packet Tracer simulation tool.

### **6113 - INFORMATION TECHNOLOGY RELATED THEORY III (GR 11)**

**1 CREDIT**

Introduction to the JavaScript language course will explore the more unique and tricky JavaScript features such as closures, higher-order functions, and prototype object oriented models that perhaps are not familiar to many students who are familiar with Java and Python as their primary languages. We will also introduce how JavaScript is used as a popular technology for both the frontend and backend web applications.

**8113 – INFORMATION TECHNOLOGY PROGRAM III (GR 11)**

**5 CREDITS**

This course is designed to challenge students to build more complex networks and implementing IP address schemes, creating VLANs and using advanced routing protocols RIP, OSPF and EIGRP to organize and manage a more complex network. Students will configure, verify, and troubleshoot basic to advance router operations and routing on CISCO Devices using Cisco Packet Tracer and real Cisco equipment. Labs will include Testout Lab Sim and using the Cisco Packet Tracer simulation tool.

**6114 - INFORMATION TECHNOLOGY RELATED THEORY IV (GR 12)**

**1 CREDIT**

Senior Labs Course: This course is designed to allow students to work hands-on with Server Management or Computer Virtualization. Students will complete assorted hands-on labs and projects which will be part of their senior portfolio. Senior students will also concentrate on attaining certification in areas of COMPTIA/MTA/Cisco.

**8114- INFORMATION TECHNOLOGY PROGRAM IV (GR 12)**

**5 CREDITS**

Windows Server Administration Fundamental Course helps teach and validate fundamental technology concepts. Server fundamentals such as managing Windows Servers (including virtualization) and storage, along with monitoring and troubleshooting servers are included. It also covers such topics as essential naming, directory, and print services. Students also learn of popular Windows Network Services and Applications.

Computer Virtualization Course implements and supports virtualization of clients of servers in a networked computing environment. This course explores installation, configuration, and management of computer virtualization workstation and servers. Introduce Virtualization and Cloud Computing concepts and technologies to provide information on networked storage for virtualization infrastructure needs.

**INFORMATION TECHNOLOGY CAREER OPTIONS INCLUDE:**

PC Technician  
Field Service Technician  
Network Administrator  
Network Engineer  
Linux System Administrator

Remote Support Technician  
Helpdesk Technician  
Technician Support Specialist  
Cyber-Security Technician

**CERTIFICATIONS:**

OSHA 10 Hour General Industry  
CompTIA IT Fundamentals  
CompTIA A+  
CompTIA Network+

Cisco Networking Academy IT Essentials  
Cisco Networking Academy CCNA  
Testout Certifications  
Precision Exam Certification

## **LEGAL AND PROTECTIVE SERVICES**

The Legal and Protective Services Program provides an opportunity for students to learn fundamental skills and knowledge of professionals in the field of legal and protective services. Students study a variety of legal and protective service skills such as communications, criminal investigation, crime scene processing, objective report writing, criminal law procedure, disaster preparedness, ethics, law enforcement, private investigations, surveillance practices, and government functions.

**8161 – INTRODUCTION TO CRIMINAL JUSTICE (GR 9)**

**3 CREDITS**

In this freshman course, students will engage in an introduction to the careers in the legal and protective services field. The curriculum includes the basic knowledge and application of the laws, rules, regulations, and other influences that govern the operation of our nation's criminal justice system and related protective services. Student activities will focus on safety practices and the activities of professionals in the field.

**8162 –CRIMINAL JUSTICE I (GR 10)**

**5 CREDITS**

Sophomores will be introduced to the basics of the Criminal Justice System. Career pathways in Law, Public Safety Security and Corrections will be introduced. Students will focus on criminal investigation, collection of evidence, criminal trial procedure through moot court experiences, and continue to develop knowledge of Constitutional Law and the Bill of Rights.

**6162 –CRIMINAL JUSTICE I RELATED THEORY I (GR 10)**

**1 CREDIT**

Sophomores will study the criminal justice and civil law. Related Theory will focus on criminal investigations, criminology study of the criminal mind, the basics of evidence law in criminal trials, and civil law cases.

**8183 – CRIMINAL JUSTICE II (GR 11)**

**5 CREDITS**

Juniors will understand the court system both at state and federal levels. Court room demeanor and testimony and trial process will be taught as well as Civil law and tort liability. Students will gain a general understanding of professionalism and ethics, law enforcement, types of crimes, traffic laws, motor vehicle stops, defensive tactics, crime scene investigation, evidence collection and forensics. Students will also learn about search and rescue, and prepare for 911 APCO Public Safety dispatch certification.

**6163 –CRIMINAL JUSTICE RELATED THEORY II (GR 11)**

**1 CREDIT**

Juniors will study civil laws and criminal law within the American legal system at the federal and state levels. Related Theory will focus on case law analysis and identifying the elements of criminal laws and civil law statutes.

**8164 – CRIMINAL JUSTICE III (GR 12)**

**5 CREDITS**

Seniors will engage in the skills of security, law enforcement, investigations, and the practice of law. Students will learn tactical communication skills and report writing skills. They will learn employment skills for any career as well as understand and be prepared to take a civil service test. Students will complete a senior project related to skills and knowledge gained through this Program. Students will also become First Aid/CPR/AED certified.

