



# 2012-2013 Program of Studies

## Blackstone Valley Regional Vocational Technical High School



### Mission Statement

At Valley Tech we create a positive learning community that prepares students for personal and professional success in an internationally competitive society through a fusion of rigorous vocational, technical, and academic skills.

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## **FOREWARD**

This Program of Studies is intended to provide students and parents with a general overview of the courses offered at Blackstone Valley Regional Vocational Technical High School and should be helpful in selecting your program of studies for the coming year. Blackstone Valley Tech recognizes that each student is unique and possesses specific strengths, needs, and learning styles. The courses offered at Blackstone Valley Tech provide all students the opportunity to develop their capabilities in a variety of content areas and at the appropriate and challenging levels of learning.

All courses listed in this catalog are intended to be flexible, adaptable, and responsible in terms of student needs and represent our current efforts to align with the Massachusetts Curriculum Frameworks and the MassCore course of study.

Blackstone Valley Tech staff members are highly qualified in their specific content areas and make practical applications of all academic and technical subjects in order for students to learn the concepts required for success in their skill training or occupation. We are always committed to providing individual assistance necessary to ensure student success.

### **EQUAL OPPORTUNITY**

*Blackstone Valley Regional Vocational Technical High School welcomes and is open to all students and offers equal opportunities in all approved programs and courses of study without regard to race, color, sex, sexual orientation, religion, national origin, disability or homelessness status.*

Por favor, se você precisar deste documento traduzido para português ligue para Viviana Roy, no telefone (508) 529-7758 ext. 3010.

Por favor, si usted necesitar este documento traduzco para español llame Viviana Roy, en el numero (508) 529-7758 ext. 3010.

<b>Administration</b>	
<b>Dr. Michael F. Fitzpatrick</b> .....	<b>Superintendent-Director</b>
<b>Christopher J. Cummings</b> .....	<b>Assistant Superintendent-Director/Principal</b>
<b>Anthony E. Steele II</b> .....	<b>Director of Curriculum and Support Services</b>
<b>Thomas Belland</b> .....	<b>Vocational Curriculum Coordinator</b>
<b>James Brochu</b> .....	<b>Director of Construction/Facilities</b>
<b>Elizabeth Hennessy</b> .....	<b>Director of Guidance</b>
<b>Arthur Jackman</b> .....	<b>Director of Technology</b>
<b>Kurtis Johnson</b> .....	<b>Director of Business Operations</b>
<b>Patricia M. O'Connell</b> ....	<b>Coordinator of School Discipline &amp; Community Outreach Services</b>
<b>Rebecca Swasey</b> .....	<b>Academic Curriculum Coordinator</b>
<b>Yvette Whitesell</b> .....	<b>Director of Special Education</b>

## *Mission Statement*

**At Valley Tech we create a positive learning community that prepares students for personal and professional success in an internationally competitive society through a fusion of rigorous vocational, technical, and academic skills.**

## *Philosophy*

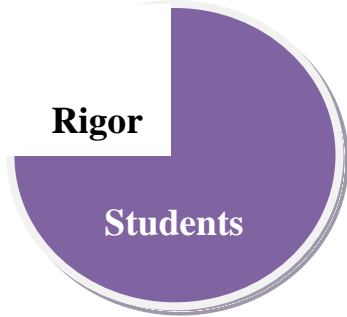
**Education is the process of developing an individual's potential. To realize this goal, we create a powerful social network of supportive relationships that deliver a rigorous and relevant education. Over time, our students experience an increase in autonomy, a sense of belonging and commitment, along with opportunities to display competence in the performance of relevant work. All staff are committed to promoting life-long learning and career development in a safe environment.**

**Individualized instruction recognizes diverse learning styles and incorporates the use of state-of-the-art technology so that each student can develop his/her evolving talents to the fullest. Challenging academic/vocational/technical programming is complemented by a comprehensive competency-based career counseling program and a wide array of extracurricular activities. As a publicly supported institution, our approach fosters an atmosphere of tolerance, promoting equality and an appreciation for diversity. Additionally, we strive to develop in our students an understanding of and a responsible commitment to the principles of freedom, respect, social justice, personal worth, economic independence, and concern for the environment.**



**Education**

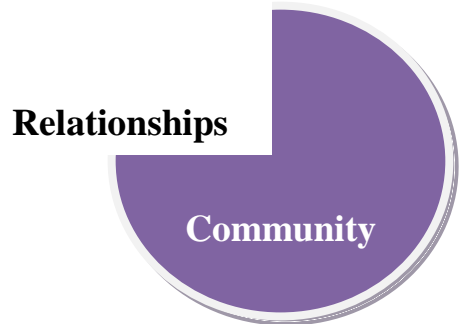
To fuse rigorous academic, vocational and career technical skills with enhanced proficiencies in communication, critical thinking, collaboration, and literacy in media, information, and technology, empowering students to be resilient participants in a fluid global economy



To nurture qualities of character, including self esteem, introspection, accountability, leadership, and creativity as students become credentialed, contributing members of an evolving society



To foster among staff a culture that embraces adaptability, reflection, mutual support, and ongoing professional development in the interest of continuous improvement



To promote a safe, respectful community of shared values acknowledging the cultural diversity of our thirteen towns while forging a partnership with our civic and business communities

<b>Guidance Department Directory</b>	
<b>(508) 529-7758 x3020</b>	
<b>Counselor</b>	<b>Ext.</b>
<b>Ms. Bartelloni-Kedski</b>	<b>3012</b>
<b>Ms. Downs</b>	<b>3118</b>
<b>Ms. Granger</b>	<b>3138</b>
<b>Ms. Martin</b>	<b>3024</b>
<b>Ms. Milewski</b>	<b>3060</b>

***School Based Health Center***

Blackstone Valley Tech School Based Health Center (SBHC) provides on-site medical, nutrition, and mental health case management services. The Health Center operates in conjunction with Milford Regional Medical Center. The Health Center offers convenient, teen friendly services in a confidential manner and is operational while school is in session.

Our goal is to treat and to prevent health and social problems that often interfere with academic success. Students can use the Health Center to receive preventative health care or treatment for acute/minor illnesses, psychological and emotional support. We are also available for health related questions/concerns or support services if needed. The Health Center will not replace your child’s primary care provider.

The Health Center is staffed by a Nurse Practitioner, a Nutritionist, and an Office Coordinator.

<b>SCHOOL BASED HEALTH CENTER DIRECTORY</b>		
<b>(508) 529-7758 x3702</b>		
<b>Dawn Cater</b>	<b>Nurse Practitioner</b>	<b>x3711</b>
<b>Martha Pellegrino</b>	<b>Nutritionist</b>	<b>x3710</b>
<b>Michele Dafonte</b>	<b>Office Coordinator</b>	<b>x3702</b>

## ***Academic Course Requirements***

Every student at Blackstone Valley Tech is required to enroll in four years of English, Mathematics, Science, Social Studies, Enrichments, and Electives. The Enrichment courses consist of Employability, Management & Entrepreneurship, Technical Competencies, and Seminar. Elective courses are intended to supplement a student's core academic and technical studies and should be in concert with the student's four-year and post-secondary plan. Please note that some courses may not run during a given school year due to student interest and/or teacher availability. Please refer to *Appendix A* which contains Massachusetts State College admissions requirements and may also serve as a helpful guideline for course selection and post-secondary planning.

## ***Career Vocational Technical Education***

The curriculum for Blackstone Valley Tech approved Chapter 74 Career Vocational Technical Education (CVTE) programs, is developed, aligned and revised based on the current Massachusetts CVTE Frameworks. Vocational instruction is designed utilizing the Massachusetts Framework strands, competencies and tasks, as well as local, state, and national licensing and certification requirements. Valuable industry input is derived from the Program Advisory Committees, the General Advisory Committee and subject matter experts in each area of instruction.

## ***Portfolio Requirements***

The Student Portfolio Program at Blackstone Valley Regional Vocational Technical High School is an "Across-the-Curriculum" initiative that provides the opportunity, instruction, and provisions for every student to create a portfolio that demonstrates compelling evidence of the vocational, academic, and employability skills acquired throughout the high school career. Every student in grades 9 through 12 is required to submit a portfolio at the end of each year to be used as part of the evaluation of the student's annual performance, and promotion/graduation status, as well as employment and/or post secondary education readiness. The Student Portfolio Handbook, along with detailed templates and instructions, are available to students, staff, and parents on-line at <http://www.valleytech.k12.ma.us>.

## ***Grade Point Average and Class Rank Calculation***

Grade point averages (GPA) and class rank are important to students seeking scholarships, financial assistance, and other post-secondary endeavors. GPA and class rank are calculated using a system of levels and credits. Each academic and elective course is assigned the appropriate level based on the rigor of the curriculum and performance expectations; generally, AP courses are rated at level one, Honors courses are rated at level two, mainstream courses are rated at level three, and courses with modified curriculum and/or performance expectations are rated at level four. For the purpose of calculating GPA only, a level one rating elevates a grade average by twenty points, level two ratings elevate a grade average by ten points, level three ratings elevate a grade average by five points and level four ratings calculate grades at face value. It is important to note that levels do not affect the grade published on a student's report card—levels provide a means for accurately calculating class rank for a diverse student population. Levels may also be utilized to adjust for an individual with significant modifications to his/her course expectations. Multiplying a student's adjusted class averages by the corresponding credit value, and then dividing by the total number of attempted credits derives a student's GPA and class rank.

## ***Superintendent-Director's Commendation List Criteria***

Commendation List students are selected three (3) times per year, at the end of each trimester, based on the following criteria:

1. A student must maintain a grade point average of 80% or above (no incompletes) in technical, related and all academic courses.
2. A student must maintain an effort and conduct grade average of 2 or better in all technical, related, and academic courses.
3. A student may not be absent more than six (6) days during the trimester. Consideration will be given to students who exceed six (6) days of absence due to prolonged illness when verified by a physician's note.
4. A student may receive no more than three (3) aftersessions and zero (0) suspensions during the trimester.

## *Minimum Credit and Portfolio Requirements for Promotion / Graduation*

Under the provision of the Massachusetts Department of Education and Blackstone Valley Vocational Regional School District, a full high school diploma may be earned at BVT. Blackstone Valley Tech is accredited by the New England Association of Schools and Colleges.

To earn a high school diploma a student must fulfill the following minimum requirements:

<u>All</u> students <u>must</u> enroll in Math, English, Science, History and Related courses each year.			
As a minimum requirement all students <u>must pass</u> the courses listed to the right by earning a final average of 60 or greater.	<ul style="list-style-type: none"> <li>• 4 years of Vocational Technical Program</li> <li>• 2 years of Related</li> <li>• 4 years of English</li> <li>• 4 years of Math** (Commences with the Class of 2015)</li> <li>• 3 years of Science ( including 1 lab science)</li> <li>• 3 years of Social Studies</li> <li>• Additional Elective Courses</li> <li>• Enrichment Courses</li> </ul>	32 Credits 2 Credits 8 Credits 8 Credits 6 Credits 6 Credits 3 Credits 3 Credits	
<b>Minimum Academic and Shop Credits Required for Graduation* = 68 Credits</b>			
<p><b>*Additional Requirements for Promotion and Graduation:</b></p> <ul style="list-style-type: none"> <li>• No student will be <b>promoted</b> if he/she fails more than one (1) core course in a school year.</li> <li>• No student will be <b>promoted</b> if he/she fails English during any school year.</li> <li>• No student will be <b>promoted</b> if he/she fails in Technical Shop during any school year.</li> <li>• Students must obtain three (3) credits from Electives to <b>graduate</b>.</li> <li>• Students must obtain three (3) credits from Enrichments to <b>graduate</b>.</li> <li>• Any student who fails to fulfill <b>promotion</b> requirements will be subject to an administrative review to determine appropriate placement for the following school year.</li> <li>• All students must submit a passing Career Portfolio to <b>graduate</b>.</li> <li>• All students must successfully complete all requirements for MCAS Competency Determination to <b>graduate</b>.</li> </ul> <p><b>**Although three (3) years of math is the minimum requirement through the class of 2014, it is <u>strongly</u> recommended that any student who fails math in grades 9-11 pursue summer school so that he or she may progress the following year.</b></p>			

## *Grading System*

<b>Superior</b>	90-100
<b>Very Good</b>	80-89
<b>Satisfactory</b>	70-79
<b>Creditable</b>	60-69
<b>Failure (no credit)</b>	0-59
<b>I</b>	Incomplete (Make-up work is required)
<b>M</b>	Medical (Doctor's note is required)
<b>W</b>	Withdrew
<b>Conduct/Effort</b>	
<b>Excellent</b>	1
<b>Good</b>	2
<b>Fair</b>	3
<b>Unsatisfactory</b>	4

Student shop performance is assessed daily. A weekly assessment record is maintained and averaged to determine the trimester grade point average. Absenteeism is factored into the weekly assessment record and may reduce the weekly average by five (5) points for each day absent. Absences, fully substantiated for just cause, will not result in a penalty. Absences caused by disciplinary reasons or truancy will be factored in as a zero (0) per day and will be included in the weekly assessment record calculation.

### *Incomplete Grades*

An "I" (incomplete) appearing on a report card in any given subject will indicate that a student has failed to make up missed work. It is expected that students will complete make-up work within two (2) weeks of returning from an extended absence unless other arrangements are made with school officials. This applies to all shop, related or academic classes. A student receiving an incomplete grade is responsible for making arrangements with his/her teacher(s) to make up the work within ten (10) days from the end of the marking period. Failure to make up work within the prescribed time will result in a grade of zero for the missed work and will be factored in the determination of a numerical grade point average.

### *Mid-Term Progress Reports*

An academic and a vocational progress report will be issued at the middle of each term for all students. These reports indicate student performance on class/shop assignments, homework and tests, as well as student conduct and effort. Progress reports will be mailed to the parent/guardian.

### *Extra Help and Web-Based Resources*

Students are encouraged to seek support for their course of study by attending a special help period scheduled for after dismissal on Tuesday and Thursday afternoons from 2:15-3:00 P.M. It is the student's responsibility to take the initiative in making arrangements to see teachers for extra help when having difficulty with subject matter or having work to make up after an absence. In addition, the school's website hosts a variety of web-based resources for students. Simply go to [www.valleytech.k12.ma.us](http://www.valleytech.k12.ma.us) and follow the links to the *Media Center* then *Student Links*.

## ***Summer School***

Students may be allowed to make up no more than two (2) core subjects during summer school. Students failing 3 trimesters of a subject will not be allowed to make up the course at summer school.

Summer School Credits: A student must achieve a minimum grade of 75% in summer school in order to receive credit and a recordable grade of 60% on his/her transcript.

All summer school or alternate program placement must be pre-approved by an administrator or guidance counselor.

## ***Cooperative Education Program***

The Cooperative Education Program is a continuation of the school program that provides qualified senior students with a vocational occupational employment opportunity in an industrial setting. The work engaged in must be directly related to the vocation in which the student has been trained and Cooperating employers agree to provide additional training as specified by the school. Students participating in this program work rotating weeks according to the school calendar. The employer reports student performance to the school on a regular basis and students are paid for their work.

Eligibility for the Cooperative Education Program is met during the junior year and is based on the following criteria:

1. A student must maintain a 95% attendance rate (no more than 9 days absent).
2. A student must maintain a grade point average of 70% or better for the year and receive no grade lower than 60% during the third trimester in any course required for graduation.
3. A student must achieve acceptable completion of the junior year portfolio requirement.
4. A student must maintain a conduct/effort grade level of 2 or better.
5. A student must meet minimum shop competency requirements and receive the recommendation of the Vocational Team Leader.

If a student is denied eligibility, the student has the right to submit an appeal to the Cooperative Education Review Team. In the situation where a student is denied eligibility by the Review Team, an individualized contract may be developed whereby the student may become eligible for Co-Op after the first trimester of the senior year is completed.

A student may be removed from the Cooperative Education Program if one or more of the following conditions exist:

1. The student receives a failing or incomplete grade in any subject.
2. A student receives a conduct grade average of 3 or 4.
3. The student is absent more than five (5) days in a trimester without an acceptable excuse validated by written documentation from the appropriate authority.
4. A student participates in behavior leading to disciplinary suspension from school.
5. A student fails to return time slips, weekly work reports and/or evaluations to school.

## *Advanced Placement Courses*

Blackstone Valley Tech is committed to offering challenging and rigorous coursework to prepare students for the demands of the 21<sup>st</sup> century. As newly accepted 8<sup>th</sup> graders, Valley Tech students and parents are guided to create a roadmap to graduation and beyond. Within that on-going process, students and parents are empowered to make decisions about career preparation, course selections, and appropriate levels of rigor. Students are generally encouraged to reach for the most challenging levels of coursework possible.

Blackstone Valley Tech proudly offers Advanced Placement (AP) courses in each of the four core disciplines: mathematics, science, English, and social studies. Enrollment is open to all students; however, students must meet the pre-requisite coursework for AP subjects. Please consult the course descriptions in this book for more specific information regarding prerequisites for each AP course offered.

Students who elect to take AP course(s) must also agree to participate in the AP exam(s) at the conclusion of the course(s). Please see the section titled “*Grade Point Average and Class Rank Calculation*” for more information about how Advanced Placement rigor is rewarded in the GPA calculation.