**6164 –CRIMINAL JUSTICE RELATED THEORY III (GR 12)**

**1 CREDIT**

Seniors will study strategies of crime prevention, physical security, cyber security, and the theories of Community Policing. Seniors will engage in the curriculum of a college level course, Introduction to Criminal Justice, and have an opportunity to gain college level credits.

**LEGAL AND PROTECTIVE SERVICES CAREER OPTIONS INCLUDE:**

- |                                      |                                     |
|--------------------------------------|-------------------------------------|
| First Responder/EMT                  | Criminal Law                        |
| Fire and Rescue                      | Crime Scene Investigation/Forensics |
| Defensive/Tactical training          | Physical Security                   |
| 911 Dispatch/Advanced Communications | Cyber Security                      |
| Law Enforcement                      | Legal Practice                      |

## **METAL FABRICATION & JOINING TECHNOLOGIES**

This Program trains students in the technologies of metal fabrication and welding. These are directly related to the processes of the metal products industries. The curriculum allows each student to develop a well-rounded background in several phases of welding and cutting.

Students in the Metals Technology Program may attain certification for the American Welding Society. The Certified Welder (CW) Program tests to procedures used in the structural steel welding.

### **8121 - METAL FABRICATION & JOINING TECHNOLOGIES PROGRAM I (GR 9)**

**3 CREDITS**

Students work with advanced equipment for punching, bending, rolling, and shearing metal as they learn the precise skills of fabricating metal. They will also be trained in the art of welding with oxyacetylene, arc, resistance (spot welding) as well as brazing.

Freshmen will name and know the use of all the tools commonly found in a sheet metal shop. They will learn to safely operate selected pieces of equipment found in the school metal fabrication Program. They will learn to fabricate objects using simple shop drawings, and will observe and carry out all safety principles regarding machine use, proper clothing, and good housekeeping. Additionally, the freshmen will learn safety, setting up and connecting welding equipment, and proper methods of manipulating the torch. They will perform common welding joints and welding positions, and how to do this type of welding with and without a welding rod will be covered. The basics of braze welding and cutting of steel along with basic arc welding and how to hold and maintain an arc will be studied. The freshmen will learn the basic operations and safety of hand tools plus some of the basic machines. They will be able to identify some of the basic metals, their thickness, and uses. They will learn the use of basic arc welding equipment and supplies and will start the basic theory for shielded metal arc welding.

### **6122 – METAL FABRICATION & JOINING TECHNOLOGIES RELATED THEORY II (GR 10)**

**1 CREDIT**

Sophomores will learn blueprint reading, drawing, layout and shop math. They will learn how to apply them to shop projects. Students will also learn to safely set up and operate all pieces of power machinery in our metal fabrication shop. Additionally, students will learn shielded metal arc welding, AC-DC operation along with electrode care, operating ranges, and power supplies. They will also learn basic mig welding operation using state-of-the art equipment.

### **8122 – METAL FABRICATION & JOINING TECHNOLOGIES PROGRAM II (GR 10)**

**5 CREDITS**

Sophomores will learn to operate safely all pieces of equipment found in the metal fabrication welding shop, make and read simple shop drawings, and be able to fabricate objects from them. The students will apply all safety principles regarding the use of machinery. Students will learn steel preparation and rod selection as well as arc welding in all positions or mild steel. They will learn the basics of pipe welding. The students will also learn the basics of gas metal arc welding (mig). Sophomores will learn blueprint reading, drawing, layout and shop math. They will learn how to apply them to shop projects. Students will also learn to safely set up and operate all pieces of power machinery in our metal fabrication shop. Additionally, students will learn shielded metal arc welding, AC-DC operation, along with electrode care, operating ranges, and power supplies. Students will also continue to work with a variety of sheet metal projects including layout and fabricating of basic duct work.

### **6123 – METAL FABRICATION & JOINING TECHNOLOGIES RELATED THEORY III (GR 11)**

**1 CREDIT**

Juniors will learn blueprint reading, weld symbols, and weld mathematics. Additionally, they will learn the theory of gas tungsten welding equipment and supplies along with its safe operation. They will learn the theory of current, power and electrodes for the metals to be welded. They will also learn about inert and shielding welding gasses, mig welding wires, and plasma arc cutting theory.

### **8123 – METAL FABRICATION & JOINING TECHNOLOGIES SHOP III (GR 11)**

**5 CREDITS**

Juniors will learn to operate safely pieces of equipment found in the metal fabrication shop. They will fabricate fittings for ductwork in air conditioning, heating, and exhaust systems. Additionally, the juniors will learn how to set up the welding machine for the different welding operations and how to weld light metals as well as heavy metals in all positions using different types of welding joints. The students will also learn the proper use of plasma arc cutting as well as the basics of gas tungsten arc welding. Juniors will learn blueprint reading, drawing, layout for heating, ventilating, and air conditioning, along with precision sheet metal mathematics. Additionally, juniors will learn the theory of gas tungsten welding equipment and supplies along with its safe operation. They will learn the theory of current, power, and electrodes for the metals to be welded. They will learn about inert and shielding welding gasses, mig welding wires, and plasma arc cutting theory.

#### **6124 – METAL FABRICATION & JOINING TECHNOLOGIES RELATED THEORY IV (GR 12) 1 CREDIT**

Seniors will learn advanced blueprint reading and drawing. They will learn the theory of layout work, including parallel line development, radial line development, triangulation, and shortcut methods of layout. They will also learn the applications of special non-ferrous welding. They will learn inspection and testing of weldments, heat treatments of metals, metal surfacing, and welder qualification.

#### **8124 – METAL FABRICATION & JOINING TECHNOLOGIES PROGRAM IV (GR 12) 5 CREDIT**

Seniors will learn to perform, with acceptable skill, all of the operations learned and reviewed in the previous three years. They will be able to operate safely all pieces of equipment found in the metal fabrication shop. Their skills will be limited only by the students' ability and willingness to indulge themselves into their work. Students will also be given Greater latitude to concentrate on that part of the trade that he/she best likes or has shown a Greater aptitude for. Additionally, seniors will learn safety and care of gas tungsten arc welding equipment as well as basic skills in the welding of aluminum, stainless steel and mild steel in the different positions using the different types of welding joints. Destructive and non-destructive testing will also be taught. Seniors will learn the applications of special non-ferrous welding. They will also learn inspection and testing of weldments, heat treatments of metals, metal surfacing, and welder qualification.

#### **METAL FABRICATION & JOINING TECHNOLOGIES CAREER OPTIONS INCLUDE:**

Apprentice (Sheet Metal)  
Machine Operator  
Welding Apprentice  
Forge man  
Riveter  
Air-Conditioning  
Apprentice Assembler

## **PLUMBING**

The shortage of skilled tradesmen is expected to increase significantly over the next few years. Shop time during sophomore and junior years cover the introduction to the trade and the basic skills needed to become a successful plumber. Senior year shop students have the opportunity to work on the Keefe Tech house building project or to go to work for a plumbing company on Co-op. All students will receive three years of Related Theory, math, and science. Students completing the three-year Program can receive up to 1700 hours (1 year) of work experience and up to 220 hours (Tier 1 and Tier 2) of related classroom hours towards their Massachusetts Journeyman's Plumbers License.

#### **8131 - PLUMBING PROGRAM I (GR 9) 3 CREDITS**

Freshmen will learn how to thread pipe. They will have a basic understanding of I.P.S. measurements and applications. Students will learn the proper use of pipe wrenches, pipe fittings, and lubricating oils. Students will learn to cut and ream copper tubing and to assemble the tubing using various procedures including flared, soldered and compression. Students will learn the proper use of torches. They will learn to set up a lead pot and to yarn, pour, and caulk a lead soil pipe joint. The students will also learn basic water and drain line sizing, laws and materials. Safety will be taught during each phase of the course. Students will begin studying Tier One topics and techniques.

**6132 – PLUMBING RELATED THEORY TIER ONE (GR 10)****1 CREDIT**

Sophomores will begin the year by learning the many different types of pipes and fittings involved with the proper assembly of drains and waste pipes such as cast iron, PVC, and copper. The student will be introduced to the many methods of venting a plumbing system. Blueprint reading and drawing will be introduced, and the student will also become proficient in sizing capacities and volumes of all sorts and sizes of piping, tanks, etc. The proper operation of several basic plumbing fixtures such as faucets, water closets, and water heaters will be reviewed extensively.

**8132 – PLUMBING PROGRAM II (GR 10)****5 CREDITS**

Sophomores will learn about types of valves, including gate, globe, and quick closing. Students will learn about special valves such as regulators and also about air chambers. Students will learn about water service mains and water meters. Some gas piping, gas appliances, and gas flues will be taught. Different uses for hangers such as resnor hook, clevis, strap, and van will be taught along with the anchors used to attach them. Safety with rigging and hoisting will be covered. Students will learn knots, chain fall, and come along procedures. Students will learn waste stack sizes, materials, and laws, along with branch line sizes, materials, and laws.

**6133 – PLUMBING RELATED THEORY TIER TWO A (GR 11)****1 CREDIT**

Juniors will learn air break and air gap indirect wastes, and storm drain and sewer drain regulations. Septic systems will be taught, and all units of the system will be covered. Students will learn plumbing vents, including: stack, continuous, individual, common, bow, yoke, battery, circuit, loop, wet, and crown.

**8133 – PLUMBING PROGRAM III (GR 11)****5 CREDITS**

Students will learn about floor drains and the different laws covering them. Bathtub and shower installations will be covered. Students will learn about different types of sewer ejectors. Different testing methods will be taught. Students will also learn duriron, glass pipe, and poly special waste systems. Students will learn about special waste traps including plaster, grease, acid, gasoline, and sand traps. Students will also participate in the Keefe Tech House Building Project and can become eligible for Co-op as of January).

**6134 – PLUMBING RELATED THEORY TIER TWO B (GR 12)****1 CREDIT**

Seniors will continue with blueprint reading and will, by this time, be able to design and rough the plumbing system for residences and commercial installations. The finer points of plumbing design will be covered such as different manufacturers and styles. The student will learn many principles of business such as estimating jobs, labor costs, pricing material, and figuring overhead costs.

**8134 – PLUMBING PROGRAM IV (GR 12)****5 CREDITS**

Seniors will learn about repairing fixtures in the plumbing system. Special methods and materials to detect leaks will be taught. Students will learn to install and repair different valves including ballcocks, faucet stem, flushometer, gate, globe, mixing, hose bibb, silcock, wall hydrants, and trap seal valves.