***Please note:***

***Some AP courses may not run during a given school year due to student interest and/or teacher availability.***

**Academic Courses 2012-2013**

	<b>Grade 9</b>		<b>Grade 10</b>		<b>Grade 11</b>		<b>Grade 12</b>	
<b>ENGLISH</b>	Honors English I	121	Honors English II	122	AP English Language & Composition	133	AP English Literature & Composition	134
	College Prep English I	101	College Prep English II	102	Honors English III	123	Honors English IV	124
	English I	111	English II	112	College Prep English III	103	College Prep English IV	104
	English I	911	English II	912	English III	113	English IV	114
				English III	913	English IV	914	
<b>MATH</b>	Honors Pre-Calculus	224	Honors Geometry	222	Honors Pre-Calculus	224	AP Calculus AB	235
	Honors Algebra II	223	College Prep Geometry	212	College Prep Algebra II	220	Honors Calculus	225
	College Prep Algebra I	221	Geometry	202	Algebra I Part II	210	College Prep Pre-Calculus	229
	Algebra I Part I	200	Geometry	922	Algebra I/Part II	923	College Prep Trigonometry/Pre-Calc	228
	Algebra I Part I	921					College Prep Algebra II	220
						Algebra II	215	
						Algebra II	925	
<b>SCIENCE</b>	Honors Intro to Physics I	313	Honors Intro to Physics II	318	AP Physics B	380	AP Physics B	380
	College Prep Intro to Physics I	311	College Prep Intro to Physics II	317	Honors Physics	344	Honors Physics	344
	Honors Biology Part I	312	Honors Biology Part II	316	College Prep Physics	334	College Prep Physics	334
	College Prep Biology Part I	310	College Prep Biology Part II	315	Honors Chemistry	342	Honors Chemistry	342
	Biology Part I	947	Biology Part II	948	College Prep Chemistry	332	College Prep Chemistry	332
					Honors Biology	345	AP Biology	370
				College Prep Biology	320	Honors Biology	345	
				Physics	957	College Prep Biology	320	
						Chemistry	958	
<b>SOCIAL STUDIES</b>	Honors U.S. History I	440	Honors U.S. History II	426	Honors World History II	442	AP U.S. History	432
	College Prep U.S. History I	415	College Prep U.S. History II	416	College Prep World History II	417	Honors American Government	422
	U.S. History I	429	U.S. History II	425	World History II	433	College Prep American Government	418
	U.S. History I	946	U.S. History II	935			American Government	421
<b>Enrichments</b>								
	Career Enrichment 9	611	Career Enrichment 10	612	Career Enrichment 11	613	Career Enrichment 12	614
<b>Electives</b>								
<b>ELECTIVE COURSES</b>	Art 9	161	Art 10	162	Art 11	163	Art 12	164
	Music 9	141	Music 10	142	Music 11	143	Music 12	144
	Writer's Voice	171	Vision and Revision	172	College Bound Writing	173	Workplace Writing	174
	Spanish I	501	MCAS Math II	262	Spanish I	501	Spanish II	503
	Spanish II	503	Accelerated Algebra II	266	Spanish III	506	Spanish III	506
	MCAS Math I	261	Intro to CAD	331	Spanish IV	508	Spanish IV	508
	Intro to CAD	331	Spanish II	503	Intro to CAD	331	Intro to CAD	331
	Reading	950	Spanish III	506	World Cultures	570	Current Events	406
	Wilson Reading	951	Reading	950	MCAS Math III	263	MCAS Math IV	264
	ESL	984	Wilson Reading	951	Reading	950	Reading	950
			ESL	984	Wilson Reading	951	Wilson Reading	951
					Principles of Engineering	631	Engineering Design & Development	633

## ***English Course Offerings***

The English Department strives to provide a coordinated and integrated English program that nurtures intellectual capabilities and fosters an understanding that learning is a lifelong process. The curriculum provides students with communication competencies through the writing process and through oral presentations. In addition, we offer formal approaches common to areas of fiction, non-fiction, technical, and business writing. Students read the works of various noted authors for analysis of style, form, and historical significance. We encourage an appreciation of literature as a source of enjoyment, social commentary, inquiry, and critical analysis. Students use open-response questions, various sources of information, and appropriate techniques in the refinement of their critical thinking and research skills.

### ***Grade 9 English Courses***

**121**     ***Honors English I***     Credits: 2     Level: 2

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*This course prepares students for a 4 year college program.*

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This course focuses on developing, extending, and improving communication competency. Students write coherent compositions, displaying proficiency in sentence, paragraph and vocabulary development. They practice specific techniques for revising and editing their own work. Students periodically make oral presentations to experience speaking before a critical audience. Students demonstrate an understanding of the structure, elements, and meaning of non-fiction or informational material. Literature includes an introduction to the elements of the short story, poetry, plays, and the novel.

**101**     ***College Prep English I***     Credits: 2     Level: 3

---

*This course prepares students for a 4 year college program.*

---

This course is an introduction to written and oral communication. Students write compositions for a variety of purposes: description, narration, and exposition. Emphasis placed on the writing process develops greater proficiency in sentence and paragraph development. Written and spoken vocabulary expands to express a developing thought process. Readings include the short story, novel, and poetry.

**111**     ***English I***     Credits: 2     Level: 3

---

*This course prepares students for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course is an introduction to written and oral communication. Students write compositions for a variety of purposes: description, narration, and exposition. Emphasis placed on the writing process develops greater proficiency in sentence and paragraph development. Written and spoken vocabulary expands to express a developing thought process. Readings include the novel, short stories, and poetry.

**911**     ***English I***     Credits: 2     Level: 4

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*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

---

The course is an introduction to written and oral communication. This course is designed for students whose English skills are significantly below grade level and who benefit from specialized instruction in a small group setting. Students write compositions for a variety of purposes: description, exposition, and comparison/contrast. Emphasis placed on the writing process develops greater proficiency in sentence and paragraph development. Written and spoken vocabulary expands to express a developing thought process. Readings include the short story, novel, and periodicals.

## Grade 10 English Courses

- 122**     ***Honors English II***     Credits: 2     Level: 2  

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*This course prepares students for a 4 year college program.*

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This course reinforces and expands communication competencies initiated in English I. Students receive greater emphasis on organization, syntax, precision of expression, and wider use of vocabulary. The focus of instruction is to encourage students to demonstrate an understanding of English grammar and standard English conventions and use this knowledge to edit their writing. Students become comfortable using open-response research questions, different sources of information, and appropriate research methods in gathering information for research projects. Students make oral presentations that demonstrate considerations of audience, purpose, and the information conveyed. Students read the works of various noted authors for analysis of style, form, and historical significance.

- 102**     ***College Prep English II***     Credits: 2     Level:3  

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*This course prepares students for a 4 year college program.*

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This course reviews and expands the communication skills introduced in English I with greater emphasis on organization, syntax, precision of expression, and wider use of vocabulary. Through revision exercises students become more aware of the writing and thinking process. Students make oral presentations to experience speaking before a critical audience. Students become more comfortable and confident in various research techniques. Students read various works of fiction and non-fiction to analyze style, form and historical context.

- 112**     ***English II***     Credits: 2     Level:3  

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*This course prepares students for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course reviews and expands the communication skills introduced in English I with greater emphasis on organization, syntax, precision of expression, and wider use of vocabulary. Through revision exercises students become more aware of the writing and thinking process. Students make oral presentations to experience speaking before a critical audience. Students become more comfortable and confident in various research techniques. Students read various works of fiction, non-fiction, and poetry to continue to analyze style, form, and /or historical context.

- 912**     ***English II***     Credits: 2     Level:4  

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*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course reviews and expands the communication skills introduced in English I. It is designed for students with English skills significantly below grade level and who benefit from specialized instruction in a small group setting. Through revision exercises students become more aware of the writing and thinking process. Students make oral presentations to experience speaking before a critical audience. Students read various works of fiction, non-fiction, and poetry to begin to analyze style, form, and/or historical context.

## **Grade 11 English Courses**

- 133**     ***AP English Language and Composition***     Credits:2     Level:1  

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*This course prepares students for a 4 year college program.*

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The AP English Language and Composition course is designed to help students become skilled readers of prose written in a variety of rhetorical contexts and to become skilled writers who compose for a variety of purposes. The objective of the AP English Language and Composition course is to enable students to read complex texts with understanding and to write prose of sufficient richness and complexity to communicate effectively with mature readers. An AP English Language and Composition course should help students move beyond such programmatic responses as the five-paragraph essay provides an introduction with a thesis and three reasons, body paragraphs on each reason, and a conclusion that restates the thesis. Students will be encouraged to place their emphasis on content, purpose, and audience and to allow this focus to guide the organization of their writing. Students must take the AP exam in May to receive AP credit on their transcript. A qualifying score of three (3) or better on the AP exam may earn a student college credit.

**123**     ***Honors English III***     Credits:2     Level:2

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*This course prepares students for a 4 year college program.*

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This course develops and refines communication competencies. Students demonstrate writing and speaking skills mastered in English I and II. Students improve organization, content, paragraph development, level of detail, style, voice, and word choice in their writing, drawing on a variety of revision strategies. In addition, they learn formal writing techniques common to areas of fiction, non-fiction, technical and business writing while demonstrating wider word choice. Students write one research project utilizing research techniques and skills. Readings include selected authors from World Literature. Students develop an appreciation of literature as a source of enjoyment, social commentary, inquiry, and critical analysis.

**103**     ***College Prep English III***     Credits: 2     Level: 3

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*This course prepares students for a 4 year college program.*

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This course continues to review and develop the skills practiced in English I and II. Students use self-generated questions, note taking, summarizing, paraphrasing, and outlining in their learning activities. Emphasis is placed on business and technical writing and preparing a research paper utilizing research techniques and skills. Students interpret the meaning works from World Literature, non-fiction, films, and media by using different critical and analytic techniques.

**113**     ***English III***     Credits: 2     Level: 3

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*This course prepares students for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course continues to review and develop the skills practiced in English Language Arts I and II. Students use self-generated questions, note taking, summarizing, paraphrasing, and outlining in their learning activities. Emphasis is placed on improving reading and writing skills to attain state standards in English Language Arts. Students interpret the meaning of World Literature, non-fiction, films, and media by using different critical and analytic techniques.

**913**     ***English III***     Credits: 2     Level: 4

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*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course is designed for students with English skills significantly below grade level and who have yet to pass the ELA MCAS exam. Students review and develop the skills practiced in English I and II with emphasis on English skills necessary for their transition to the work force. Students use self-generated questions, note taking, summarizing, paraphrasing, and outlining in their learning activities. Students interpret the meaning of literary works, films, and media by using different critical and analytic techniques. Through a variety of hands-on activities, students develop business and technical writing skills.



**914**    ***English IV***

Credits: 2    Level: 4

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*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course is designed for students with English skills significantly below grade level and who have yet to pass the ELA MCAS exam. Students review and develop the skills practiced in English III with emphasis on English skills necessary for their transition to the work force. Students use self-generated questions, note taking, summarizing, paraphrasing, and outlining in their learning activities. Students interpret the meaning of literacy works, films, and media by using different critical and analytic techniques. Through a variety of hands-on activities, students develop business and technical writing skills.

## ***Math Course Offerings***

### ***Grade 9 Math Courses***

- 223**     ***Honors Algebra II***     Credits: 2     Level: 2  

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*Prerequisite: Successful completion of Algebra I or equivalent with a grade of 80 or better and/or meets placement test requirements.*

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*This course prepares students for a 4 year college program.*

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This is an accelerated course with an emphasis on the art of problem solving as it expands upon the topics developed in Algebra I. The topics of study include functions, linear systems, rational expressions, radical and complex numbers, conic sections, and exponential and logarithmic functions. Applications include problems relating to the students' technical areas and everyday life.

- 221**     ***College Prep Algebra I***     Credits: 2     Level: 3  

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*Prerequisite: Successful completion of Pre-Algebra with a grade of 80 or better and/or meets placement test requirements.*

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*This course prepares students for a 4 year college program.*

---

This is an accelerated course with an emphasis on the art of problem solving. Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, data, and graphs. The topics of study include real numbers, linear equations and inequalities, laws of exponents, polynomials and factors, quadratic functions, data analysis and statistics. Applications include problems relating to the students' technical areas and everyday life.

- 200**     ***Algebra I Part I***     Credits: 2     Level: 3  

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*Prerequisite: Successful completion of Pre-Algebra or equivalent.*

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*This course prepares students for a 2 or 4 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This is the first course of a two-part series. Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, data, and graphs. The topics of study include comparing and estimating real numbers, single variable equations and inequalities; coordinate geometry, systems of equations, data analysis and statistics. Applications include problems relating to the students' technical areas and everyday life.

- 921**     ***Algebra I Part I***     Credits: 2     Level: 4  

---

*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course is intended for students whose math skills are significantly below grade level and who have an IEP that requires specialized instruction. The course introduces a selected number of the topics developed in Algebra I Part I, providing more time between topics to strengthen concept development. Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, data, and graphs. The topics of study include comparing and estimating real numbers, single variable equations and inequalities; coordinate geometry, systems of equations, data analysis and statistics. Applications include problems relating to the students' technical areas and everyday life.

## Grade 10 Math Courses

- 222 Honors Geometry** Credits: 2 Level: 2  

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*Prerequisite: Successful completion of Honors Algebra II*

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*This course prepares students for a 4 year college program.*

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This course is an accelerated course with an emphasis on the art of problem solving. Students analyze the characteristics of two and three-dimensional geometric figures and their properties. The study of topics include polygons, properties of circles, area and volume of plane figures and solids, coordinate and transformational geometry, parallelism, congruent and similar figures, and probability. Applications include problems relating to the students' technical areas and everyday life.

- 212 College Prep Geometry** Credits: 2 Level: 3  

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*Prerequisite: Successful completion of College Prep Algebra I or Algebra I Part I and teacher recommendation.*

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*This course prepares students for a 4 year college program.*

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In this course students analyze the characteristics of two and three-dimensional geometric figures and their properties. The topics of study include polygons, properties of circles, area and volume of plane figures and solids, coordinate and transformational geometry, parallelism, similar figures, and probability. Applications include problems relating to the students' technical areas and everyday life.

- 202 Geometry** Credits: 2 Level: 3  

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*This course prepares students for a 2 or 4 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course shares most of the topics developed in College Prep Geometry, but provides more time between topics to strengthen concept development. Students analyze the characteristics of two and three-dimensional geometric figures and their properties. The topics of study include polygons, properties of circles, area and volume of plane figures and solids, coordinate and transformational geometry, parallelism, similar figures, and probability. Applications include problems relating to the students' technical areas and everyday life.

- 922 Geometry** Credits: 2 Level: 4  

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*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course is intended for students whose math skills are significantly below grade level and who have an IEP that requires specialized instruction. The course introduces a selected number of the topics developed in Geometry, but provides more time between topics to strengthen concept development. The topics of study include polygons, properties of circles, area and volume of plane figures and solids, coordinate and transformational geometry, parallelism, similar figures, and probability. Applications include problems relating to the students' technical areas and everyday life.

## *Grade 11 Math Courses*

**224**     ***Honors Pre-Calculus***     Credits: 2     Level: 2

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*Prerequisite: Successful completion of Honors Algebra II.*

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*This course prepares students for a 4 year college program.*

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This course is an accelerated course designed to prepare students for Calculus and AP Calculus AB. The topics of study include a further examination of functions: linear, polynomial, rational, exponential, logarithmic, and trigonometric functions. The study of functions will include graphs, asymptotes, limits, continuity, symmetry, domain and range, and roots. Use of the graphing calculator is emphasized throughout instruction.

**220**     ***College Prep Algebra II***     Credits: 2     Level: 3

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*Prerequisite: Successful completion of College Prep Algebra I.*

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*This course renders students eligible for a 4 year college program.*

---

This course expands upon the topics developed in College Prep Algebra I. The topics of study include functions, linear systems, factoring, rational expressions, radicals and complex numbers, conic sections, and exponential and logarithmic functions. Applications include problems relating to the students' technical areas and everyday life.

**210**     ***Algebra I Part II***     Credits: 2     Level: 3

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*Prerequisite: Successful completion of Algebra I Part I.*

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*This course renders students eligible for a 2 or 4 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This is the second course of a two-part series extending from the topics developed in Algebra I Part I. In this course, students deepen their understanding of patterns, relations and functions. The topics of study include writing, solving and graphing systems of linear equations and inequalities, laws of exponents, polynomials and factors, solving and graphing quadratic functions, and non-linear functions. Applications include problems relating to the students' technical areas and everyday life.

**923**     ***Algebra I Part II***     Credits: 2     Level: 4

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*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

---

This course is designed for students whose math skills are significantly below grade level and who have an IEP that requires specialized instruction. This is the second course of a two-part series extending from the topics developed in Algebra I Part I. In this course, students deepen their understanding of patterns, relations and functions. The topics of study include writing, solving and graphing systems of linear equations and inequalities, laws of exponents, polynomials and factors, solving and graphing quadratic functions, and non-linear functions. Applications include problems relating to the students' technical areas and everyday life.

## Grade 12 Math Courses

- 235**     ***AP Calculus AB***     Credits: 2     Level: 1  

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*Prerequisite: Successful completion of Honors Pre-Calculus.*

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*This course prepares students for a 4 year college program.*

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This is an accelerated course with an emphasis on the AP Calculus AB Exam. Students enrolled in this course prepare to take the Advanced Placement AB Calculus Exam and seek college credit and/or placement from institutions of higher learning. Course study includes properties of functions, graphs, limits, differential calculus, integral calculus, and applications. Regular use of a graphing calculator is required in the course work. Successful completion of summer problems and/or special projects may be required. Students must take the AP exam in May to receive AP credit on their transcript. A qualifying score of three (3) or better on the AP exam may earn a student college credit.

- 225**     ***Honors Calculus***     Credits: 2     Level: 2  

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*Prerequisite: Successful completion of Honors Pre-Calculus and teacher recommendation.*

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*This course prepares students for a 4 year college program.*

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This course is an accelerated course designed for students planning to attend a four year college or university. Course study includes properties of functions, graphs, limits, differential calculus, integral calculus, and applications. Use of the graphing calculator is emphasized throughout instruction.

- 229**     ***College Prep Pre-Calculus***     Credits:2     Level:3  

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*Prerequisite: Successful completion of College Prep Algebra II*

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*This course prepares students for a 4 year college program.*

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This course is designed for students planning to continue their education after graduation. The topics of study include a further examination of functions: linear, polynomial, rational, exponential, logarithmic, and trigonometric functions. The study of functions will include graphs, asymptotes, limits, continuity, symmetry, domain and range, and roots. Use of the graphing calculator is emphasized throughout instruction.

- 228**     ***College Prep Trigonometry/Pre-Calculus***     Credits: 2     Level: 3  

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*Prerequisite: Successful completion of College Prep Algebra II.*

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*This course prepares students for a 4 year college program.*

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This course is designed for students planning to continue their education after graduation. The topics of study include analytical trigonometry, right triangle and circular trigonometric functions, and applications of trigonometric functions. Also included are polynomial, rational, exponential and logarithmic functions. Applications include problems relating to the students' technical areas and everyday life.

- 220**     ***College Prep Algebra II***     Credits: 2     Level: 3  

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*Prerequisite: Successful completion of College Prep Algebra I.*

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*This course renders students eligible for a 4 year college program.*

---

This course expands upon the topics developed in College Prep Algebra I. The topics of study include functions, linear systems, factoring, rational expressions, radicals and complex numbers, conic sections, and exponential and logarithmic functions. Applications include problems relating to the students' technical areas and everyday life.

**215 Algebra II**

Credits: 2 Level: 3

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*Prerequisite: Successful completion of Algebra I Part II.*

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*This course renders students eligible for a 2or 4 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course expands upon the topics developed in Algebra I Parts I and II. The topics of study include functions, linear systems, factoring, rational expressions, radicals and complex numbers. Applications include problems relating to the students' technical areas and everyday life.

**925 Algebra II**

Credits: 2 Level:4

---

*This course renders students eligible for a 2or 4 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

---

This course is intended for students whose math skills are significantly below grade level and who have an IEP that requires specialized instruction. This course expands upon the topics developed in Algebra I Parts I and II. The topics of study include functions, linear systems, factoring, rational expressions, radicals and complex numbers. Applications include problems relating to the students' technical areas and everyday life.