Students will learn about trap fixtures and pipe stoppages and how to correct and avoid them. Students will learn about fixtures including wall-hung water closets, floor mount water closets, wall-hung lavatories, vanity lavatories, kitchen sinks, wall-hung urinals, pedestal urinals and bidets. Students will also learn special hospital and commercial fixtures. In addition, students will learn about water heaters fueled by gas, oil, electric and solar. Students will also learn about indirect, direct, and instantaneous heaters. Students will also participate in the Keefe Regional Technical School House Building Project and can become eligible for Co-op).

**PLUMBING CAREER OPTIONS INCLUDE:**

Licensed Plumber – Apprentice, Journeyman, and Master  
Oil Burner Technician  
Service Plumber

Residential or Commercial Plumber  
Solar Thermal System Installer  
Pipefitter/Welder

## PROGRAMMING & WEB DEVELOPMENT

As society becomes more information oriented, computers, technology, and the Internet are an integral part of most jobs. Our students are trained using a state-of-the-art 20-workstation lab running a Windows XP environment. Students will learn how to manage data electronically with Microsoft Office Suite of applications. Programming concepts are taught using Visual Studio, Net Microsoft Access, HTML, Java and JavaScript. Web pages are designed and developed with FrontPage, Dreamweaver and XHTML. Upon graduation, students are prepared for an entry-level position in Computer Programming and Web page development or to further their education by enrolling in a post-secondary school.

### 8151 - PROGRAMMING & WEB DEVELOPMENT PROGRAM (GR 9)

3 CREDITS

This course is designed to introduce students to computer concepts and applications and will focus on the development of web pages. Students will learn basic HTML and Cascading Style Sheets (CSS) to produce a variety of web pages, including interactive pages that use JavaScript. Students will be introduced to computer science terminology and concepts, and will apply some of these through game development using the “GameMaker” game development Program. In addition, students will be introduced to the world of robotics via Lego Mindstorm Robots.

### 8152 - PROGRAMMING & WEB DEVELOPMENT PROGRAM II (GR 10)

5 CREDITS

This course is designed to teach students the fundamentals of Programming, using both Web and Windows application environments. Developing analytical and logical problem-solving techniques will be a key part of learning to the program. Programming websites using HTML, CSS and JavaScript, begin in grade 9, will be expanded on. Application development will use the Visual Studio Integrated Development Environment (IDE) and the C# Programming language. Students will become conversant in data types and basic data structures, and will learn fundamental programming constructs, including string manipulation, mathematical processing, looping and decision-making. Students will be introduced to data storage paradigms. Students will expand their understanding of “internet of things” via their use of Raspberry Pi and Arduino computers.

### 6152 - PROGRAMMING & WEB DEVELOPMENT RELATED THEORY II (GR 10)

1 CREDIT

Students will learn the basics of the Software Development Life Cycle (SDLC). They will begin to understand the importance of Analysing, Designing, and Planning Software prior to building it. Agile software development principle will be introduced forcing students to fully prepare a project at the beginning of their development process. In addition, students will understand the importance of presenting and documenting their work.

### 8153 - PROGRAMMING & WEB DEVELOPMENT PROGRAM III (GR 11)

5 CREDITS

During this year, students will dive deeper into application development using Visual Studio and C#. They will be introduced to more advanced Programming concepts, including complex looping structures, multiple forms, menus, graphics, linked lists, and multi-dimensional arrays. They will delve into modular programming, functional abstraction, and programming efficiency. They will be introduced to object-oriented programming using Java. Relational databases and the use of SQL to store and retrieve information will be covered, and students will integrate SQL and the use of relational data into application development. Students will also dive deeper into web programming using HTML and JavaScript. They will add AJAX and Python, and will learn to write web applications that communicate with relational databases. Students will be introduced to *responsive web page design*. A deep appreciation of the importance of *design* on many levels (technical, functional and visual) will be emphasized. Robotics will continue with the building and programming of Vex robots.

### 6153 - PROGRAMMING & WEB DEVELOPMENT RELATED THEORY III (GR 11)

1 CREDIT

Students become more adept at Agile with year long (or several smaller), student selected projects. Projects will be designed, scoped, developed, and delivered following SDLC principles. Students will be expected to analyze the projects at set intervals to understand original deliverable vs what is being completed.

#### **8154 - PROGRAMMING & WEB DEVELOPMENT PROGRAM IV (GR 12)**

**5 CREDITS**

Students will delve deeper into object-oriented Programming and be introduced to procedural programming. They will also be introduced to some more complex problems in computer science, including binary trees, recursion, artificial intelligence, various sorting techniques and compression. Students will be introduced to the Linux Operating System as well as the C programming language. They will study cyber-security, both on a personal level to protect themselves while using the internet and on a programming level, to protect the software they create. The study of robotics will expand to include automation, as that may be used in a manufacturing environment.

#### **6154 - PROGRAMMING & WEB DEVELOPMENT RELATED THEORY IV (GR 12)**

**1 CREDIT**

Students will put what they have learned together into a *capstone* project of significant scope. The *capstone* project will include front-end, middle tier, and database components. Students will be required to document and present their projects. Students may (optionally) choose to create a phone or tablet App as part of their project.

#### **Programming & Web Development Career Options Include:**

##### **ENTRY LEVEL CAREER OPTIONS INCLUDE:**

Data Entry  
Computer Operator  
Technical Support (including phone support, help desk)  
Computer Maintenance/Repair Technician  
Geek Squad  
Entry Level Sales  
Software Tester

##### **TECHNICAL CAREER OPTIONS (SOME FURTHER TRAINING REQUIRED) INCLUDE:**

Software Quality Assurance  
Software Test Engineer  
Graphic Designer,  
Web Developer,  
Web Master  
Technical Sales  
Pre-Sales Support

## **COOPERATIVE EDUCATION**

The Cooperative Education Program provides an opportunity for deserving students to participate in paid employment in their career/technical areas of study during their shop week for area employers. They receive fair and competitive wages and valuable work experience. The employers are expected to grade students based on criteria provided by the school. These selected employers become partners in the educational process by offering expanded learning opportunities in the workplace.

#### **ELIGIBILITY FOR SENIORS:**

Co-op eligibility, at the beginning of the senior year, depends on the following junior year criteria:

- A final grade of C- or better in each academic subject.
- A final grade of B- or better in junior year shop and related.
- MCAS competency determination based on scores in all required areas.
- Obtained OSHA 10-hour safety card.
- Met school's term or yearly attendance requirements.
- Instructor recommendation.

\*Students who are not eligible for cooperative placement at the beginning of grade 12 may become eligible based on their report card at the end of any term during the senior year.

**Summer school grade may not be used for co-op eligibility.**

**ELIGIBILITY FOR TERM III JUNIORS:**

- An average grade of C- or better in each academic subject.
- An average grade of B- or better in junior year shop and related.  
**\*Based on the first two terms in grade 11**
- MCAS competency determination based on scores in all required areas.
- Obtained OSHA 10-hour safety card.
- Instructor recommendation.
- Fewer than (10) absences through the end of Term II in the junior year (3 tardies equals an absence).
- Juniors participating in co-op must continue to meet the grade requirements based on year end grades to continue on co-op placement.

**SUMMER COOPERATIVE PLACEMENT FOR JUNIORS:**

Summer cooperative placement (new contract) for juniors will commence the last day of their junior year and will end the first day of school of their senior year as regulated by the Department of Elementary and Secondary Education.

**WAIVERS:**

**Students may appeal to the Principal for a waiver for extenuating circumstance on an individual basis.**

**TERMINATION OF COOPERATIVE PLACEMENT:**

**A student will be removed or terminated from cooperative placement because of ineligibility due to poor attendance, failing grades, suspension, or other disciplinary infractions. Any exception to the above will be decided by the Principal and the Cooperative Placement coordinator.**

## **STUDENT ACTIVITIES**

**THIS IS A SAMPLING OF THE STUDENT ACTIVITIES:**

- American Culinary Federation (ACF)
- Art Club
- Audio-Visual Assistant
- Business Professionals of America (BPA)
- Chess Club
- Chorus
- Dance Club
- Drama Club
- Future Farmers of America (FFA)
- Gay/Lesbian Alliance (GSA)
- Intramural Sports Activities
- Leadership Academy
- National Art Honor Society
- National Honor Society
- South Middlesex Scholars Program
- Student Advisory Committee (SAC)
- Student Ambassadors
- Student Council and Class Officers
- Students Against Destructive Decisions (SADD)
- SkillsUSA
- Yearbook







**ADDENDUM A**  
**SOUTH MIDDLESEX REGIONAL VOCATIONAL**  
**TECHNICAL SCHOOL DISTRICT**  
**CENTRAL OFFICE ADMINISTRATION**

Jonathan Evans - Superintendent/Director  
Shannon Snow, Ed.D – Principal  
Dolores Sharek – Director of Finance & Business Operations

Domenic Jannetti – Director of Satellite Vocational Programs & Facilities  
William Hurley - Treasurer

## **SCHOOL COMMITTEE**

### **ASHLAND**

Edward Burman  
William Gaine

### **FRAMINGHAM**

Michele Burns  
Linda Fobes  
Rick Gallagher  
Sara Hamerla  
A.J. Mulvey  
Maria Martinez  
Bill Phillips  
Brandon Ward

### **HOLLISTON**

Sarah Commerford  
Barry Sims

### **HOPKINTON**

Ruth Knowles  
Jaime Shepard

### **NATICK**

Edward Carr  
Henry Haughland

# ADDENDUM B

## MASSACHUSETTS COMPREHENSIVE ASSESSMENT SYSTEM (MCAS)

In Massachusetts, public school students must meet both local and state requirements in order to earn a high school diploma. This page addresses state requirements. For local requirements, please contact your high school.

The Massachusetts Education Reform Law of 1993, [G.L. c. 69, § 1D](#), requires that all students meet the [Competency Determination \(CD\) standard](#), which is usually done by earning a passing score on MCAS. This requirement is for all students educated at public expense, including those at public schools, at educational collaboratives and those in approved and unapproved private special education schools.

### A. Competency Determination Requirements

Students must earn a passing score on the grade 10 MCAS tests in English Language Arts (ELA) and Mathematics, and one of the high school Science and Technology/Engineering (STE) tests to meet their CD requirement.

Students who do not pass the MCAS tests in grade 10 may take retests according to these [participation guidelines](#) in grades 11 and 12 and beyond. Some students may also be able to participate in an [appeal process](#) as described below.

The tables below describe the CD requirements for students in the classes of 2021–2031 and beyond. Please note that some requirements for the classes of 2020–23 were modified due to disruptions during the early part of the COVID-19 pandemic. Also note that, as described in the [Competency Determination regulations](#), students are assigned to an original graduating class based on when they first enter grades 9–12 in a Massachusetts public school system. That class (e.g., 2023 for a student who entered 9th grade in August 2019) never changes in terms of CD requirements.