## *Science Course Offerings*

### *Grade 9 Science Courses*

Prior to the start of school, students are enrolled in either *Intro to Physics* or *Biology*. To provide the solid scientific background required to succeed on MCAS exams, these courses are completed during the freshman and sophomore years. If a student begins with Intro to Physics I freshman year, he/she will automatically be enrolled in Intro to Physics II for the sophomore year. The same procedure is applied to students enrolled in Biology I. It is essential that students enroll in both years of either Intro to Physics or Biology to complete the full course of study. Please be aware that students taking Intro to Physics in grades 9 and 10 will have the opportunity to study the life sciences in their junior and senior years and vice versa.

**313**     ***Honors Intro to Physics I***     Credits: 2     Level: 2

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*This course prepares students for a 4 year college program.*

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This course is the first half of two-year sequence designed to follow the Massachusetts State Frameworks for Intro to Physics and prepare students for success on the Intro to Physics MCAS exam in the spring of the student's sophomore year. Students explore the three strands of the Massachusetts Science and Technology Curriculum Frameworks: Motion and Forces, Conservation of Energy & Momentum, and Heat and Heat Transfer. Students enrolled in this accelerated course explore the various topics in greater depth and engage in additional course work and extended projects. The content of the program, focused on the Intro to Physics, is learned through the use of numerous hands-on activities and projects. Students are expected to complete an individual science project demonstrating the application of scientific inquiry to their vocational/technical studies. This course is considered a lab science for college admissions.

**311**     ***College Prep Intro to Physics I***     Credits: 2     Level: 3

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*This course prepares students for a 4 year college program.*

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This course is the first half of two-year sequence designed to follow the Massachusetts State Frameworks for Intro to Physics and prepare students for success on the Intro to Physics MCAS exam in the spring of the student's sophomore year. Students explore the three strands of the Massachusetts Science and Technology Curriculum Frameworks: Motion and Forces, Conservation of Energy & Momentum, and Heat and Heat Transfer. The content of the program is learned through the use of numerous hands-on activities and projects. All students are expected to complete an individual science project demonstrating the application of scientific inquiry to their vocational/technical studies. Students enrolled in this course are expected to independently explore the various topics discussed in class, using a wide variety of resources. This course is considered a lab science for college admissions.

**312**     ***Honors Biology I***     Credits: 2     Level: 2

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*This course prepares students for a 4 year college program.*

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This course is the first half of two-year sequence designed to follow the Massachusetts State Frameworks for Biology and prepare students for success on the Biology MCAS exam in the spring of the student's sophomore year. However, honors students will take the MCAS exam at the end of freshman year. Students enrolled in this accelerated course explore the various topics in greater depth and engage in additional course work and extended projects. This lab course concentrates on the cell, its structure, functions, and variety and introduces how genetic problems within the cell affect the entire individual. Instruction involves laboratory activities, reports and research. All students are expected to complete an individual science project demonstrating the application of scientific inquiry to their vocational/technical studies. The project must demonstrate an understanding of the scientific method and its use in solving a real-world problem. This course is considered a lab science for college admissions.

**310**     ***College Prep Biology I***

Credits: 2     Level: 3

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*This course prepares students for a 4 year college program.*

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This course is the first half of two-year sequence designed to follow the Massachusetts State Frameworks for Biology and prepare students for success on the Biology MCAS exam in the spring of the student's sophomore year. This lab course concentrates on the cell, its structure, functions, and variety and introduces how genetic problems within the cell affect the entire individual. Instruction involves laboratory activities, reports and research. All students are expected to complete an individual science project demonstrating the application of scientific inquiry to their vocational/technical studies. The project must demonstrate an understanding of the scientific method and its use in solving a real-world problem. This course is considered a lab science for college admissions.

**947**     ***Biology I***

Credits: 2     Level: 4

---

*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course is the first half of two-year sequence designed to follow the Massachusetts State Frameworks for Biology and prepare students for success on the Biology MCAS exam in the spring of the student's sophomore year. This course is designed for students on an IEP and offers specialized instruction in a small group setting. Students learn through a variety of “hands on” activities and labs that facilitate teamwork and improve problem-solving skills. Students apply their knowledge in the vocational/technical labs. This course is considered a lab science for college admissions.

## Grade 10 Science Courses

**318**     ***Honors Intro to Physics II***     Credits: 2     Level: 2

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*Prerequisite: Physical Science Part I, teacher recommendation.*

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*This course prepares students for a 4 year college program.*

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This course is the second half of two-year sequence designed to prepare students for continued proficiency in Intro to Physics and laboratory skills. Students enrolled in this accelerated course examine the various topics in greater depth and engage in additional course work and extended projects. Students continue to explore the three strands of the Massachusetts Science and Technology Curriculum Frameworks: Motion and Forces, Conservation of Energy & Momentum, and Heat and Heat Transfer. The content of the program, focused on the Intro to Physics, is learned through the use of numerous hands-on activities and projects. Students are expected to complete an individual science project demonstrating the application of scientific inquiry to their vocational/technical studies. This course is considered a lab science for college admissions.

**317**     ***College Prep Intro to Physics II***     Credits: 2     Level: 3

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*Prerequisite: Physical Science Part I.*

---

*This course prepares students for a 4 year college program.*

---

This course is the second half of two-year sequence designed to follow the Massachusetts State Frameworks for Intro to Physics and prepare students for success on the Intro to Physics MCAS exam in the spring of the student's sophomore year. Students continue to explore the three strands of the Massachusetts Science and Technology Curriculum Frameworks: Motion and Forces, Conservation of Energy & Momentum, and Heat and Heat Transfer. The content of the program is learned through the use of numerous hands-on activities and projects. All students are expected to complete an individual science project demonstrating the application of scientific inquiry to their vocational/technical studies. Students enrolled in this course are expected to independently explore the various topics discussed in class, using a wide variety of resources. This course is considered a lab science for college admissions.

**316**     ***Honors Biology II***     Credits: 2     Level: 2

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*Prerequisite: Biology Part I, teacher recommendation.*

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*This course prepares students for a 4 year college program.*

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This course is the second half of two-year sequence designed to prepare students for continued proficiency in Biology, laboratory skills, and successful MCAS scores. Students enrolled in this accelerated course examine the various topics in greater depth and engage in additional course work and extended projects. This lab course focuses on genetics evolution, biodiversity, and ecology with a review of human biology. Instruction involves laboratory activities, reports and research. All students are expected to complete an individual science project demonstrating the application of scientific inquiry to their vocational/technical studies. The project must demonstrate an understanding of the scientific method and its use in solving a real-world problem. This course is considered a lab science for college admissions.

**315**      ***College Prep Biology II***      Credits: 2      Level: 3

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*Prerequisite: Biology Part I.*

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*This course prepares students for a 4 year college program.*

---

This course is the second half of two-year sequence designed to follow the Massachusetts State Frameworks for Biology and prepare students for success on the Biology MCAS exam in the spring of the student's sophomore year. This lab course introduces genetics, evolution, biodiversity, and ecology. Instruction involves laboratory activities, reports and research. All students are expected to complete an individual science project demonstrating the application of scientific inquiry to their vocational/technical studies. The project must demonstrate an understanding of the scientific method and its use in solving a real-world problem. This course is considered a lab science for college admissions.

**948**      ***Biology II***      Credits: 2      Level: 4

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*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

---

This course is the second half of two-year sequence designed to follow the Massachusetts State Frameworks for Biology and prepare students for success on the Biology MCAS exam in the spring of the student's sophomore year. This course introduces genetics, evolution, biodiversity, and ecology. This course is designed for students on an IEP and offers specialized instruction in a small group setting. Students learn through a variety of hands-on activities and labs that facilitate teamwork and improve problem-solving skills. This course is considered a lab science for college admissions.

## Grade 11 Science Courses

380 **AP Physics B** Credits: 2 Level: 1

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*Prerequisites: Successful completion of Algebra II as well as Intro to Physics I & II or Physics. Students enrolled in this course are required to complete summer assignments designed to refine specialized skills applicable to this course.*

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*This course prepares students for a 4 year college program.*

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**The goal of AP Physics B is to provide students with an experience equivalent to an introductory college-level Physics course.** The AP Physics B course is designed to be taken by students after the successful completion of a course in Intro to Physics or Physics. **AP Physics B requires a serious commitment from students. This class will be conducted primarily through inquiry based laboratory experiments and problem solving activities, reinforced with class discussion.** Physics B will include instruction in each of the following five content areas: Newtonian mechanics, fluid mechanics and thermal physics, electricity and magnetism, waves and optics, and atomic and nuclear physics. **Students should be prepared to devote a significant amount of time to working on problem sets, writing lab reports, and working on projects outside of class. It is expected that students taking this course will have strong algebra skills.** Students must take the AP exam in May to receive AP credit on their transcript. A qualifying score of three (3) or better on the AP exam may earn a student up to 8 college credits. This course is considered a lab science for college admissions.

344 **Honors Physics** Credits: 2 Level: 2

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*Prerequisite: Algebra II or must take Algebra II concurrently.*

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*This course prepares students for a 4 year college program.*

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This is an intensive science course for highly motivated students with high level math skills, especially those interested in careers and or majors in science, engineering or mathematics. Topics include dimensional analysis of metric (SI) and English measurement units, density, laws of motion, linear and angular motion, vector analysis and summation, electrical and static forces, potential and kinetic energy, work & power, friction, mechanical and electromagnetic waves, gravity and other nuclear forces, centripetal acceleration and orbital motion, heat, thermal expansion, quantum mechanics, calculation of physical constants, gas laws, nuclear fission and fusion, optics, and other topics in a effort to discover the relationship of why and how all things work in our universe. Frequent labs and persistent independent study are required in this course. This course is considered a lab science for college admissions.

334 **College Prep Physics** Credits: 2 Level: 3

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*This course prepares students for a 4 year college program.*

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This is a science course requiring strong math skills and is designed for the college-bound student. Topics studied include dimensional analysis, linear and angular motion, vector analysis, heat, centripetal acceleration and orbital motion, gravitation, nuclear forces, quantum mechanics, and calculation of physical constants. Through the study of these and other topics, students discover the relationship of how all things work in our universe. Students participate in frequent labs, independent projects and a final project in which they incorporate course content to design, build, and test a solution to a specific task. This course is considered a lab science for college admissions.

957 **Physics** Credits: 2 Level: 4

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*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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Classroom and laboratory instruction includes the proper use of laboratory equipment, use of appropriate investigative techniques, current theories and established laws, and conceptual and mathematical ideas as related to fundamental Physics topics. Through the study of these and other topics, students discover the relationship of how all things work in our universe. Students participate in frequent labs and projects designed to test a solution to a specific task. Students learn through a variety of hands-on activities and labs that facilitate teamwork and improve problem-solving skills. This course is designed for students on an IEP and offers specialized instruction in a small group setting.

342 **Honors Chemistry** Credits: 2 Level: 2

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*This course prepares students for a 4 year college program.*

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Honors Chemistry is an accelerated Chemistry course designed to offer students the opportunity to master the conceptual and mathematical principles of chemistry. Students interested in attending college or pursuing a science related career, such as medical professions, engineering, lab technology, or research should consider taking this course. The course includes classroom and laboratory instruction including proper use of laboratory equipment, use of appropriate investigation techniques, current theories and established laws, and conceptual and mathematical ideas as related to chemistry topics, such as matter, chemical reactions, molecular bonding, and solutions. The course subject material includes matter and energy concepts, chemical and physical reactions, atomic structure and theory, periodicity, chemical bonding, acids and bases, and nanotechnology. This course is considered a lab science for college admissions and will prepare students for AP Biology.

332 **College Prep Chemistry** Credits: 2 Level: 3

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*This course prepares students for a 4 year college program.*

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This lab course is presented in the context of chemical influences in contemporary life. Classroom instruction examines chemical theories while students gain knowledge of chemical techniques and analysis through lab experimentation and reporting. Areas of study include descriptive chemistry, classes of matter, chemical reactions, acids and bases, atomic theory, the periodic table, covalent and ionic bonding, and quantitative chemical analysis. Classroom and laboratory instruction includes the proper use of laboratory equipment, use of appropriate investigative techniques, current theories and established laws, and conceptual and mathematical ideas as related to chemistry topics. This course is considered a lab science for college admissions.

345 **Honors Biology** Credits: 2 Level: 2

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*This course prepares students for a 4 year college program.*

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This accelerated course is designed for the motivated student in preparation for independent work. The topics of study include examination of cell structure and function, types of cells, their similarities and differences, as well as biochemical processes. The principles of DNA and genetics are studied and discussed in the context of current societal issues. Students will examine how changes in the genetic history of organisms have led to the great diversity in life forms on Earth. Other topics include taxonomy, ecology, with the biotic and abiotic factors as they apply to varied environments. Students will engage in a variety of activities such as labs, projects, and research papers. They will apply the scientific method in this inquiry-based course to further develop their problem solving as well other critical thinking skills. This course is considered a lab science for college admissions.

320 **College Prep Biology** Credits: 2 Level: 3

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*This course prepares students for a 4 year college program.*

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In College Prep Biology students study genetics, evolution and biodiversity, as well as selected topics in anatomy and physiology. This lab course concentrates on the cell, its structure and functions and reveals how genetic problems within the cell affect the entire individual. Practical laboratory exercises following the scientific method provide the student with experiences in biological problem solving. These exercises are designed to reinforce the Scientific concepts taught and discussed in class. This course is considered a lab science for college admissions.

## Grade 12 Science Courses

380 **AP Physics B** Credits: 2 Level: 1

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*Prerequisites: Successful completion of Algebra II as well as Intro to Physics I & II or Physics. Students enrolled in this course are required to complete summer assignments designed to refine specialized skills applicable to this course.*

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*This course prepares students for a 4 year college program.*

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**The goal of AP Physics B is to provide students with an experience equivalent to an introductory college-level Physics course.** The AP Physics B course is designed to be taken by students after the successful completion of a course in Intro to Physics or Physics. **AP Physics B requires a serious commitment from students. This class will be conducted primarily through inquiry based laboratory experiments and problem solving activities, reinforced with class discussion.** Physics B will include instruction in each of the following five content areas: Newtonian mechanics, fluid mechanics and thermal physics, electricity and magnetism, waves and optics, and atomic and nuclear physics. **Students should be prepared to devote a significant amount of time to working on problem sets, writing lab reports, and working on projects outside of class. It is expected that students taking this course will have strong algebra skills.** Students must take the AP exam in May to receive AP credit on their transcript. A qualifying score of three (3) or better on the AP exam may earn a student up to 8 college credits. This course is considered a lab science for college admissions.

344 **Honors Physics** Credits: 2 Level: 2

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*Prerequisite: Algebra II or must take Algebra II concurrently.*

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*This course prepares students for a 4 year college program.*

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This is an intensive science course for highly motivated students with high level math skills, especially those interested in majoring in science, engineering or mathematics. Topics include dimensional analysis of metric (SI) and English measurement units, density, laws of motion, linear and angular motion, vector analysis and summation, electrical and static forces, potential and kinetic energy, work & power, friction, mechanical and electromagnetic waves, gravity and other nuclear forces, centripetal acceleration and orbital motion, heat, thermal expansion, quantum mechanics, calculation of physical constants, gas laws, nuclear fission and fusion, optics, and other topics in an effort to discover the relationship of why and how all things work in our universe. Frequent labs and persistent independent study are required in this course. This course is considered a lab science for college admissions.

334 **College Prep Physics** Credits: 2 Level: 3

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*This course prepares students for a 4 year college program.*

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This is a science course requiring high-level math skills and is designed for the college-bound student. Topics studied include dimensional analysis, linear and angular motion, vector analysis, heat, centripetal acceleration and orbital motion, gravitation, nuclear forces, quantum mechanics, and calculation of physical constants. Through the study of these and other topics, students discover the relationship of how all things work in our universe. Students participate in frequent labs, independent projects and a final project in which they incorporate course content to design, build, and test a solution to a specific task. This course is considered a lab science for college admissions.

**342 Honors Chemistry** Credits: 2 Level: 2  
*This course prepares students for a 4 year college program.*

Honors Chemistry is an accelerated Chemistry course designed to offer students the opportunity to master the conceptual and mathematical principles of chemistry. Students interested in attending college or pursuing a science related career, such as medical professions, engineering, lab technology, or research should consider taking this course. The course includes classroom and laboratory instruction including proper use of laboratory equipment, use of appropriate investigation techniques, current theories and established laws, and conceptual and mathematical ideas as related to chemistry topics, such as matter, chemical reactions, molecular bonding, and solutions. The course subject material includes matter and energy concepts, chemical and physical reactions, atomic structure and theory, periodicity, chemical bonding, acids and bases, and nanotechnology. This course is considered a lab science for college admissions.

**332 College Prep Chemistry** Credits: 2 Level: 3  
*This course prepares students for a 4 year college program.*

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This lab course is presented in the context of chemical influences in contemporary life. Classroom instruction examines chemical theories while students gain knowledge of chemical techniques and analysis through lab experimentation and reporting. Areas of study include descriptive chemistry, classes of matter, chemical reactions, acids and bases, atomic theory, the periodic table, covalent and ionic bonding, and quantitative chemical analysis. Classroom and laboratory instruction includes the proper use of laboratory equipment, use of appropriate investigative techniques, current theories and established laws, and conceptual and mathematical ideas as related to chemistry topics. This course is considered a lab science for college admissions.

**958 Chemistry** Credits: 2 Level: 4  
*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This lab course is presented in the context of chemical influences in contemporary life. Classroom instruction examines fundamental chemical theories while students gain essential knowledge of chemical techniques and analysis through lab experimentation and reporting. Classroom and laboratory instruction includes the proper use of laboratory equipment, use of appropriate investigative techniques, current theories and established laws, and conceptual and mathematical ideas as related to chemistry topics. This course is designed for students on an IEP and offers specialized instruction in a small group setting. Students learn through a variety of hands-on activities and labs that facilitate teamwork and improve problem-solving skills.