#### Classes of 2024 and 2025

Classes of 2024 and 2025*		
Subject	Option 1	Option 2
ELA	Earn a score of 472 or higher	Earn a score of 455–471 and Fulfill the requirements of an <a href="#">Educational Proficiency Plan</a>

Math	Earn a score of 486 or higher	Earn a score of 469–485 and Fulfill the requirements of an <a href="#">Educational Proficiency Plan</a>
STE	Earn a score of 220 or higher on a legacy STE test, or the interim passing standard for next-generation Biology (467) or Introductory Physics (470)	Not applicable (only one option for STE)

\*A note on the passing standard:

Please note that the passing standards for the classes of 2021–2025 are set at a level of achievement that has been established as equivalent to the standard on the legacy MCAS tests. Some students in the classes of 2021–2025 may score in the Not Meeting Expectations level, but their scaled score is high enough to earn the CD in that subject. Please see the [September 22, 2022 edition of the Student Assessment Update](#) for a visual representation of this

## 2. Educational Proficiency Plans (EPPs)

An [EPP](#) must be developed for students meeting certain scores on the grade 10 MCAS tests in ELA or Math (see the tables in #1 above for the scores for different classes). (STE is not part of the EPP requirement.) The EPP is not required for students in the classes of 2020–2022, who are eligible for the modified CD.

## 3. MCAS Appeals

In addition to the standard MCAS tests and retests, students may earn a Competency Determination (CD) through the [MCAS Performance Appeals process](#). When granted, a performance appeal is not a waiver of CD requirements, but a different means of earning the CD.

If school and district officials believe that there is compelling evidence that a student has demonstrated the attainment of the state's learning standards through coursework but has been unable to meet the minimum score requirements on MCAS, the superintendent may submit a performance appeal to the Commissioner on behalf of the student.

For a student with a disability, the superintendent must file an appeal on behalf of an eligible student with a disability if the parent (or the student who is age 18 or older) requests it. The superintendent may initiate on his or her own an appeal for an eligible student with a disability with the consent of the parent (or the student who is age 18 or older).

## 4. Competency Determination Requirements for Students in Active Military Families

With the enactment of An Act Relative to Veterans' Access, Livelihood, Opportunity, and Resources, also known as the VALOR Act, Massachusetts joined the Interstate Compact on Educational Opportunity for Military Children. We are committed to facilitating the on-time graduation of high school students in military families by providing alternatives to allow these students to earn a high school Competency Determination (CD) in English language arts, mathematics, and science and technology/engineering.

View the [CD requirements for students in active military families](#) .

## B. Graduation Requirements for Students Receiving Special Education Services

Under state law, all students, including students with disabilities, seeking to earn a high school diploma must meet the Competency Determination (CD) standard, as well as local graduation requirements.

Under the federal Individuals with Disabilities Education Act (IDEA), even if a student with an IEP has met state and local requirements for graduation, a district may not properly graduate the student if the district did not provide a "free appropriate public education" (FAPE) to that student.

For additional information on graduation requirements for students with IEPs, please see [Administrative Advisory SPED 2018-2: Secondary Transition Services and Graduation with a High School Diploma](#).

Students with IEPs who do not meet the state's CD standard will remain eligible to receive educational services until they meet all graduation requirements or turn 22 years of age.

### **Certificate of Attainment**

Students who have not earned a CD in the required subjects may be eligible to receive a [Certificate of Attainment](#) if they have met all local (but not state) graduation requirements.

### **Scholarships Related to MCAS**

Two scholarships are available based in part on student performance on the high school MCAS tests in English Language Arts, Mathematics, and Science and Technology/Engineering:

- [John and Abigail Adams Scholarship](#)
- [Stanley Z. Koplik Certificate of Mastery Award](#)

### **Other High School Requirements and Guidelines**

Massachusetts state law requires the instruction of American history and civics ([G.L. c. 71, § 2](#)) and physical education ([G.L. c. 71, § 3](#)).

The [Massachusetts High School Program of Studies \(MassCore\)](#) is intended to help high school graduates arrive at college or the workplace well prepared and to reduce the number of students taking remedial courses in college. The Department recommends that high school students complete the MassCore program of studies, which is a comprehensive set of subject area courses and units as well as other learning opportunities, before graduating from high school.

The MassCore program includes:

- four years of English;
- four years of mathematics;
- three years of lab-based science;
- three years of history;
- two years of the same foreign language;
- one year of an arts program; and
- five additional "core" courses such as business education, health, and/or technology.

MassCore is just a start; students are also encouraged to pursue additional learning opportunities, including Advanced Placement classes, dual enrollment, a senior project, online courses for high school or college credit, and service or work-based learning.

Last Updated: January 30, 2024

# ADDENDUM C

## COLLEGE PLANNING

The Keefe Technical School Counseling Department is committed to helping students with their plans for post-secondary education. If a student is planning on applying to a 2- or 4-year college or university, they should express this to their counselor early on in their high school career and work with their counselor to take the appropriate courses and necessary testing in order to be eligible for admission.

The School Counseling Department strongly recommends that students planning to attend college take the PSAT in October of their junior year and the SAT and/or ACT Test in May or June of their junior year. During the senior year, students planning to apply to a 4-year college should take the SAT/ACT test in October, November or December.

### PREPARATION FOR POST-SECONDARY EDUCATION

To prepare for admission to a college or other institute of higher learning, the student is advised (1) to make proper choices of subjects and (2) to maintain a sufficiently high grade or achievement in his/her major subjects. Other matters of consideration are personal interview, personal characteristics, and health standards.

School achievement and test scores are the best predictors of success in college. The colleges have become highly selective, and each year admission is becoming more competitive. A high school diploma alone does not guarantee admission to most colleges; the decision to admit a student rests with the college.

Many colleges give preferences to the students who have earned at least sixteen units. Students are also encouraged to consider electing courses in the areas of art, music, and occupational education. In addition to the sixteen academic units, it is imperative that students consult the college catalogs and the counselors for up-to-date information about admission requirements.

### CANDIDATES FOR COLLEGE ADMISSION

#### General Information

1. Students must qualify for admission to college by selecting a Program consistent with the admission requirement of most colleges
2. An applicant for college is judged on his/her achievement, class rank, results of entrance examinations, interview, and recommendations
3. The candidate should follow these procedures:
  - a. Make a firm decision that college is his/her goal
  - b. Review the literature of specific collegiate institutions to ascertain what the entrance requirements are and decide which schools he/she would like to attend.
4. Discuss plans with his/her parents and counselor
5. Visit the collegiate institutions to which he/she plans to apply as early as possible following the junior year
6. Arrange to take the necessary entrance examination. In general, these would be the SAT Reasoning Test, SAT Subject Test, and PSAT tests of the College Board and/or the ACT. Information and applications are available from counselors.
7. Secure applications from the colleges early in the senior year and complete such applications with care
8. Request that transcripts be forwarded by the counselor
9. Furnish any references which may be required
10. Complete the required Financial Aid forms (FAFSA, CSS Profile) if he/she plans to apply for financial aid. Information is available in the School Counseling Office. The student should also check all financial aid sources with his/her counselor

### COURSE REQUIREMENTS: 4-YEAR COLLEGES AND UNIVERSITIES

Students planning to attend a 4-year college or university or a 2-year Community College (transfer Program) should elect the most demanding Program for grades 9-12.

The requirements for acceptances to most colleges are a minimum of 16 units including: English, 4 units; College Math, 3 units; Social Studies 2 units; and Science, 3 units.

Many colleges require two years of a foreign language only for the Liberal Arts Program. To be certain of the language requirements, a student should check the college catalogue or see his/her counselor. State colleges or universities of Massachusetts require two years of a foreign language. Students from Career/Technical High Schools are eligible to have the foreign language requirement waived.

## 2-YEAR COLLEGES

### TRANSFER

Some 2-year colleges offer an Associate in Arts or Associate in Science Program. If the student completes his/her 2-year college Program with sufficiently high grades, he/she may transfer to a 4-year college for the final two years.

### CAREER/TECHNICAL PROGRAMS

The admission requirements for career Programs in 2-year or Community Colleges are not as strict as those for academic Programs. Usually a high school diploma is required. Successful completion of a career Program does not usually meet the requirements for transfer to a major 4-year college or university. It does, however, lead to a certificate and is designed to prepare students for immediate employment in a specific occupation.

## MASSACHUSETTS STATE UNIVERSITY SYSTEM AND UMASS

### MINIMUM ADMISSIONS REQUIREMENTS

The admissions standards for the state universities and UMass emphasize a strong academic high school background so that students enter college ready to learn. These standards represent minimum requirements; meeting them does not guarantee admission, since campus officials consider a *wide* range of factors in admissions decisions. Students shall have fulfilled all requirements for the high school diploma or its equivalent upon enrollment. *It is important to note that admissions standards for the state's community colleges differ. Community colleges may admit any high school Graduate or GED recipient.*

#### Freshman Applicants

The admissions standards for freshmen applicants have two main parts:

1. 16 required academic courses,
  2. A minimum required grade point average (GPA) earned in college preparatory courses completed at the time of application.
- Applicants must also submit an SAT or ACT score.

#### *Academic Course Requirement:*

Sixteen\* college preparatory courses distributed as follows are required: (A course is equivalent to one full school year of study. Courses count toward the distribution only if passed)

\*Effective with the college freshman class entering fall 2016, the number of required courses will increase to 17 with the additional year of math.

#### *Minimum Required grade Point Average (GPA):*

The GPA must be achieved based on all college preparatory courses completed at the time of application and should be weighted for accelerated (Honors or Advanced Placement) courses. The required minimum weighted high school GPA is 3.0 for the four-year public campuses.

State University GPA	University of Massachusetts GPA
3.00	3.00

### *SAT Scores*

Applicants who meet the GPA requirement do not have to use the sliding scale for admission, but still must submit SAT or ACT test scores for consideration if they are applying to a state university or UMass within three years of high school graduation.

*Sliding Scale (used when GPA is lower than the minimum required GPA)*

If an applicant's GPA falls below the required minimum, a sliding scale will apply. *This scale should be used only when an applicant's GPA falls below the required 3.0 minimum for admission to the state universities or UMass.*

Scores on the new writing section of the SAT will not affect the sliding scale for freshman applicants to the Massachusetts state universities and to the University of Massachusetts at this time. The sliding scale, used in making admissions decisions for students with high school grade point averages falling below the required minimum, will continue to be based upon the combined critical reading (verbal) and math sections of the SAT.