370 **AP Biology** Credits: 2 Level:1

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*Prerequisite: Successful completion of chemistry and 1 or more high school biology courses.*

*Students enrolled in this course are required to complete summer assignments designed to refine specialized skills applicable to this course.*

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*This course prepares students for a 4 year college program.*

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**The goal of AP Biology is to provide students with an experience equivalent to an introductory college-level Biology course.** The AP Biology course is designed to be taken by students after the successful completion of a first course in high school biology and one in high school chemistry. It aims to provide students with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the rapidly changing science of biology. **The two main goals of AP Biology are to help students develop a conceptual framework for modern biology and to help students gain an appreciation of science as a process.** Primary emphasis in an AP Biology course should be on developing an understanding of concepts rather than memorization of terms and technical details. Essential to this conceptual understanding are the following: a grasp of science as a process rather than as an accumulation of facts; personal experience in scientific inquiry; recognition of unifying themes that integrate the major topics of biology; and application of biological knowledge and critical thinking to environmental and social concerns. **Students should be prepared to devote a significant amount of time to master vocabulary and concepts presented in class, writing lab reports, and working on projects outside of class.** Students must take the AP exam in May to receive AP credit on their transcript. A qualifying score of three (3) or better on the AP exam may earn a student college credit. This course is considered a lab science for college admissions.

345 **Honors Biology** Credits: 2 Level:2

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*This course prepares students for a 4 year college program.*

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This accelerated course is designed for the motivated student in preparation for AP Biology or independent work. The topics of study include examination of cell structure and function, types of cells, their similarities and differences, as well as biochemical processes. The principles of DNA and genetics are studied and discussed in the context of current societal issues. Students will examine how changes in the genetic history of organisms have lead to the great diversity in life forms on Earth. Other topics include taxonomy, ecology, with the biotic and abiotic factors as they apply to varied environments. Students will engage in a variety of activities such as labs, projects, and research papers. They will apply the scientific method in this inquiry- based course to further develop their problem solving as well other critical thinking skills. This course is considered a lab science for college admissions.

320 **College Prep Biology** Credits: 2 Level:3

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*This course prepares students for a 4 year college program.*

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In College Prep Biology students study genetics, evolution and biodiversity, as well as selected topics in anatomy and physiology. This lab course concentrates on the cell, its structure and functions and reveals how genetic problems within the cell affect the entire individual. Practical laboratory exercises following the scientific method provide the student with experiences in biological problem solving. These exercises are designed to reinforce the Scientific concepts taught and discussed in class. This course is considered a lab science for college admissions.

## *Social Studies Course Offerings*

### *Grade 9 Social Studies Courses*

The freshman year social studies course reviews the development of the United States from its early settlement through Reconstruction of the South after the Civil War. Students examine the historical and intellectual origins of the United States during the Revolutionary and Constitutional eras. After determining the political and economic factors that contributed to the outbreak and consequences of the Revolution, students are introduced to the writing and key ideas of the U.S. Constitution. Students also study the basic framework of American democracy and those fundamental concepts of American government such as popular sovereignty, federalism, separation of powers, and individual rights. Students study America's westward expansion, the establishment of political parties, and economic and social change. Finally students learn about the growth of sectional conflict, how sectional conflict led to the Civil War, and the consequences of the Civil War, including Reconstruction. The origins and impact of sectionalism on American life and politics is addressed. Students develop an understanding of the political, economic, social, and cultural forces involved in the cause and effect of historical change. The reading of primary source documents is an integral part of this course. Emphasis is placed on aligning this course with the Massachusetts State Frameworks for U.S. History I.

**440**    *Honors U.S. History I*    Credits: 2    Level: 2

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*This course prepares students for a 4 year college program.*

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The Honors level of U.S. History I maintains an accelerated pace as students explore topics in greater depth through additional course work and the integration of technology. Students participate in a rich variety of activities including public speaking assignments, term projects, oral and written reports, and supplemental reading. Emphasis is placed on developing content driven essays that support the Writing Across the Curriculum initiative and exemplary portfolio entries. Traditional note taking and testing are a vital component of this course.

**415**    *College Prep U.S. History I*    Credits: 2    Level: 3

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*This course prepares students for a 4 year college program.*

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This course maintains a rigorous pace and requires students to explore topics in greater depth including additional course work and projects. Students participate in a rich variety of activities directed toward the development of oral and written reports. Emphasis is placed on developing content driven essays that support the Writing Across the Curriculum initiative and on exemplary portfolio entries. Traditional note taking and testing are a vital component of this course.

**429**    *U.S. History I*    Credits: 2    Level: 3

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*This course prepares students for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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Students participate in a rich variety of activities directed toward the development of oral and written reports. Emphasis is placed on developing content driven essays that support the Writing Across the Curriculum initiative. Students participate in activities and projects directed toward the development of oral and written reports with emphasis on communication skills.

**946**    *U.S. History I*    Credits: 2    Level: 4

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*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This class is designed for students with an IEP requiring specialized instruction in a small group setting. Through reading, class discussion, hands-on-projects and writing exercises, students are encouraged to develop a more thorough understanding of the periods studied. Writing Across the Curriculum is an important course component; however, this course also utilizes a wide variety of assessment strategies so that students may demonstrate their understanding of subject matter.

## Grade 10 Social Studies Courses

More than any other nation, The United States has envisioned itself as an ever-changing landscape with a vision of pure possibility for the individual. The 10<sup>th</sup> grade curriculum discusses that which is the American vision, and why and how Americans commemorate history. From a review of America's Division and Uneasy Reunion (1848-1877), to The Era of Expansion Rewards and Costs (1850-1915), through a United States on the brink of change precipitated by Progressive Reform and World War I this course evaluates that which is our heritage. The Twenties, The Great Depression, World War II, the Cold War, The Civil Rights Movement and other social movements are considered. The Capstone Unit takes us through the Korean Conflict, the Vietnam Conflict, the fall of Communism as well as current issues and concerns in the world today. Students develop an understanding of those events that comprise our special role in the world at large. Emphasis is placed on aligning this course with the Massachusetts State Frameworks for U.S. History II.

**426**     ***Honors U.S. History II: Imagining the American Nation***     Credits: 2     Level: 2

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*This course prepares students for a 4 year college program.*

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Students at this Honors level explore topics at an accelerated pace and in great depth through additional course work that includes the integration of technology. Students participate in a rich variety of activities including required research and compositions, a major project each trimester, and supplemental reading assignments. Emphasis is placed on developing content driven essays that support the Writing Across the Curriculum initiative and on exemplary portfolio entries. Traditional note taking and testing are a vital component of this course.

**416**     ***College Prep U.S. History II: Imagining the American Nation***     Credits: 2     Level: 3

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*This course prepares students for a 4 year college program.*

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**At the college prep level, students maintain a rigorous pace while they are challenged to develop an understanding of the complexities of this course through traditional testing, required compositions, note taking, and research projects. Emphasis is placed on aligning this course with the Massachusetts State Frameworks for U.S. History II.**

**425**     ***U.S. History II: The American Nation***     Credits: 2     Level: 3

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*This course prepares students for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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Students in this course are challenged to develop an understanding of those events that comprise our special role in the world at large. Emphasis is placed on aligning this course with the Massachusetts State Frameworks for U.S. History II.

**935**     ***U.S. History II***     Credits: 2     Level: 4

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*This course renders students eligible for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course is designed for students with an IEP requiring specialized instruction in a small group setting. Students study the time period from the Civil War to the present and are exposed to such topics as; the Industrial Revolution, Imperialism, World War I, The Great Depression, World War II, The Cold War and The Vietnam Conflict, and modern day issues such as terrorism. This course expands understanding of the United States' role in world affairs. Students learn to do research and to create oral and written presentations that demonstrate their understanding of world events. Emphasis is placed on aligning this course with the Massachusetts State Frameworks for U.S. History II.



## *Grade 12 Social Studies Courses*

The 12<sup>th</sup> grade curriculum is designed to give the student an understanding of the workings of local, state, and federal governments. Students study and discuss the role of the citizen in government, the American political party system as well as past and present elections. The focus is on the three branches of the federal government and how they influence the lives of all citizens. Students examine the workings of Congress, the role of the President and his cabinet, and the need for the judicial system. Students develop the understanding that they live not only under the laws of the federal government, but also under the laws of the state and local governments as they learn about the workings of all three. Students study the Constitution of the United States and its amendments. This course focuses on those important Supreme Court cases that have had an impact on our lives. A major emphasis during the senior year is to interest students in becoming involved citizens and active participants in their government.

**432**    ***AP U.S. History***    Credits: 2    Level: 1

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*Successful completion of summer work is required.*

*This course prepares students for a 4 year college program.*

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AP United States History is intended for highly motivated and serious students who are ready for the challenge of a college level course. Students making a commitment to Advanced Placement should expect the reading and writing demands equivalent to a college course. This course provides an overview of the American experience from the pre-Columbian through the post Vietnam eras together with the close examination of problems or themes through supplementary readings of documents, essays, and specialized writing by historians. Students must take the AP exam in May to receive AP credit on their transcript. A qualifying score of three (3) or better on the AP exam may earn a student college credit.

**422**    ***Honors American Government***    Credits: 2    Level: 2

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*This course prepares students for a 4 year college program.*

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In this Honors course students study the topics in greater depth while maintaining an accelerated pace. Students are evaluated through traditional testing, note taking, required research and compositions as well as a major project each trimester. In addition, each trimester a supplemental book is assigned. An emphasis is placed on public speaking and the integration of technology.

**418**    ***College Prep American Government***    Credits: 2    Level: 3

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*This course prepares students for a 4 year college program.*

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Students maintain a rigorous pace while studying these topics in great depth. Evaluation is based on traditional quizzes, tests, projects, research and writing assignments, and discussions. Writing Across the Curriculum is an integral part of the course.

**421**    ***American Government***    Credits: 2    Level: 3

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*This course prepares students for a 2 year college program, continued vocational training, or direct entry into the workforce upon graduation.*

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This course requires students to be involved in traditional note taking and testing as well as projects, research and writing assignments, and discussions. Writing Across the Curriculum is an integral part of the course.

## ***Career Enrichments***

### ***Employability, Management & Entrepreneurship, Seminar & Technical Competency***

Through this enrichment rotation program (required of every student in grades 9-12) students develop and demonstrate, via classroom activities and portfolio entries, personal, social, technical and employability skills for career and life management.

**611 Career Enrichment 9**

Credits: 1 Level: 3

#### ***Employability***

Students develop an awareness of their personal skills, interests and abilities as they relate to career choices. Students cultivate and demonstrate attitudes, behaviors and skills that promote self knowledge, personal responsibility, decision-making and self direction. School Counselors provide instruction, resources and research skills vital to creating the student's initial Career Plan and the selection of a traditional or non-traditional career path. The Career Plan is a formalized written document that fits the student's unique and specific goals. This plan is reviewed and updated annually by the student, parent/guardian and faculty through Employability.

#### ***Management & Entrepreneurship***

This business course introduces students to management and entrepreneurship. Topics include basic business practices, resource management, finance, law, community relations, economics and ethics. Business organization, teamwork, customer service and competition are also introduced. By the end of freshmen year, students have been exposed to the entrepreneurial thinking process for recognizing opportunity for a product or service, followed by a prototype building project.

#### ***Freshman Seminar***

Freshmen Seminar provides Blackstone Valley Tech students with lecture hall experience. The seminar series provides help and support to core academic subjects and vocational goals. Seminar incorporates 21<sup>st</sup> Century Skills into the presentations and activities. Freshmen are challenged to think critically about current social and economic issues. Students practice interpersonal communication skills during their activity sessions. Speakers, including outside experts, address relevant and timely issues to large groups of students in the BVT Competition Center. Seminar also takes advantage of the large group setting by including hands-on activities, such as business networking and team building, to foster collaboration and creativity.

#### ***Technical Competency***

This business course introduces freshmen to the internet, BVT computer network, and BVT website. Students learn workplace computer basics: online safety, hardware components, operating systems, and software applications. Word processing is introduced, including basic editing, formatting, and the use of tables and graphics. Presentation software is also introduced, in the form of digital storytelling. Students are given the opportunity to apply these skills through assigned projects and computer lab demonstrations, and through the use of online communication and collaboration tools.

***Employability***

Students develop an awareness of the education and training required to achieve career goals. Job Shadowing experience and career based research is used to broaden the student's understanding of the skills necessary for employment retention and advancement. Students explore the attitudes, behaviors and interpersonal skills that promote positive relationships in the workplace. Knowledge gained through these activities along with personal goal setting is incorporated into the student's Career Plan. The Career Plan is reviewed and updated annually by the student, parent/guardian, and faculty through Employability.

***Management & Entrepreneurship***

This business course builds on the management and entrepreneurship skills learned in Grade 9. Topics continue to include basic business practices, resource management, finance, law, community relations, economics and ethics. Demographics, target market, competition analysis, and company mission statements are studied. Students work on business plan projects related to their vocational fields, or a field of their choice.

***Sophomore Seminar***

Sophomore Seminar provides Blackstone Valley Tech students with lecture hall experience. The seminar series provides help and support to core academic subjects and vocational goals. Seminar incorporates 21<sup>st</sup> Century Skills into the presentations and activities. Sophomores are challenged to think critically about current social and economic issues. Students practice interpersonal communication skills during their activity sessions. Speakers, including outside experts, address relevant and timely issues to large groups of students in the BVT Competition Center. Seminar also takes advantage of the large group setting by including hands-on activities, such as business networking and team building, to foster collaboration and creativity.

***Technical Competency***

In this business course sophomores continue the presentation software work started in freshman year, and are then introduced to spreadsheets. For business presentations, students learn to use Microsoft PowerPoint in order to communicate effectively with an audience. For spreadsheets, students are introduced to spreadsheet software, including formulas, charts and database applications. Students apply their technical skills through assigned projects and computer lab demonstrations, and through the use of online communication and collaboration tools.

***Employability***

Students develop an awareness of how personal and environmental conditions impact post-graduation planning. Post-graduation plans will be scrutinized in relation to aptitudes, values, interests and other relevant personal circumstances. Workplace ethics and positive work behaviors are stressed. Students further define their Career Plans and implement plans of action related to goals set forth in the plan (e.g. college visitations, internship experiences and preparation for Co-op). The Career Plan is reviewed and updated annually by the student, parent/guardian, and faculty through Employability.

***Management & Entrepreneurship***

This business course builds on the management and entrepreneurship skills learned in Grade 10. Topics include marketing of the student's business plan, in collaboration with the student's technical competency classes, along with an introduction to human resource management for their business. Students learn how to become good managers while reviewing case studies on current managers of small businesses and large companies. Students work on management projects related to their vocational fields.

***Junior Seminar***

Junior Seminar provides Blackstone Valley Tech students with lecture hall experience. The seminar series provides help and support to core academic subjects and vocational goals. Seminar incorporates 21<sup>st</sup> Century Skills into the presentations and activities. Juniors are challenged to think critically about current social and economic issues. Students practice interpersonal communication skills during their activity sessions. Speakers, including outside experts, address relevant and timely issues to large groups of students in the BVT Competition Center. Seminar also takes advantage of the large group setting by including hands-on activities, such as business networking and team building, to foster collaboration and creativity.

***Technical Competency***

In this business course students further their management and entrepreneurship studies with an introduction to marketing. Students use a number of computer software applications to develop a strategic, promotional campaign. The marketing campaigns are designed for a business of choice, and projects may include stationery, print and electronic advertisements, multi-media presentations, audio-visual work, or web pages. Typical marketing collateral includes: logo, business card, letterhead, envelope, newspaper ad, brochure, web site, radio ad, video clip, invoice, catalog, podcast, or billboard. Projects may be done individually, or on a team basis employing collaboration software tools.

***Employability***

Students work to finalize post-graduation plans while developing awareness of how life-long learning is necessary to maximize workplace opportunities and earning potential. School Counselors provide avenues for exposure to post secondary opportunities. Students will be assisted in implementing initial steps in their Career Plan (e.g. College and/or job application process). Students will explore the topics of personal and psychological well being and applying personal ethics in all settings.

***Management & Entrepreneurship***

This business course builds on the management and entrepreneurship skills learned in Grade 11. Topics include risk management, philanthropy; and the importance of sustainability as it pertains to operating a business. Extended human resource management topics, review of company financial documents and global entrepreneurship topics are covered. Students work on entrepreneurial research projects related to their vocational fields.

***Senior Seminar***

Senior Seminar provides Blackstone Valley Tech students with lecture hall experience. The seminar series provides help and support to core academic subjects and vocational goals. Seminar incorporates 21<sup>st</sup> Century Skills into the presentations and activities. Seniors are challenged to think critically about current social and economic issues. Students practice interpersonal communication skills during their activity sessions. Speakers, including outside experts, address relevant and timely issues to large groups of students in the BVT Competition Center. Seminar also takes advantage of the large group setting by including hands-on activities, such as business networking and team building, to foster collaboration and creativity.

***Technical Competency***

Seniors complete a capstone project using BVT computer lab resources. This project reflects student achievements and accomplishments through four years of education at Blackstone Valley Tech. These projects may be in conjunction with their vocational portfolios in order to meet their portfolio requirement for graduation. Senior projects may also support college applications, college portfolio requirements, or a number of other school related or work force activities. Projects may be done as hard copy or electronically. Formats include print media, video, Web, digital stories and presentation software.

## *Elective Course Offerings*

*Electives are offered to supplement a student's core academic and technical studies at Valley Tech. NOTE: Some Electives may not run during a given school year due to student interest and/or teacher availability.*

**161**    ***Art 9*** Credits: 1    Level: 3

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### **Introduction to Visual Art**

Students will acquire a basic foundation in understanding and producing original works of art through applying the elements and principles of art and design. Students work on a combination of two-dimensional and three-dimensional projects applying basic art theory concerning aesthetics and conceptualism. Introductions to artists and designers who work in the fields of fine art, environmental art, installation art, artisanry, photography and film provide a broad exposure to the Visual Arts.

**162**    ***Art 10*** Credits: 1    Level: 3

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### **Two-Dimensional Art**

Students will explore conceptual projects through techniques learned in graphite and charcoal drawing: colored pencil rendering, pen and ink illustration, acrylic painting, watercolor painting and ink painting: collage and cut-paper work. Projects will highlight the elements of line, shape, color, space, texture, and value in relationship to compositional study. In addition, students will be exposed to contemporary artists that focus on the genre of two-dimensional art and design.

**163**    ***Art 11*** Credits: 1    Level: 3

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### **Three-Dimensional Art**

Students explore various conceptual projects through techniques learned in sculpture and mixed-media by examining space, volume, mass, plane and line. The principles of art and design are interwoven into each assignment. Materials used include wire, clay, chipboard, Bristol board, recycled materials, paper maché and plaster wrap. Projects highlight process, problem solving and critical thinking skills. In addition, students are exposed to contemporary artists and designers that focus on the genre of three-dimensional art and design.

**164**    ***Art 12*** Credits: 1    Level: 3

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### **Art History**

Students explore a variety of influential periods of art through historical study and related projects. Students learn about diverse cultures and classical masters to gain an appreciation for how these classified periods of creative history link to today's understanding of art and design.

**Music Appreciation I**

The primary purpose of this course is to increase the student's knowledge and enjoyment of music. Specifically, this course should help the student critically listen to and develop an enjoyment of extraordinary music, develop an understanding of the most significant composers and renowned musicians and develop the skills needed to fully appreciate the participation and contribution of acclaimed music to the overall history of Western culture. These goals will be achieved by studying the history of music and key composers and musicians of the past 1500 years, the study of music theory, listening to a wide variety of musical styles, and watching live performances. Students will also be exposed to complex music theory and will have access to music composition software and learn to create their own music.

**Music Appreciation II**

Although this course is a continuation of Music Appreciation I, it can be fully enjoyed by students who have not taken Music Appreciation 1. Students will have access to music composition software and learn to create their own music. In addition, students will take a deeper look into the characteristics of music of the Middle Ages, the Renaissance, and Baroque, Classical and Romantic music, and the lives of key composers, and students will begin to see how the music of those time periods have influenced popular music of the 20<sup>th</sup> and 21<sup>st</sup> century.

**Introduction to Modern American Popular Music**

This course is open to any student who enjoys popular American music. Students will listen to and critique popular music of the 20<sup>th</sup> century. The course takes an in depth look and the music that has influenced today's popular music by studying the history, foundations and key musicians of many different styles and types of music. Genres such as Jazz, the Blues, Heavy Metal and Country will be covered. The important social, political and cultural elements of popular music will be studied, analyzed and discussed, as well as how certain historical events made an impact on pop music.

**Musical Expression**

This course is designed to provide seniors with or without a musical background, a chance to study the important fundamentals of music, aside from music theory and history. Students will take a deeper look into song lyrics and structure, and focus mainly on critical listening and reflection. Students are encouraged to use music in an expressive way, and asked to share their opinions and feelings, and participate in discussions on controversial issues. Students will be required to communicate to their peers how they use music to express themselves and will take an in depth look on what music means to them, and how music plays a part in their everyday lives.

- 171**     ***Writer's Voice***     Credits: 1     Level: 3
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- This class will provide a vehicle for students to learn to shape facts, theory, beliefs, and opinion into cogent, compelling communications. Through journaling, reading, class discussions, and group work, students will investigate different styles and forms of writing that provide a range of models for approaching thinking, writing, and speaking. Emphasis will be on learning to refine thinking and discovering one's own voice through editing, rewriting, and publishing.
- 172**     ***Vision and Revision***     Credits: 1     Level: 3
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- This course is designed to help develop one's writing voice utilizing description, narration, and exposition. Students will expand their writing styles through critical thinking and the logical development of ideas. The course includes keeping journals, the critical analysis of informal essays, individual student conferences and a variety of assignments designed to improve the student's ability to communicate in writing.
- 173**     ***College Bound Writing***     Credits: 1     Level: 3
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- This class will provide students with an opportunity to improve upon writing efforts relative to college admission and completion. This course will address aspects of college admission such as preparation for the SAT I verbal and essay sections, college application essays and narratives, expanding college level vocabulary, refining resumes for college admission, and improving reflective entries and personal narratives within the student's portfolio. The course will also help students make a smooth transition to college by introducing them to many elements of rhetoric and style typically taught in college freshman writing seminars.
- 174**     ***Workplace Writing***     Credits: 1     Level: 3
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- This course is designed to help develop one's practical and informational writing skills for the workplace. These non-fictional topics include writing instruction and conventions in the areas of concise instructions, invoices, business letters and memorandums, email, online media, personal marketing and branding, and refining resumes for job attainment. This course is ideal for students who are bound for the workforce and is also beneficial for those pursuing post-high school educations.

**570**     ***World Cultures***     Credits: 1     Level: 3

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This course examines the history and culture of Spanish speaking countries, specifically Spain, Central & South America and the Caribbean. Students will delve into the geography, history, food, music, dance, literature and modern culture of countries in these regions. Students should expect to keep an open mind as they learn about a world much different from their own. Students will read novels written by Latin American and Spanish authors, listen to music, try different foods, work on culture projects and even communicate with students from these countries.

**406**     ***Current Events***     Credits: 1     Level: 3

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This course investigates events of recent history and what is happening in the world today. With an increased awareness of current events comes a better understanding of world affairs as well as national and state government issues. The fundamental focus of this course is to prompt and encourage the habit of following current events with particular attention to the value of the internet, newspapers, news magazines and broadcast media. Students will have an opportunity to discuss and present their views on global topics. Students should expect to become more responsible and knowledgeable consumers of news information and opinion.

**266**     ***Accelerated Algebra II***     Credits: 1     Level: 3

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*Prerequisite: Successful completion of College Prep Algebra I with a grade of 90 or better and teacher recommendation.*

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*This course prepares students for a successful transition to Algebra II or Pre-Calculus.*

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This accelerated supplemental course is designed for students who showed above average achievement in College Prep Algebra I and who would like the opportunity to elect the Honors pathway by obtaining the skills necessary to be prepared for Honors Pre-Calculus their junior year. This course places emphasis on the art of problem solving as it expands upon the topics developed in Algebra I. The topics of study include functions, linear systems, rational expressions, radical and complex numbers, and conic sections. Applications include problems relating to the students' technical areas and everyday life. Please note that this is not a core math course, rather a preparatory elective.

**331**     ***Intro to Auto CAD***     Credits: 1     Level: 3

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*This course is not open to students in the Drafting and Engineering Technology shop.*

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This is an introductory course that focuses on the basic skills required to create and edit drawings with CAD software. Students are introduced to 2-dimensional and 3-dimensional software packages commonly used in industry. This is a hands-on project-based class focused on reading and understanding detailed drawings (blueprints) and Drafting and Engineering Technology terminology. Projects consist of creating, editing, and dimensioning drawings of a mechanical and architectural nature.

**261**     **MCAS Math I**     Credits: 1     Level: 4

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*Prerequisite: Teacher recommendation*

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This course is offered to freshmen, whose math skills are significantly below grade level, as a supplement to their core math course. The focus of MCAS Math I is to improve students' basic math skills. Topics include, but are not limited to, order of operations, fractions, decimals, percents, ratios, proportions, measurement and coordinate geometry.

**262**     **MCAS Math II**     Credits: 1     Level: 4

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*Prerequisite: Teacher recommendation*

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This course is offered to sophomores, whose math skills are significantly below grade level, as a supplement to their core math course. The focus of MCAS Math II is to review and reinforce concepts developed in Algebra I Part I and Geometry. Emphasis in this course is based specifically on topics presented in the Massachusetts Curriculum Framework and on the MCAS, such as number sense, patterns, algebra, geometry, measurement, statistics, and probability. Test taking strategies and techniques are presented and practiced by completing previous MCAS test questions on a topic by topic basis. Upon completion of this course students are better prepared to take the MCAS exam.

**263**     **MCAS Math III**     Credits: 1     Level: 4

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*Prerequisite: Teacher recommendation*

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This course is offered to juniors who scored less than Proficient on the MCAS math exam. It is a supplement to their core math course. The focus of MCAS Math III is to review and reinforce concepts developed in Algebra I Part I and Geometry. Emphasis in this course is based specifically on topics presented in the Massachusetts Curriculum Framework and on the MCAS, such as number sense, patterns, algebra, geometry, measurement, statistics, and probability. Test taking strategies and techniques are presented and practiced by completing previous MCAS test questions on a topic by topic basis. The objective of this course is to better prepare students to take the MCAS Retest or the MCAS EPP Test.

**264**     **MCAS Math IV**     Credits: 1     Level: 4

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*Prerequisite: Teacher recommendation*

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This course is offered to seniors who scored less than Proficient on the MCAS math exam. It is a supplement to their core math course. The focus of MCAS Math IV is to review and reinforce concepts developed in Algebra I Part I and Geometry. Emphasis in this course is based specifically on topics presented in the Massachusetts Curriculum Framework and on the MCAS, such as number sense, patterns, algebra, geometry, measurement, statistics, and probability. Test taking strategies and techniques are presented and practiced by completing previous MCAS test questions on a topic by topic basis. The objective of this course is to better prepare students to take the MCAS Retest or the MCAS EPP Test.

- 501** *Spanish I* Credits: 1 Level: 3  

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This is an introductory course in the Spanish instructional sequence. Listening, speaking, reading and writing will be introduced through a variety of activities, materials, evaluations and the use of technology. Selected topics of vocabulary and grammar lead to a novice level of communication, comparison, and cultural to the Spanish-speaking world. This course is closed to heritage and native Spanish speakers.
- 503** *Spanish II* Credits: 1 Level: 3  

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*Prerequisites: Successful completion of Spanish I at the high school level or determined by placement exam.*  

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This course is a continuation of Spanish I, with a complete review of the grammar taught during Spanish I as well as further introduction of new grammatical structures and tenses. Students will participate in dialogues and class discussion in order to increase their oral proficiency and comprehension of Spanish. Emphasis will be placed on the basic language skills of reading, listening, speaking and writing. This course is closed to heritage and native Spanish speakers.
- 506** *Spanish III* Credits: 1 Level: 3  

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*Prerequisites: Successful completion of Spanish I, II and III is highly recommended. Teacher's recommendation must be considered for placement at this level.*  

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This course is offered to students who wish to continue beyond the two introductory years. Spanish III includes a comprehensive review of grammar taught in Spanish I and II. Advanced grammatical structures are introduced. Students learn the basic concepts of Spanish using an aural-lingual-visual method to attain a level of communication competency and proficiency in each of the four language skills: listening, speaking, reading, and writing. Intermediate authentic text and media resources are used. Students will be accountable for readings and presentations in Spanish as well as intermediate Spanish dialogue presented throughout the year. The teacher uses Spanish almost exclusively in class and encourages students to do likewise.
- 508** *Spanish IV* Credits: 1 Level: 3  

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*Prerequisites: Successful completion of Spanish I, II and III is highly recommended. Teacher's recommendation must be considered for placement at this level.*  

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Spanish IV includes a comprehensive review of grammar taught in Spanish III. Advanced grammatical structures continue to be introduced, and reviewed with emphasis on the active application of the language with a goal of aural, oral, and written proficiency. Intermediate/advanced authentic text and media resources will be used. Students will be accountable for readings and presentations in Spanish. Hispanic history and culture will be further examined through the study of history, literature, art, music and current events. The teacher uses Spanish almost exclusively in class and encourages students to do likewise.

**631**    ***Principles of Engineering***

Credits: 1    Level: 3

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*Prerequisite: Teacher recommendation.*

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This course is designed to facilitate student understanding of the field of engineering and engineering technology as well as the fundamentals of digital electronics. Students will develop engineering problem solving skills that are typically found in post-secondary education programs and engineering careers as they explore various engineering systems and manufacturing processes. Students will also learn how to develop basic electronic circuits using logic and trouble-shooting techniques. Much of the course time is spent completing mechanical and electronic projects designed to enhance student understanding of strategic engineering concepts. In addition, students will learn how engineers address concerns about the social and political consequences of technological change.

**633**    ***Engineering Design and Development***

Credits: 1    Level: 3

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*Prerequisite: Successful completion of Principles of Engineering and Digital Electronics courses and teacher recommendation.*

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This is a research course that requires students to formulate the solution to an open-ended engineering question. With a teacher mentor and skills gained in their previous courses, students create written reports on their applications, defend the reports, and submit them to a panel of outside reviewers at the end of the school year.

- 950**     ***Reading***     Credits: 1     Level: 4  

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This course is designed as a supplemental reading class where the focus is on process. Emphasis is placed on strengthening comprehension and fluency. The course employs a variety of reading materials and classroom experiences along with individualized instruction in the computer reading lab. Additional emphasis is placed on organizing information via the writing process. During freshman and sophomore special emphasis is placed on MCAS preparedness.
- 951**     ***Wilson Reading***     Credits: 1     Level: 4  

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The Wilson Reading Program directly and systematically teaches students to fluently and accurately decode. The instruction is very interactive and multi-sensory. It also thoroughly teaches, “total word construction,” not just phonics. Students learn to encode (spell) as they learn to decode. The Wilson Reading System teaches word construction according to six types of syllables. These syllable types are gradually taught to the student. Comprehension is strengthened using a variety of reading materials along with individualized instruction in the computer reading lab. Depending on the needs of the student, this program is delivered in several models: one-on-one, small group, JUSTWORDS.
- 960**     ***Study Strategies***     Credits: 1     Level: 4  

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*Enrollment in this course requires IEP team recommendation*  

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Study Strategies focuses upon developing a student's ability to absorb, process, and apply new information. Daily lessons emphasize the acquisition and application of study and organizational strategies (e.g. use of assignment notebooks, notebook organization for subject classes, time management skills, etc.). Students develop an understanding of personal learning strengths and weaknesses. A portion of each class is designated to course work to assist students with the authentic application of skills taught. Grades are based upon daily assignments and projects.
- 981**     ***ESL I***     Credits: 1     Level: 4  

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*Students are placed in this course based on the ESL Coordinator's recommendation*  

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This course focuses on mastering listening, speaking, reading, and writing both vocabulary and sentence forms at the Beginning and Early Intermediate levels of the Massachusetts English Language Proficiency Standards. This course emphasizes guided language practice and gradual release of responsibility (I do it, we do it, you do it) based on functions (a purpose for communication). Written and spoken vocabulary expands to express a developing thought process. Emphasis placed on the expansion of Basic Interpersonal Communication Skills (BICS).
- 982**     ***ESL II***     Credits: 1     Level: 4  

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*Students are placed in this course based on the ESL Coordinator's recommendation*  

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This course focuses on mastering listening, speaking, reading, and writing vocabulary, sentence forms, and paragraphs at the Early Intermediate and Intermediate levels of the Massachusetts English Language Proficiency Standards. Students learn reading strategies in order to advance their reading skills. They expand oral comprehension and write complete sentences and standard paragraphs. They utilize the conventions of grammar and punctuation with a minimum of errors. Written and spoken vocabulary expands to express a developing thought process. Emphasis placed on the transition between Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language (CALP).

**983**     ***ESL III***     Credits: 1     Level: 4

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*Students are placed in this course based on the ESL Coordinator's recommendation*

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This course focuses on mastering listening, speaking, reading, and writing vocabulary, sentence forms, paragraphs, and essays at the Intermediate and Early Advanced levels of the Massachusetts English Language Proficiency Standards. It focuses on syntax, continued vocabulary development, reading, and writing multiple-paragraph compositions that demonstrate organization of ideas, use of a thesis statement, and supportive elements. Written and spoken vocabulary expands to express a developing thought process. Emphasis placed on the expansion of Cognitive Academic Language (CALP).

**984**     ***ESL IV***     Credits: 1     Level: 4

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*Students are placed in this course based on the ESL Coordinator's recommendation*

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This course focuses on mastering listening, speaking, reading, and writing vocabulary, sentence forms, paragraphs, and essays at the Early Advanced and Advanced levels of the Massachusetts English Language Proficiency Standards. Students learn how to use strong vocabulary, grammar, and communication skills more consciously and effectively for academic purposes. This course is similar to a mainstream English course in that students analyze American literature and write multi-draft essays of various forms. Students give oral presentations and also learn to identify and take notes on lectures. Emphasis placed on the expansion and improvement of Cognitive Academic Language (CALP).

**985**     ***ESL V***     Credits: 1     Level: 4

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*Students are placed in this course based on the ESL Coordinator's recommendation*

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This course focuses on mastering listening, speaking, reading, and writing vocabulary, sentence forms, paragraphs, and essays at the Advanced levels of the Massachusetts English Language Proficiency Standards. Students learn how to use strong vocabulary, grammar, and communication skills more consciously and effectively for academic purposes. Students give oral presentations and also learn to identify and take notes on lectures. Emphasis placed on the expansion and improvement of Cognitive Academic Language (CALP).

## Vocational-Technical Programs

Auto Body		Automotive Technology	
0310	Auto Body Exploratory	0320	Auto Tech Exploratory
0311	Auto Body 9 Shop	0321	Auto Tech 9 Shop
3101	Auto Body 9 Related	3201	Auto Tech 9 Related
0312	Auto Body 10 Shop	0322	Auto Tech 10 Shop
3102	Auto Body 10 Related	3202	Auto Tech 10 Related
0313	Auto Body 11 Shop	0323	Auto Tech 11 Shop
3103	Auto Body 11 Related	3203	Auto Tech 11 Related
0314	Auto Body 12 Shop	0324	Auto Tech 12 Shop
3104	Auto Body 12 Related	3204	Auto Tech 12 Related
Business Technology		Construction Technology	
0480	Business Tech Exploratory	3300	Construction Technology Exploratory
0481	Business Tech 9 Shop	0331	Construction Technology 9 Shop
4801	Business Tech 9 Related	3301	Construction Technology 9 Related
0482	Business Tech 10 Shop	0332	Construction Technology 10 Shop
4802	Business Tech 10 Related	3302	Construction Technology 10 Related
0483	Business Tech 11 Shop	0333	Construction Technology 11 Shop
4803	Business Tech 11 Related	3303	Construction Technology 11 Related
0484	Business Tech 12 Shop	0334	Construction Technology 12 Shop
4804	Business Tech 12 Related	3304	Construction Technology 12 Related
Cosmetology		Culinary Arts	
0210	Cosmetology Exploratory	0450	Culinary Arts Exploratory
0211	Cosmetology 9 Shop	0451	Culinary Arts 9 Shop
2101	Cosmetology 9 Related	4501	Culinary Arts 9 Related
0212	Cosmetology 10 Shop	0452	Culinary Arts 10 Shop
2102	Cosmetology 10 Related	4502	Culinary Arts 10 Related
0213	Cosmetology 11 Shop	0453	Culinary Arts 11 Shop
2103	Cosmetology 11 Related	4503	Culinary Arts 11 Related
0214	Cosmetology 12 Shop	0454	Culinary Arts 12 Shop
2104	Cosmetology 12 Related	4504	Culinary Arts 12 Related

<b>Dental Assisting</b>		<b>Drafting and Engineering Technology</b>	
0220	Dental Assisting Exploratory	0340	Drafting and Engineering Technology Exploratory
0221	Dental Assisting 9 Shop	0341	Drafting and Engineering Technology 9 Shop
2201	Dental Assisting 9 Related	3401	Drafting and Engineering Technology 9 Related
0222	Dental Assisting 10 Shop	0342	Drafting and Engineering Technology 10 Shop
2202	Dental Assisting 10 Related	3402	Drafting and Engineering Technology 10 Related
0223	Dental Assisting 11 Shop	0343	Drafting and Engineering Technology 11 Shop
2203	Dental Assisting 11 Related	3403	Drafting and Engineering Technology 11 Related
0224	Dental Assisting 12 Shop	0344	Drafting and Engineering Technology 12 Shop
2204	Dental Assisting 12 Related	3404	Drafting and Engineering Technology 12 Related