### **Sliding Scale for Freshman Applicants to UMASS**

Weighted High School GPA	Combined SAT-I V&M Must Equal or Exceed (ACT Equivalent in Italics)
2.51- 2.99	950 (20)
2.41- 2.50	990 (21)
2.31- 2.40	1030 (22)
2.21- 2.30	1070 (23)
2.11- 2.20	1110 (24)
2.00- 2.10	1150 (25)

**NO APPLICANT WITH A HIGH SCHOOL GPA BELOW 2.00 MAY BE ADMITTED TO  
A STATE UNIVERSITY OR UNIVERSITY OF MASSACHUSETTS CAMPUS**

### **Transfer Applicants**

Transfer students must meet one of the following criteria:

1. 12-23 transferable college credits and a minimum 2.5 college GPA;
2. Up to 23 transferable college credits, a minimum 2.0 college GPA, and a high school transcript that meets the admission standards for freshman applicants; or
3. 24 or more transferable credits and a minimum 2.0 college GPA.

For the purpose of the transfer GPA calculation, transferable credits are to be calculated based on non-remedial credits earned from the most recently attended higher education institution. Students who have earned college credits while enrolled in high school are not transfer students and must meet the admissions standards for freshman applicants.

#### *Determining course credit for transfer*

College credits earned need only be transferable to the accepting institution in order to be counted, and not necessarily transferable to a specific degree Program. Remedial coursework is not transferable. For the purpose of the transferable GPA calculation, transferable credits are to be calculated based on non-remedial credits earned at the most recently attended higher education institution.

#### *MassTransfer Policy*

**MassTransfer** provides any student in the Massachusetts public higher education system the intermediate goal of completing a portable general education transfer block which satisfies general education requirements across institutions.

**MassTransfer** also provides community college students who complete designated associate degrees with the benefits of the full transfer and applicability of credit, guaranteed admission, and a tuition discount (each benefit based on the student's final grade point average) to linked baccalaureate Programs.

### *Non-Traditional Applicants*

Students applying for admission more than three years after high school graduation, or who have completed the GED and whose high school class graduated three or more years prior to applying to college, must show their ability to succeed in college based upon their high school and/or college transcripts.

Some campuses may consider standardized test scores and other factors as part of the admissions process for non-traditional applicants.

Students who drop out of high school, earn a GED, and apply to college within three years of when their high school class graduated, are subject to the same admission standards as students applying within three years of graduation from high school.

## **EXCEPTION ALLOWANCES**

### **English as a Second Language (ESL) Applicants**

English as a Second Language (ESL) applicants must complete the 16 required college preparatory courses with two exceptions:

1. ESL applicants may substitute up to two college preparatory electives for the two required foreign language courses and,
2. ESL applicants may substitute up to two years of college preparatory ESL English courses for college preparatory English courses.

### **Learning Disabled Applicants**

Applicants with professionally diagnosed and documented learning disabilities (documentation must include diagnostic test results) are exempt from taking standardized tests for admission to any public institution of higher education in the Commonwealth. Such students, however, must complete 16\*\* required academic courses with a minimum required GPA of 3.00 or present other evidence of the potential for academic success.

\*\*An applicant may substitute two college preparatory electives for the two required foreign language courses only if the applicant has on file with the high school results of a psycho-educational evaluation completed within the past three years that provides a specific diagnosis of a learning disability and an inability to succeed in a foreign language.

*Eligibility for admission is not an entitlement of admission for any applicant, including learning disabled students.*

This policy frames minimum standards for admission to Massachusetts state universities and UMass. Institutions are free to set higher standards and/or to impose additional requirements. In any case, meeting minimum standards for admissibility does not guarantee admission for any applicant. The final decision on accepting an applicant rests with the individual campus.

### **Vocational-Technical Student Applicants**

Vocational-technical students must complete 16 college preparatory courses, distributed in the same manner and with the same minimum grade point averages required of other high school graduates, with the following exceptions:

1. Two vocational-technical courses may be used to fulfill the two required electives.

2. Vocational-technical high school graduates who do not complete the two required college preparatory foreign language courses must complete an additional elective college preparatory course, for a total of three such courses, and satisfy one of the following options:
  - Complete at least one Carnegie unit of foreign language;
  - Complete a fourth Carnegie unit of mathematics or science, which need not be a laboratory course; or
  - Complete one Carnegie unit of computer science.

*Note: A Carnegie unit represents a full academic year of study or its equivalent in a specific subject.*

This requirement will remain in effect until the Department of Education (DOE) implements its requirements regarding foreign language study for vocational-technical students. At that time, vocational-technical applicants for admission to UMass and the state universities will be required to meet DOE requirements for foreign language study.

## **SUGGESTED COURSES FOR COLLEGES** **(Most cases: 1 credit = 1 year of study)**

Here are a few typical four-year patterns which illustrate the way in which you should plan your Program. Be sure to check the requirements for entrance to the colleges or schools in which you are interested. Investigate the qualifications for the occupational field you have chosen.

1. If you are planning to go to a Liberal Arts College, State College or University:
  - 4 Years of English
  - 4 Years of Mathematics
  - 2 or more Years of a Foreign Language (Waived for Career/Technical Students)
  - 3 Years of Science (including three lab courses)
  - 3 or more Years of Social Studies (to include US History and World History)
2. If you are planning to enter the Fine Arts or Practical Arts fields, in addition to the required subjects, consider electing as many courses as possible in your field of specialization. Keep in mind your required subjects as well as those subjects that may be requested by the college, school, or vocation of your choice.