<b>Electrical</b>		<b>Electronics and Engineering Technology</b>	
0410	Electrical Exploratory	0350	Electronics and Engineering Technology Exploratory
0411	Electrical 9 Shop	0351	Electronics and Engineering Technology 9 Shop
4101	Electrical 9 Related	3501	Electronics and Engineering Technology 9 Related
0412	Electrical 10 Shop	0352	Electronics and Engineering Technology 10 Shop
4102	Electrical 10 Related	3502	Electronics and Engineering Technology 10 Related
0413	Electrical 11 Shop	0353	Electronics and Engineering Technology 11 Shop
4103	Electrical 11 Related	3503	Electronics and Engineering Technology 11 Related
0414	Electrical 12 Shop	0354	Electronics and Engineering Technology 12 Shop
4104	Electrical 12 Related	3504	Electronics and Engineering Technology 12 Related

<b>Graphic Communications</b>		<b>Health Services</b>	
0420	Graphic Communications Exploratory	0490	Health Services Exploratory
0421	Graphic Communications 9 Shop	0491	Health Services 9 Shop
4201	Graphic Communications 9 Related	4901	Health Services 9 Related
0422	Graphic Communications 10 Shop	0492	Health Services 10 Shop
4202	Graphic Communications 10 Related	4902	Health Services 10 Related
0423	Graphic Communications 11 Shop	0493	Health Services 11 Shop
4203	Graphic Communications 11 Related	4903	Health Services 11 Related
0424	Graphic Communications 12 Shop	0494	Health Services 12 Shop
4204	Graphic Communications 12 Related	4904	Health Services 12 Related

<b>HVAC/R</b>		<b>Information Technology</b>	
0440	HVAC/R Exploratory	0230	Information Tech Exploratory
0441	HVAC/R 9 Shop	0231	Information Tech 9 Shop
4401	HVAC/R Related	2301	Information Tech 9 Related
0442	HVAC/R 10 Shop	0232	Information Tech 10 Shop
4402	HVAC/R 10 Related	2302	Information Tech 10 Related
0443	HVAC/R 11 Shop	0233	Information Tech 11 Shop
4403	HVAC/R 11 Related	2303	Information Tech 11 Related
0444	HVAC/R 12 Shop	0234	Information Tech 12 Shop
4404	HVAC/R 12 Related	2304	Information Tech 12 Related

<b>Manufacturing and Engineering Technology</b>		<b>Painting &amp; Design Technology</b>	
0360	Manufacturing and Engineering Technology Exploratory	0460	Painting & Design Tech
0361	Manufacturing and Engineering Technology 9 Shop	0461	Painting & Design Tech 9 Shop
3601	Manufacturing and Engineering Technology 9 Related	4601	Painting & Design Tech 9 Related
0362	Manufacturing and Engineering Technology 10 Shop	0462	Painting & Design Tech 10 Shop
3602	Manufacturing and Engineering Technology 10 Related	4602	Painting & Design Tech 10
0363	Manufacturing and Engineering Technology 11 Shop	0463	Painting & Design Tech 11 Shop
3603	Manufacturing and Engineering Technology 11 Related	4603	Painting & Design Tech 11
0364	Manufacturing and Engineering Technology 12 Shop	0464	Painting & Design Tech 12 Shop
3604	Manufacturing and Engineering Technology 12 Related	4604	Painting & Design Tech 12

<b>Plumbing</b>	
0430	Plumbing Exploratory
0431	Plumbing 9 Shop
4301	Plumbing 9 Related
0432	Plumbing 10 Shop
4302	Plumbing 10 Related
0433	Plumbing 11 Shop
4303	Plumbing 11 Related
0434	Plumbing 12 Shop
4304	Plumbing 12 Related

The curriculum for Blackstone Valley Tech approved Chapter 74 Career Vocational Technical Education (CVTE) programs, is developed, aligned and revised based on the current Massachusetts CVTE Frameworks. Vocational instruction is designed utilizing the Massachusetts Framework strands, competencies and tasks, as well as local, state, and national licensing and certification requirements. Valuable industry input is derived from the Program Advisory Committees, the General Advisory Committee and subject matter experts in each area of instruction.

## ***Auto Body***

### **0310 *Auto Body Exploratory***

The program is an intensive one-week introduction in basic auto body panel straightening and repair on actual auto body panels and painting procedures, which includes students Refinishing an actual auto body panel in a base coat / clear coat refinish process . Related theory focuses on the general topics of shop safety and career potential in the collision repair industry.

### **0311 *Auto Body 9th Grade Shop***

Credits: 8    Level: 3

Students are introduced to basic vehicle construction, basic hand tools used for repair, paint and surface preparation, vehicle detailing, and the use of trade materials such as plastic fillers, masking supplies, abrasives, and solvents. Safety is an important issue and is stressed throughout the 4-year program.

### **3101 *Auto Body 9th Grade Related***

Credits: 1    Level: 3

This two-trimester course examines auto detailing (washing and cleaning of vehicles), surface preparation, masking, hand sanding techniques, respirator safety, general hand tools, hand and power tools used in collision repair, introduction to spray guns, undercoats (primers), small dent repair (plastic fillers), basic body construction and measuring. Reading, writing, and math assignments are integrated with auto body theory.

### **0312 *Auto Body 10th Grade Shop***

Credits: 8    Level: 3

Auto Body basics are expanded to include use of pneumatic and electric tools, compressed air supply equipment, sheet metal work, paint and primer mixing ratios and applications, trim installation and removal, torquing procedures, small dent repair, panel replacement and adjustment, and lifting and jacking. Safety and quality of workmanship are stressed.

### **3102 *Auto Body 10th Grade Related***

Credits: 1    Level: 3

This course reviews the freshmen third trimester, refinishing equipment, refinishing procedures and materials, basic sheet metal repair, polishing and compounding, welding basics (gas), basic MIG welding, cosmetic panel replacement, wheels and tires, fasteners, exterior molding and trim, and lifting and jacking. Reading, writing, and math assignments related to the auto body profession are integrated with academic frameworks during this class.

- 0313**    ***Auto Body 11th Grade Shop***    Credits:8    Level: 3  
Juniors fine-tune previously acquired skills. Instruction includes welding and cutting equipment and procedures, overall paint application including color and clear topcoats, body and frame straightening procedures, and automotive plastics. Juniors learn to diagnose each vehicle's unique collision damage and perform appropriate repair procedures.
- 3103**    ***Auto Body 11th Grade Related***    Credits: 1    Level: 3  
Students study interior repair, glass replacement, fiberglass panel repair, plastic panel repair and refinish procedures, structural panel replacement, wheels and tires, fasteners, and exterior molding and trim. Reading, writing, and math assignments related to the auto body profession are integrated with academic frameworks in this class.
- 0314**    ***Auto Body 12th Grade Shop***    Credits: 8    Level: 3  
In addition to using previously acquired skills, seniors specialize in analyzing and repairing frame damage. Damage repair and refinishing skills are mastered. Mentoring of underclassmen, business and managerial concepts, such as damage estimating, part and material ordering, and customer interaction are introduced. Eligible seniors may participate in the co-op program.
- 3104**    ***Auto Body 12th Grade Related***    Credits: 1    Level: 3  
This course examines vehicle structural repair, analyzing and gauging frame damage, and Advanced refinishing procedures, suspension systems, and basic electro/mechanical systems. Research as well as reading, writing, and math assignments related to the auto body profession are integrated with academic frameworks during this class.

## *Automotive Technology*

### **0320**    *Auto Technology Exploratory*

This one-week program provides the 9th grade student with instruction in basic maintenance of vehicles. Students will perform fluid level checks, oil and filter changing and record information on a vehicle checklist. Students will be taught service information lookup procedures and recording of specifications, jacking procedures, and if time allows, tire mounting and balancing. A visit to two local automobile dealerships highlighting the service, parts and sales departments with a chance to talk to service personnel is also included. Students receive instruction in shop operational procedures, personal and shop safety, and tool usage. Instructional delivery includes presentations, demonstrations and hands-on performance.

### **0321**    *Auto Technology 9<sup>th</sup> Grade Shop*

Credits: 8    Level: 3

This two-trimester course provides students with the basic knowledge and skill training necessary for continued success in the Automotive Technology program. Students receive instruction in career opportunities, tire service, preventative maintenance, brake system service, and basic engine construction and design. Instructional delivery includes presentations, demonstrations and hands-on performance testing in the areas of shop operation, tire inspection, identification, balance and repair, inspection, identification and repair of disc/drum brake systems. Instruction is augmented by the assigning of three homework assignments most weeks and assessment tests twice per week.

### **3201**    *Auto Technology 9th Grade Related*

Credits: 1    Level: 3

This two-trimester course provides students with the technical knowledge necessary for success in the Automotive Technology program. Students receive instruction in engine and chassis lubrication under different service conditions. The automobile fuel, cooling, and electrical systems, the principles of braking, friction, pressure, heat dissipation and hydraulic system operation, tire construction, design, and replacement procedures are also studied. Instructional delivery includes the use of instructor led presentations, reading and writing assignments, classroom demonstrations, and media presentations. Reading, writing, and math assignments related to the automotive industry are an integral part of this class. Instruction is augmented by the assigning of three homework assignments most weeks and assessment tests twice per week.

### **0322**    *Auto Technology 10<sup>th</sup> Grade Shop*

Credits: 8    Level: 3

This course provides students with the knowledge and skill training necessary for continued success in the Automotive Technology program. Students receive instruction and hands-on training in steering/suspension fundamentals and service, wheel alignment fundamentals and service, basic electrical/electronic theory and operation, ignition and fuel system theory and operation. Instructional delivery includes presentations, demonstrations, computer based instruction and hands-on performance testing... Instruction is augmented by the assigning of three homework assignments most weeks and assessment tests each week.

### **3202**    *Auto Technology 10<sup>th</sup> Grade Related*

Credits: 1    Level: 3

This course provides students with the technical knowledge necessary for continued success in the Automotive Technology program. Students receive instruction in steering and suspension geometry, performance of pre-alignment checks and 4-wheel alignment, fundamentals of electrical principles, use of DVOM, Ohm's Law, basic circuit design, testing and repair of batteries, starters, alternators and their related circuits. Testing and diagnosis procedures are taught on cooling fan, blower controls, lighting, power window and seat circuits. Instructional delivery includes presentations, reading and writing assignments, computer based instruction, classroom demonstrations and visual media presentations. Reading, writing, and math assignments related to the automotive profession are integrated with academic frameworks during this class. Instruction is augmented by the assigning of three homework assignments most weeks and assessment tests twice per week.

**0323**    ***Auto Technology 11th Grade Shop***    Credits: 8    Level: 3

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This course provides students with the knowledge and skill training necessary for continued success in the Automotive Technology program. Students receive instruction and hands-on training in service and repair of the manual transmission/transaxle. Testing and repair of automatic transmission/transaxle, diagnosis and repair of clutch systems, differentials, and drive line components. Instruction is also provided in the area of engine operation, disassembly, measurement and repair. Instructional delivery includes presentations, demonstrations, and hands-on performance testing. Instruction is augmented by the assigning of three homework assignments most weeks and assessment tests twice per week.

**3203**    ***Auto Technology 11<sup>th</sup> Grade Related***    Credits: 1    Level: 3

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This course provides students with the technical knowledge and skill training necessary for continued success in the Automotive Technology programs. Students receive instruction and hands-on training in service and repair of the manual transmission/transaxle. Instruction is also provided in the area of engine operational theory, disassembly, inspection and measurement. Instructional delivery includes presentations, demonstrations, and the use of visual media. Reading, writing, and math assignments related to the automotive profession are integrated with academic frameworks during this class. Instruction is augmented by the assigning of three homework assignments most weeks and assessment tests twice per week.

**0304**    ***Auto Technology 12<sup>th</sup> Grade Shop***    Credits: 8    Level: 3

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This course provides students with the technical knowledge and skill training necessary for continued success in the Automotive Technology program. Students receive instruction and hands-on training in the diagnosis and repair of heating and air conditioning systems, fuel delivery systems, maintenance and service of the cooling system, maintenance and repair of engines (part 2), exhaust system inspection and service, service and testing of the emission control systems, parts, inventory, and billing procedures, instruction in the use of the ALL-DATA repair information system. Students also receive instruction and hands-on training in the proper use of scan tools and state of the art test equipment in diagnosing drivability concerns. Instructional delivery includes presentations, demonstrations, and hands-on performance testing, reading and writing assignments, shop demonstrations, and visual media presentations. Tests and performance evaluations are used to determine the student's level of mastery. Instruction is augmented by the assigning of three homework assignments most weeks and assessment tests twice per week.

**3204**    ***Auto Technology 12<sup>th</sup> Grade Related***    Credits: 1    Level: 3

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This course provides students with the technical knowledge and skill training necessary for continued success in the Automotive Technology program. Students receive instruction and hands-on training in the principles and operation of heating and air conditioning systems, fuel delivery systems, principles and operation of the cooling system, engine system diagnostics, principles and operation of the emission control system, parts, inventory, and billing procedures, and instruction in the use of the ALL-DATA repair information system. Students receive instruction and hands-on training in the principles and operation of scan tools and test equipment. Shop management skills including service writing, billing, and parts ordering are taught. Instructional delivery includes presentations, reading and writing assignments, classroom demonstrations, and visual media presentations. Reading, writing, and math assignments related to the automotive profession, are integrated with academic frameworks during this class. Instruction is augmented by the assigning of three homework assignments most weeks and assessment tests twice per week.

## ***Business Technology***

### **0480 *Business Technology Exploratory***

The focus of this exploratory course is to introduce students to the basic knowledge and skills necessary to continue in the Business Technology Program. Students experience a wide range of activities while exploring the career area of business and retail management. All activities are hands-on and are designed to allow the student to experience the world of computers, business management, advertising, and marketing.

### **0481 *Business Technology Shop 9th Grade Shop***

Credits: 8    Level: 3

The main focus of this course is to encourage students to explore the world of business and to gain skill in using a wide variety of computer applications. Students also begin their study of desktop publishing, advertising, Microsoft computer applications, accounting and finance.

### **4801 *Business Technology 9th Grade Related***

Credits: 1    Level: 3

The focus of this course is to provide an overall view of the purpose and scope of business and how it is an integral part of Business Technology. Students acquire an understanding of their role in business, the economic processes of today, the concepts of entrepreneurship and the global economy. Students also do an in-depth study of those health and safety issues which affect productivity as a worker. Through the use of realistic projects, activities, oral presentations, discussions, and case studies, the students work on in-depth problem solving, personal finance and interpersonal communication.

### **0482 *Business Technology 10th Grade Shop***

Credits: 8    Level: 3

During the sophomore year in Business Technology, students are introduced to more extensive training in accounting, data entry, spreadsheet development, and activities designed to strengthen their computer application and problem-solving skills. Students begin to develop skills in creating and showing electronic presentations on a variety of career-related topics. Also, students are actively engaged in the daily operation of the school store which aids them in the development of their advertising and customer service skills.

### **4802 *Business Technology 10th Grade Related***

Credits: 1    Level: 3

In this course students continue to expand the knowledge gained during the freshman year and to develop new skills necessary to compete in the business world of the 21<sup>st</sup> century. Through hands-on activities and supplementary resources, students acquire an understanding of their role in business and the economic processes prevalent today. Concepts relating to the business functions of marketing, accounting and management enhance student knowledge of personal finance, investments, banking, and career development. Students also engage in developing a business plan for a business of their choosing. This project is geared to help them gain an understanding for the need of setting goals, understanding the world of finance as well as marketing.

**0483**     ***Business Technology 11th Grade Shop***     Credits: 8     Level: 3

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In this course students enter an in-depth program of study designed to polish their computer skills, presentation skills, and advertising skills. Students become well-versed in desktop publishing and produce informational brochures, flyers, business cards, and menus. Web Design is introduced at this time and students are expected to develop competency in working with Adobe Dreamweaver and HTML. They continue their work in the school store, managing inventory, handling ordering, pricing, and the marketing of the store.

**4803**     ***Business Technology 11<sup>th</sup> Grade Related***     Credits: 1     Level: 3

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The focus of this course is law as it pertains to business. Students study such areas as law and justice, law of contracts, the law of property, employment law, business organizations and law and finance. The goal is to make students aware of legal issues as they pertain to the world of work and business so that they are able to make informed decisions.

**0484**     ***Business Technology 12th Grade Shop***     Credits: 8     Level: 3

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This course is designed to provide students with the opportunity to go into an actual work situation where they employ the skills learned during the previous three years. This is achieved through our cooperative program in which eligible students are employed by local businesses during their shop cycle. For students not participating in the cooperative program, the curriculum further enhances their skills using technology and business management. More in-depth study is given in the area of electronic presentation, web design, and advanced Access. Students will also be assigned in-house jobs that enable them to gain experience in working with clients.

**4804**     ***Business Technology 12<sup>th</sup> Grade Related***     Credits: 1     Level: 3

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The focus of this course is to refine the fundamental skills necessary for success in the workplace. Attention is given to mastery of written as well as oral communication skills, financial responsibility skills, and skills characteristic of reliable and competent workers. A variety of hands-on activities, writing assignments, mathematical problems and oral presentations are utilized to help students achieve the goals of the course.

## ***Construction Technology***

### **3300**    ***Construction Technology Exploratory***

This one-week course provides students with the basic knowledge and relevance of safety, estimating, and career paths in the field of construction technology. Students receive instruction in hand tools and their applications and general shop safety. Students will put in to practice what they have learned by building an assigned project. Critical thinking skills are emphasized throughout the course.

### **0331**    ***Construction Technology 9<sup>th</sup> Grade Shop***

Credits: 8    Level: 3

This is a two-trimester course, providing construction technology students with basic knowledge and relevance of shop safety. Students are introduced to blueprint reading and working from measured drawings. Students receive instruction in hand tools, hand applications, and are introduced to power tools. Critical thinking skills are emphasized throughout the course. A sawhorse project is used to review the students' progress in the general knowledge of blueprint reading and the use of hand and stationary power equipment.

### **3301**    ***Construction Technology 9<sup>th</sup> Grade Related***

Credits: 1    Level: 3

This two-term course, meeting one period per day during the shop cycle, provides students with the basic knowledge of estimating and relevance of safety as well as state and local building codes. Students receive instruction in both hand and power tool safety and application. Students are introduced to interpreting blueprints and measured drawings. Critical thinking skills are emphasized throughout the course. Reading, writing and math assignments related to construction technology theory are an integral part of this class. Throughout every phase of instruction, deliberate effort is made to acquaint students with working conditions they can expect to find on an actual job. Safety is stressed at all times.

### **0332**    ***Construction Technology 10<sup>th</sup> Grade Shop***

Credits: 8    Level: 3

This course builds on the skills students have acquired as freshmen. Students begin to interpret blueprints, learn components of platform framing and hone their hands on skills as they embark on construction of a scale model of a house. Tool and worksite safety is an integral part of the shop curriculum. Students learn estimating and are introduced to state and local building codes. Students are evaluated by their performance on individual and group projects.

### **3302**    ***Construction Technology 10<sup>th</sup> Grade Related***

Credits: 1    Level: 3

This three term course meets one period per day during the shop cycle. Students receive instruction in blueprint reading and interpreting "to scale" drawings. Tool and jobsite safety includes the use of portable power tools, and an introduction to state and local building codes, including 10 hours of Career Safe (an online course involving 65 tests). Reading, writing, and math assignments related to the construction technology profession are integrated with academic frameworks during this class. Students also learn the basics of forming and pouring concrete for residential and commercial construction.

**0333**     ***Construction Technology 11<sup>th</sup> Grade Shop***     Credits: 8     Level: 3

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This course provides the construction technology student with advanced knowledge in the areas of shop and worksite safety, estimating, and state and local building codes. Students will have the opportunity to work in two different training settings. Students rotate from working on projects within the shop to working on off-campus sites in which they will be engaged in community service construction projects within the district's 13 sending towns. The emphasis of instruction and projects is on residential house framing and finishing procedures.

**3303**     ***Construction Technology 11<sup>th</sup> Grade Related***     Credits: 1     Level: 3

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This three term course, meeting one period per day during the shop cycle, provides the construction technology student with advanced knowledge in the area of safety, estimating, and state and local building codes. The main concentration for instruction includes residential house framing. There will be a strong emphasis on interpreting blueprints as well as state and local building codes. Reading, writing, and math assignments related to the construction technology professions are integrated with academic frameworks during this class.

**0334**     ***Construction Technology 12<sup>th</sup> Grade Shop***     Credits: 8     Level: 3

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This course provides the construction technology student with advanced knowledge in the areas of safety, estimating, and state and local building codes. The goal of this course is to provide each student with the technical knowledge and experiences essential to secure employment as a carpenter and or transition to a post secondary institution. Students rotate from working on projects within the shop to working on off-campus sites within the district's 13 sending towns, engaged in community service construction projects. Students also have the option to participate in the co-op and work-study programs.

**3304**     ***Construction Technology 12<sup>th</sup> Grade Related***     Credits: 1     Level: 3

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This three term course, meeting one period per day during the shop cycle, provides construction technology students with advanced knowledge of relevance of safety and estimating, blueprint reading, as well as state and local building codes. Instruction in house planning is emphasized. Research, which includes reading, writing and math assignments related to construction technology professions, is integrated with academic frameworks during this class.

## *Cosmetology*

### **0210**    *Cosmetology Exploratory*

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This one week introduction provides the 9<sup>th</sup> grade student with an introduction to the cosmetology program. The student is introduced to safety, sanitation, life skills/communications, anatomy, color theory, hair design as well as career opportunities within the industry. Practical Instruction includes roller setting, blow drying, braiding, up-dos, manicuring, basic perm wrapping, mock highlighting, and nail art. Hands on performance testing, safety and written tests are used to determine the student's potential success in the cosmetology industry.

### **0211**    *Cosmetology 9th Grade Shop*

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Credits: 8    Level: 3

When students enter permanent placement, this course provides the student with basic knowledge and skill training necessary for success in the cosmetology industry. Students receive practical instruction on equipment safety, and sanitation. Practical work on mannequins includes draping, shampooing, rinsing, braiding, manicuring, pedicuring, wet and thermal hairstyling and introduction to make-up application. Students are graded daily on a rubric comprised of attendance, professionalism, practical tasks and clean up duties.

### **2101**    *Cosmetology 9th Grade Related*

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Credits: 1    Level: 3

Related instruction for the 9<sup>th</sup> grade student includes basic technical instruction and studies including the history of cosmetology and opportunities, life skills, professional image, infection control, anatomy & physiology, and nail structure and diseases. Instruction includes demonstrations, hands on practice, writing assignments, weekly vocabulary words, projects, portfolio work, quizzes and tests to determine competency levels.

### **0212**    *Cosmetology Shop 10th Grade Shop*

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Credits: 8    Level: 3

This course is designed to further develop the basic skills and knowledge needed for success in the cosmetology field. Practical work includes facials, make-up application, hair removal, advanced hairstyling, haircutting, and artificial nails. Students are graded daily on a rubric comprised of attendance, professionalism, practical tasks and clean up duties.

### **2102**    *Cosmetology 10th Grade Related*

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Credits: 1    Level: 3

This course is designed to further develop the comprehension of basic cosmetology theories and technical instruction. Students receive instruction in properties of the hair and scalp, principles of hair design, hairstyling, skin structure and disorders, hair removal, facials, facial make-up, chemistry and electricity, advanced nail techniques, and haircutting. Instruction includes demonstrations, hands on practice, writing assignments, weekly vocabulary words, projects, quizzes and tests to determine competency levels.

**0213**     ***Cosmetology Shop 11th Grade Shop***     Credits: 8     Level: 3

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This course is designed to give the students the opportunity to advance their knowledge and technical skills in the cosmetology program. Students receive advanced instruction in facials, make-up application, manicures, pedicures, advanced nail techniques, wet and thermal styling, haircutting, chemical texturizing, waxing, hair coloring, chemical use and precautions, foil and cap highlighting, as well as sanitation practices. Upper level students meeting state board hourly requirements will have an opportunity to provide human services in "*Salon @ BVT*" which is open to the public. Students are graded daily on a rubric comprised of attendance, professionalism, practical tasks and clean up duties.

**2103**     ***Cosmetology 11th Grade Related***     Credits: 1     Level: 3

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This course is designed to give the students the opportunity to advance their knowledge and technical skills in the cosmetology program. Students receive instruction in reception training, communication, chemical texture services, wigs, hair coloring, gel nails, state board review as well as reviews in freshman sciences and nail theory. Instruction includes demonstrations, hands on practice, writing assignments, weekly vocabulary words, projects, quizzes and tests to determine competency levels.

**0214**     ***Cosmetology Shop 12th Grade Shop***     Credits: 8     Level:3

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This course is designed to provide students with the opportunity to master their technical skills and comprehension level in the cosmetology program. Students meeting state board hourly requirements will provide human services in "*Salon @ BVT*" that is open to the public. Qualified seniors who are in good standing vocationally and academically, who have successfully passed the state board exam, can participate in our cooperative program. Students may be offered the opportunity to apprentice in a paid off-campus position. Qualified seniors will gain industry experience and an opportunity to master their knowledge and skills in a professional workplace. Students are graded daily on a rubric comprised of attendance, professionalism, practical tasks and clean up duties.

**2104**     ***Cosmetology 12th Grade Related***     Credits: 1     Level: 3

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This course is designed to prepare the student for state licensure and the professional workplace. Students receive instruction on the salon business, employability, on-the-job training, resume writing, managing money, management and entrepreneurship, state board review, as well as life skills; familiarizing the students with all aspects of the industry. After completing the Massachusetts state board hourly requirement of 1000 hours, and successfully passing the state board written and practical exam, the student will be a licensed cosmetologist. For those graduates who wish to continue their education at the college level, recommended courses of study are small business management, marketing, or other business related courses. Other educational opportunities would include advanced post-secondary training in nail techniques, aesthetics that would award a specialty license.

## *Culinary Arts*

### **0450**    *Culinary Arts Exploratory*

This one-week course provides the 9th grade student with an introduction to the food and beverage industry from four vantage points: kitchen, restaurant, cafeteria and bakeshop. The student spends time in each area learning hands-on applications. The student is introduced to safety, sanitation, personal hygiene, table settings, order taking, bakery, and basic cooking methods and basic knife skills. Instruction utilizing demonstrations, hands-on performance assessment, and written tests and quizzes are used to help determine the student's potential success in the food and beverage industry.

### **0451**    *Culinary Arts 9th Grade Shop*

Credits: 8    Level: 3

This course provides the 9th grade student with the basic knowledge and skill training necessary for continued success in the Culinary Arts program. Students receive instruction in career opportunities, shop operational procedures, personal hygiene and safety, equipment identification, basic cooking methods, introduction to table service, weights and measures, cooking temperatures, wash methods, yeast dough, knives and cuts, and chemical use and storage. Instruction utilizes presentations, demonstrations, notebook inspections, and hands-on performance tests in the above areas to determine achievement of competencies. Students are graded daily on a rubric comprised of attendance, attitude, production, safety and sanitation, and shop operation.

### **4501**    *Culinary Arts 9th Grade Related*

Credits: 1    Level: 3

This course provides the 9th grade student with the basic technical knowledge and studies in the Culinary Arts program. Students explore career opportunities, the history of culinary arts, the brigade system and its operation, utensil and equipment identification, safety and sanitation, personal hygiene, and HACCP temperatures. Instruction utilizes presentations, demonstrations, notebook inspections, hands-on performance tests, writing assignments, quizzes, and tests in the above areas to determine achievement of competencies. Reading, writing, and math assignments related to Culinary Arts theory are an integral part of this class.

### **0452**    *Culinary Arts 10th Grade Shop*

Credits: 8    Level: 3

This course provides students with further development of the basic skills and knowledge in the Culinary Arts program. Students receive instruction in cooking methods, service techniques and styles, salad and sandwich preparation, frylator, bread dough, pastry crusts, basic cake mixes, sanitation, food storage, vegetable and fruit preparation, dessert presentation, and institutional cooking. Instruction utilizes presentations, demonstrations, notebook inspections, hands-on performance tests, writing assignments, quizzes, and tests to determine achievement of competencies. Students are graded daily on a rubric comprised of attendance, attitude, production, safety and sanitation, and shop operation.

### **4502**    *Culinary Arts 10th Grade Related*

Credits: 1    Level: 3

This course provides students with further development of the basic knowledge and theory in the Culinary Arts program. Students receive instruction in cooking methods, service techniques and styles, weights and measurements, meat identification, basic sauces and their families, and customer service. Students also spend time earning their 10 hour OSHA certification card. Instruction utilizes presentations, demonstrations, notebook inspections, hands-on performance tests, writing assignments, quizzes, and tests to determine achievement of competencies. Reading, writing and math assignments are integrated with academic frameworks.

**0453 Culinary Arts 11th Grade Shop** Credits: 8 Level: 3

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This course provides students the opportunity to advance their knowledge and skills in the Culinary Arts Program. Students receive advanced instruction in broiling, baking and sauté, specialty desserts, cake icings and decorating, meat butchering, seafood portioning, soup and sauces, ordering and inspection of products, banquet service, buffet set-up and service, off-sight catering, service of large parties, and breakfast cooking. Instruction utilizes presentations, demonstrations, notebook inspections, and hands-on performance tests to determine achievement of competencies. Students are graded daily on a rubric comprised of attendance, attitude, production, safety and sanitation, and shop operation.

**4503 Culinary Arts 11th Grade Related** Credits: 1 Level: 3

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This course provides students with the opportunity to advance their knowledge in the Culinary Arts program. Students receive advanced instruction in meat and seafood identification, sauce families, restaurant reviews, booking catering functions, buffet set-up and service, introduction to menu design, and basic plate presentation. Instruction utilizes demonstrations, notebook inspections, hands-on performance tests, writing assignments, quizzes, and tests to determine achievement of competencies. Reading, writing and math assignments related to the Culinary Arts professions are integrated with academic frameworks during this class.

**0454 Culinary Arts 12th Grade Shop** Credits: 8 Level: 3

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This course provides students with the opportunity to master their knowledge and skills in the Culinary Arts program. Students receive advanced instruction in food and beverage management, operating the kitchen line, maitre d', pastry chef, handling money, problem solving, menu design, Garde manager, tableside cooking, bistro cooking and service. Students who have shown proficiency in all areas of the shop are allowed to focus their time and education in the area(s) of most interest to them. Instruction incorporates demonstrations, notebook instructions, and hands-on performance tests to determine achievement of competencies. Students are graded daily on a rubric comprised of attendance, attitude, production, safety, sanitation, and shop operation.

**4504 Culinary Arts 12th Grade Related** Credits: 1 Level: 3

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This course provides students with the opportunity to advance their knowledge and skills in the Culinary Arts program as a manager. Students receive instruction in cost controls, menu development and design, creating theme dinners, presentation, management theories, resume development, restaurant marketing, introduction to wines and wine pairings. Senior students will be required to successfully complete the National ServSafe Certification as administered by the National Restaurant Association. Instruction incorporates lectures and demonstrations. Research, which includes reading, writing and math assignments related to the culinary professions, is integrated with academic frameworks during this class. For a portion of the senior related program, students may choose to an area of focus and attend a smaller class with students of the same focus. Notebook inspections, hands-on performance tests, writing assignments, quizzes, and tests are used to determine achievement of competencies.

## *Dental Assisting*

### **0220**    *Dental Assisting Exploratory*

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This week long course introduces students to the dental assisting profession. Students are exposed to various principals of clinical, laboratory, and clerical dental assisting. This program allows students to determine whether their abilities and interests are compatible with this technical area. During this course, students explore the many career opportunities in the dental field. Shop safety and program orientation is provided.

### **0221**    *Dental Assisting 9th Grade Shop*

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Credits: 8    Level: 3

When students enter permanent placement in the Dental Assisting program, the course of study provides an orientation to the dental facility. Safety is of the utmost concern and is stressed and practiced during every year of the dental assisting program. Students receive certification from Careersafe, an online 10 hour OSHA safety course. The goal of the Careersafe program is to teach younger workers how to stay safe in the workplace. Students are introduced to infection control, dental morphology, tooth numbering systems and identification. In addition, basic chairside, laboratory and clerical procedures are taught, with an emphasis on preventative dentistry, oral hygiene instruction, nutritional counseling, and interpersonal communications. Students travel to elementary schools and daycare facilities to provide dental health education.

### **0221**    *Dental Assisting 9th Grade Related*

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Credits: 1    Level: 3

The Dental Assisting related theory instruction is intended to complement the vocational instruction and laboratory projects taught during the freshman year. The course of study provides additional instruction in the areas of dental history, the dental team, industry based professional organizations, dental specialties, communication, and administrative practices. Instruments, equipment, procedures and Dentrix software are introduced.

### **0222**    *Dental Assisting 10th Grade Shop*

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Credits: 8    Level: 3

Students review and expand upon materials previously studied. Areas of study include an introduction to dental charting, preparation for patient care, mouthguard fabrication, patient education, and dental office management. Students also receive instruction in maintaining patient records, dental instrumentation, chairside techniques, and responding to client needs. Students travel to elementary schools, daycare facilities and geriatric facilities to provide dental health education. Qualified students receive Infection Control Certification from the Dental Assisting National Board. Two year certification in adult, child and infant CPR/First Aid is attained.

**2202**     ***Dental Assisting 10th Grade Related***     Credits: 1     Level: 3

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The Dental Assisting related theory instruction is intended to complement the vocational instruction and laboratory projects taught during the sophomore year in the Dental Assisting program. Topics taught during freshman year will be built upon. In order to prepare for The Dental Assisting National Board Infection Control Certification, infection control and health and safety practices will be a large part of this year's related instruction. Students receive instruction in the areas of microbiology, anatomy and physiology, and management of hazardous materials. Reading, writing, and scientific research assignments related to infectious diseases are integrated in this course.

**0223**     ***Dental Assisting 11th Grade Shop***     Credits: 8     Level: 3

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During this year considerable instruction in the production of traditional as well as digital dental radiographs is given. Components of the dental x-ray unit, digital sensors, safety precautions, film identification, film placement using both bisecting and paralleling techniques, and film processing and mounting are all studied. Qualified students receive radiology certification from the Dental Assisting National Board. Students review and expand upon materials previously studied. Topics of study include dental materials, chairside procedures, clinical records, advanced dental laboratory procedures, dental anesthesia, and four-handed dentistry techniques. Students receive instruction in the areas of application of dental materials, restorative procedures, prosthodontic procedures, laboratory procedures, preventative measures, oral surgery, and healthcare office management procedures. Students are taught the skills necessary for externship and employment.

**2203**     ***Dental Assisting 11th Grade Related***     Credits: 1     Level: 3

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Students review and expand upon materials previously studied. Program topics include radiation health and safety, dental specialties and oral pathology. To prepare for the Dental Assisting National Board Radiation Health and Safety Certification, all aspects of dental radiography are a large part of the junior year related instruction. The Dental Assisting related theory instruction is intended to complement the vocational instruction and laboratory projects taught during the junior year in the Dental Assisting program. Head and neck anatomy, pharmacology, management of pain and anxiety, ethics and jurisprudence and employability are taught.

**0224**     ***Dental Assisting 12th Grade Shop***     Credits: 8     Level: 3

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Qualified seniors participating in the cooperative education program gain industry experience in paid positions off-campus. To participate in the cooperative program, students must meet all co-op requirements and be in good academic and vocational standing. Students may participate in a clinical affiliation with both specialty and general practice dental offices. Students receive continued instruction in the areas of dental science and business office procedures. Students travel to geriatric facilities to provide dental health education. Two year certification in adult, child and infant CPR/First Aid is attained.

**2204**     ***Dental Assisting 12th Grade Related***     Credits: 1     Level: 3

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The Dental Assisting related theory instruction is intended to complement the vocational instruction and laboratory projects taught during the senior year in the Dental Assisting program. Students review and expand upon materials previously studied. Program topics include radiation health and safety, dental specialties and oral pathology.

## ***Drafting and Engineering Technology***

### **0340 *Drafting and Engineering Technology Exploratory***

This is a one-week course that provides students with an overview of ***Computer Aided Drafting and Engineering Technology***. Students are introduced to sketching, geometric construction, orthographic projection, reproduction, solid modeling, shading/rendering, architectural floor plans, as well as careers in drafting and engineering technology. Instruction incorporates presentation, demonstration, and hands on performance testing.

### **0341 *Drafting and Engineering Technology 9th Grade Shop*** Credits: 8 Level: 3

This course provides students with an introduction to the basics of drafting and engineering technology. Students receive instruction in career opportunities, personal and shop safety, geometric construction, orthographic views, auxiliary views, sectional views, dimensioning, isometrics and an introduction to parametric solid modeling, using the latest, “state of the art” computer software. Instruction incorporates presentation, demonstration and hands-on performance testing in the areas of geometric construction, orthographic views, auxiliary views, sectional views, dimensioning, and isometrics. Reading, writing and math assignments related to drafting and engineering technology are an integral part of this class.

### **3401 *Drafting and Engineering Technology 9<sup>th</sup> Grade Related*** Credits: 1 Level: 3

This course provides students with the theory behind the basics of drafting and engineering technology. Students receive instruction in career opportunities, personal and shop safety, geometric construction, orthographic views, auxiliary views, sectional views, dimensioning, isometrics and an introduction to parametric solid modeling. Instruction incorporates presentation and demonstration in the areas of geometric construction, orthographic views, auxiliary views, sectional views, dimensioning, and isometrics. Reading, writing and math assignments related to drafting and engineering technology theory are an integral part of this class.

### **0342 *Drafting and Engineering Technology 10<sup>th</sup> Grade Shop*** Credits: 8 Level: 3

This course provides students with an introduction to the components of mechanical design. This full-year course expands on the basic drawing techniques of the freshmen year while providing a foundation for mechanical design projects that follow in the junior year utilizing both 2D and 3D solid modeling CAD applications. Students gain knowledge of threads and threaded fasteners including bolts, screws and nut drawings, welding drawings, and spring drawings. Students also learn about power transmission including spur, bevel and worm gear drawings, as well as cam drawings. Various shop processes are introduced including casting, forging, welding, sheet metal parts, along with the use of various measuring instruments including micrometers and verniers. Advanced tolerancing techniques are introduced. Instruction incorporates presentation drawings including shading, perspective, and exploded assembly drawings. Students are introduced to the product design process. Instruction incorporates demonstrations and applied performance testing in the areas of drafting and engineering technology utilizing advanced CAD software, mechanical detailing, and design. Reading, writing and math assignments related to the drafting and engineering technology professions are integrated with academic frameworks during this class.

**3402**     ***Drafting and Engineering Technology 10<sup>th</sup> Grade Related***     Credits: 1     Level: 3

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This course provides students with an introduction to the theory relating to components of mechanical design. This full-year course expands on the basic drawing techniques of the freshmen year while providing a foundation for mechanical design projects that follow in the junior year utilizing both 2D and 3D solid modeling CAD applications. Students gain knowledge of threads and threaded fasteners including bolts, screws and nut drawings, welding drawings, and spring drawings. Students also learn about power transmission including spur, bevel and worm gear drawings, as well as cam drawings. Various shop processes are introduced including casting, forging, welding, sheet metal parts, along with the use of various measuring instruments including micrometers and verniers. Advanced tolerancing techniques are introduced. Instruction incorporates presentation drawings including shading, perspective, and exploded assembly drawings. Students are introduced to the product design process. Instruction incorporates demonstrations and applied performance testing in the areas of drafting and engineering technology utilizing advanced CAD software, mechanical detailing, and design. Reading, writing and math assignments related to the drafting and engineering technology professions are integrated with academic frameworks.

**0343**     ***Drafting and Engineering Technology 11<sup>th</sup> Grade Shop***     Credits: 8     Level: 3

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This course provides students with an introduction to residential architectural drawing and design. The first half of the year teaches students the skills required to generate plot plans, floor plans, foundation plans, exterior elevation plans, roof plans and the necessary sectioning and detailing to provide the required drawing needed for the building permit process. The remainder of the school year focuses on reinforcing the students' skill in mechanical drawing and design. The emphasis will be on shop processes common to mechanical drafting and engineering technology and design like sheet metal, thermoplastics, weldments, forgings and castings. Students will continue to develop their CAD skills though out the year using the latest 2D and 3D CAD software available to them.

**3403**     ***Drafting and Engineering Technology 11th Grade Related***     Credits: 1     Level: 3

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This course is comprised of two half-year segments; the first half provides students with an introduction to theory relating to residential architectural drawing and design. Students learn to recognize the architectural styles of buildings, identify different building techniques; wood, concrete and steel frame. Students become familiar with floor joist, roof rafter and ceiling joist sections, as well as girder, header and ridge beam design with traditional lumber, laminated lumber, and steel beam construction. The remainder of the school year focuses on reinforcing the students' skill in mechanical drawing and design. Students are introduced to theory related to identifying the manufacturing processes and the key elements that impact the design. Classroom instruction includes reading, writing and mathematics assignments related to the drafting and engineering technology profession.

**0344**    ***Drafting and Engineering Technology 12<sup>th</sup> Grade Shop***                      Credits: 8    Level: 3

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This course is comprised of two half-year segments; the first half provides students with advanced studies in residential architectural drawing and design and the second half provides students with advanced studies in mechanical drawing and design. The architectural segment is comprised of an in depth look into residential house design and construction. Students develop civil site design and plans, plumbing plans, electrical plans, and HVAC plans. Final projects will require students to design a residential house with a complete set of documentation house plans. For the remainder of the school year, students are introduced to electro-mechanical packaging and how all aspects of mechanical drafting and engineering technology come together. Students are introduced to schematic drawings, wiring diagrams, block diagrams, wiring harnesses, printed circuit (PCB) design, PCB layout, and PCB drawings. Much of the subject matter is integrated with manufacturing, engineering and electronics technology. This gives students a firsthand understanding of the processes behind mechanical and electrical design. Final projects will require the student to package electronic components into a mechanical enclosure with a complete set of documentation drawings.

**3404**    ***Drafting and Engineering Technology 12<sup>th</sup> Grade Related***                      Credits: 1    Level: 3

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This course is comprised of two half-year segments. The first half provides students with advanced theory related to residential architectural drawing and design and the second half provides students with advanced theory related to mechanical drawing and design. The architectural segment identifies the components and considerations of civil design, including the applications related to surveying and mapping. The mechanical segment provides students with theory relating to mechanical design and electrical/electronic packaging. Career opportunities in architectural and in mechanical design and drafting and engineering technology are discussed in the related class. Class includes reading, writing and mathematics assignments related to the Drafting and Engineering Technology profession.

## *Electrical*

### **0410**    *Electrical Exploratory*

Students explore the electrical program for a one-week period. They are introduced to basic electrical theory and hand tools. Using basic electrical hand tools, students demonstrate the skills required for: wire splicing, low voltage circuitry, entering and terminating Romex, B.X. and low voltage cables, terminating single-pole and three-way switches, and terminating lights and duplex receptacles. Emphasis is placed on hand tool and electrical safety.

### **0411**    *Electrical 9<sup>th</sup> Grade Shop*

Credits: 8    Level: 3

This course provides students with the fundamentals in wiring methods. Using basic hand tools, students demonstrate the skills required for basic 120/240 volt circuitry. Students will wire projects using many different wiring methods including Romex, MC cable, Wiremold, Flex, and EMT. Students will learn to install single pole switches, 3-way and 4-way switches, light sockets and duplex receptacles. Students learn how to draw and follow a wiring diagram. Electrical and hand tool safety is an integral part of the course.

### **4101**    *Electrical 9<sup>th</sup> Grade Related*

Credits: 1    Level: 3

Students are introduced to basic electrical theory and will study electron flow, voltage, amperes, ohms, power, series and parallel circuits. The Massachusetts Electrical Code is introduced and students are introduced to Art 100 - definitions, Art 110 - requirements for electrical installations, Art 300 - wiring methods, Romex, B.X., E.M.T., Flex, and Wiremold. Safety is emphasized in this course and the students learn to comply with all safety practices. Reading, writing, and math assignments related to electrical theory are an integral part of this class.

### **0412**    *Electrical 10<sup>th</sup> Grade Shop*

Credits: 8    Level: 3

In the sophomore year, students will expand their knowledge in residential wiring. They will wire projects in open stud walls (new work) and fish in wires (old work). Students will also be trained to wire different types of electrical services (100 amp overhead, 100 amp underground and 200 amp). Emphasis is placed on the proper and safe use of hand tools and electrical testing equipment. This course covers the installation and maintenance of equipment for light, heat and power in residential, commercial, and industrial locations. Students study the Massachusetts Electrical Code, which governs the installation of electrical equipment. Students also read blueprints, create schematic and wiring diagrams, create layouts, and estimate electrical installations.

### **4102**    *Electrical 10<sup>th</sup> Grade Related*

Credits: 1    Level: 3

Students study the theory and basic safety procedures for the installation of equipment in residential, commercial and industrial locations. Students will be trained to properly wire all rooms in a house by means of the Massachusetts Electrical Code and they will be taught how to calculate electrical demand factor loads for a home or business. Students learn how to take out an electrical permit as well as a service request form from the utility companies. Safety and the Massachusetts Electrical Code, which governs electrical installations, are stressed. Reading, writing, and math assignments related to the electrical professions are integrated with academic frameworks during this class.



## ***Electronics and Engineering Technology***

### **0350 *Electronics and Engineering Technology Exploratory***

This program introduces the practical aspects of the science and industry of electronics to the inexperienced student. Students receive practical instruction encompassing basic circuits, components, equipment, materials and safety. Students construct three projects including an LED flasher, Super time reaction and an alien game. Students do live work to accentuate learning. During the related portion of this course, students are instructed in the theoretical aspects of the science and industry of electronics. Students observe demonstrations, view videotapes, and listen to guest speakers. Students are introduced to fundamental concepts such as current, voltage, resistance, power, semiconductors, and integrated circuits. Students also learn how to solve problems using the NXT Lego robotics.

### **0351 *Electronics and Engineering Technology 9<sup>th</sup> Grade Shop* Credits: 8 Level: 3**

The freshmen year introduces the practical aspects of the science and industry of DC electronics as well engineering. Students will build upon the skills acquired during the exploratory cycle. Students will be introduced to DC theory, electronic components, circuit analysis, various engineering and electronic equipment, engineering design process, mechanical design, and reverse engineering. This program will teach the student Multi-sim (labview) a simulation package that delivers quick, efficient, and effective tools for learning complex circuit design and analysis. They will also utilize the Autodesk software for mechanical design projects. Major components are the construction of a multi-meter and other electronics engineering projects utilizing the engineering design process.

### **3501 *Electronics and Engineering Technology 9<sup>th</sup> Grade Related* Credits: 1 Level: 3**

This course introduces the theoretical aspects of the science and industry of DC electronics and builds upon the skills acquired during the exploratory cycle. Students learn about DC circuits, components, equipment, materials, and safety. All related work is closely integrated with shop work and is immediately applied in the laboratory. Students are trained to design, prototype, assemble, test, and troubleshoot DC circuits such as resistive series, parallel, series-parallel, and parallel-series configurations utilizing CAD and the engineering design process. Reading, writing, and math assignments related to electronics theory is an integral part of this class.

### **0352 *Electronics and Engineering Technology 10<sup>th</sup> Grade Shop* Credits: 8 Level: 3**

This program introduces students to concepts in AC Theory and the analysis of AC circuits. Electronic concepts learned in the sophomore year include waves, magnetism, capacitance, AC circuits, etc. It will also begin to expand on engineering concepts learned in the freshman year. Students will explore statics and other mechanical concepts using the engineering design process. Other engineering material covered this year will include materials, kinematics, process control, and various energy uses and sources.

**3502**    ***Electronics and Engineering Technology 10<sup>th</sup> Grade Related***    Credits: 1    Level: 3

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This program introduces the theoretical aspects of the engineering and science of AC electronics and mechanical applications building upon the skills acquired during the freshman program. Students receive related instruction on AC circuits, components, equipment, materials, with Impedance, AC/DC Waveforms, Phase Angle, Inductance/Inductive Reactance, Transformer, Capacitance and Capacitive Reactance, RC Time Constants, RC/RL Wave Shapes, Magnetic Poles, Magnetic Lines of Force, Electromagnets and Solenoids, Control Circuits, Latch Circuits, Buzzers and safety. All related work is closely integrated with shop work and is immediately applied in the laboratory. Students are trained to design, prototype, assemble, test, and troubleshoot AC circuits and mechanical systems. Reading, writing, and math assignments related to the engineering and electronics professions are integrated with academic frameworks during this class.

**0353**    ***Electronics and Engineering Technology 11<sup>th</sup> Grade Shop***    Credits: 8    Level: 3

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This program introduces Semiconductors to the students and continues to build on engineering concepts and electronic knowledge. Students will learn about diodes, wave rectification, transistors and other electronic components and equipment. Hydraulics and pneumatics will be focus areas that students will learn much about and continue applying design principles to for projects. Students will also be introduced to digital electronics in the latter part of the year. They will learn about and apply basic digital electronic concepts, components, and equipment.

**3503**    ***Electronics and Engineering Technology 11<sup>th</sup> Grade Related***    Credits: 1    Level: 3

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This program introduces the theoretical aspects of the science and engineering of analog electronics and mechanical applications. Students receive related instruction on semiconductor circuits, components, equipment, materials, diodes and Half-Wave Rectification, Full-Wave Rectification with Power Supply, Filters, Zener Diode Regulator, Diode Waveshaping, Voltage Doubler, Transistor Junctions, PNP DC Bias, and Transistor Load Lines. The course provides comprehensive, classroom instruction in electronics and engineering terminology, semiconductor applications, hydraulics, pneumatics, renewable energy, and safety and safety. All related work is closely integrated with shop work and is immediately applied in the laboratory. Students are trained to design, prototype, assemble, test, and troubleshoot analog circuits such as power supplies, amplifiers, and oscillators as well as complex mechanical systems. Reading, writing, and math assignments related to the engineering and electronics professions are integrated with academic frameworks during this class.



## *Graphic Communications*

The Graphic Communications department consists of two areas, the multimedia design lab and the print shop. The trimester is divided, allowing students to experience both areas. This course of study provides students with the opportunity to design and produce a variety of documents, electronic and print, and to experience the production from concept to finished product.

### **0420**    *Graphic Communications Exploratory*

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This one-week course provides the 9<sup>th</sup> grade exploratory student with an opportunity to explore the world of digital media, printing and the areas that represent the complex Multimedia Communications industry. Students are introduced to a wide variety of print and web media used by consumers and industry today. The week is divided, with the student experiencing the computer lab for 2.5 days and the print shop for 2.5 days. This experience provides the opportunity to produce a variety of documents, electronic and print, and to experience the production from concept to finished product. Students are exposed to career opportunities such as digital page layout, photo editing, offset press operation, bindery and copy center operations. Students receive instruction through a combination of demonstrations and individual hands-on experiences.

### **0421**    *Graphic Communications 9<sup>th</sup> Grade Shop*

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Credits: 8    Level: 3

This course provides an introduction to the world of digital media, printing and publishing and the areas that represent the complex Graphic Communications industry. Students are introduced to a wide variety of digital and print media used by consumers and industry, and the materials and machines used to manufacture these products.

**In the print lab**, individual and machine safety procedure is emphasized. Instruction and demonstrations are provided in offset print production techniques, direct to plate output, binding and finishing techniques, screen printing, and general shop safety. Students learn techniques for paper handling and imposition, folding, trimming, and stitching.

**In the computer lab**, Introduction to Adobe Illustrator; Introduction to Adobe Photoshop; Introduction to InDesign; students assist and observe the latest industry standard multimedia design software through instructional projects and live work that incorporates design and visual communication techniques.

Student evaluation incorporates attendance, test and quiz grades, projects, time on task, skill level, and completion of all homework/written assignments. Students receive instruction, in a cooperative learning environment, through a combination of demonstrations, self-study, small group projects, and individual hands-on experiences.

### **4201**    *Graphic Communications 9<sup>th</sup> Grade Related*

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Credits: 1    Level: 3

This course provides an introduction to the world of digital media, printing and the areas that represent the complex Multimedia Communications industry. Students receive an historical overview of the Multimedia Communications industry, information concerning career opportunities, and instruction in safety procedures for the Multimedia Communications industry.

**In the computer lab**, students receive instruction on: OSHA Health & Safety Regulations. Understanding the Mac computers; Printing Processes; Elements of Design; Symbols, Icons, Pictograms and Logos; Introduction to Thumbnails & Roughs; Basic Templates, Guides and Layout; History of Typography; Intro to Color Theory; Introduction to Adobe InDesign.

Student evaluation incorporates attendance, test and quiz grades, projects, and completion of all homework/written assignments. Students are instructed through a combination of presentations and demonstrations, guest speakers, self-study, group projects and individual hands-on experiences. Reading, writing, and math assignments related to digital design and communications theory are an integral part of this class.

**0422**     ***Graphic Communications 10<sup>th</sup> Grade Shop***

Credits: 8     Level: 3

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This course enables the student to develop the skills necessary for digital media, printing the areas that represent the complex Multimedia Communications industry.

**In the print lab**, students receive instruction in offset print production techniques, press operation, binding and finishing techniques, techniques for paper handling, screen printing, folding, trimming, cutting stock, and stitching. Emphasis is placed on the development of quality standards, safe operating procedures, and individual and machine safety procedures.

**In the computer lab**, students are exposed to the latest industry standard graphic design software (Adobe Illustrator, Photoshop, InDesign, Premiere) through instructional projects and live work that incorporates design and visual communication techniques. Students gain experience in the areas of design, video, prepress production, and direct to plate output. Student evaluation incorporates attendance, test and quiz grades, projects, time on task, skill level, and completion of all homework/written assignments. Students receive instruction through a combination of lecture, demonstration, guest speakers, self-study, group projects, and individual hands-on experiences.

**4202**     ***Graphic Communications 10<sup>th</sup> Grade Related***

Credits: 1     Level: 3

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This course enables the student to develop the skills necessary for digital media, printing and publishing and the areas that represent the complex Graphic Communications industry.

**In the computer lab**, students receive instruction on: OSHA Health & Safety Regulations; Intro to Digital Photography and Scanning; Principles of Design; Spot & Process Color; Perspective Drawing; Illustrator, Photoshop and InDesign Techniques; Corporate Branding & Identity; Basic Templates, Guides, and Layout; Pre-flighting; Advertising / Brainstorming Techniques; Art History; and Imposition.

Student evaluation incorporates attendance, test and quiz grades, projects, and completion of all homework/written assignments.

Students receive instruction through a combination of safety practices, lecture, demonstration, guest speakers, self-study, group projects, and individual hands-on experiences. Reading, writing, and math assignments related to graphic communications theory are an integral part of this class.

**0423**     ***Graphic Communications 11<sup>th</sup> Grade Shop***

Credits: 8     Level: 3

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This course enables students to develop and expand the skills necessary for digital media, printing and publishing and the areas that represent the complex Graphic Communications industry.

**In the print lab** emphasis in offset print production techniques, direct to plate output, press operation, binding and finishing techniques, techniques for paper handling and imposition, folding, trimming, cutting stock, and stitching are also included. Emphasis is placed on the development of quality standards, safe operating procedures, and individual and machine safety procedures.

**In the computer lab**, students are exposed to the latest industry standard graphic design software (Adobe Illustrator, Photoshop, InDesign, Dreamweaver and Premiere) through instructional projects and live work that incorporates design and visual communication techniques. Students will gain experience in the areas of design, digital prepress production, web design, animation, user-interface design, advertising and marketing. Student evaluation incorporates attendance, test and quiz grades, projects, time on task, skill level, and completion of all homework/written assignments. Students receive instruction through a combination of lecture, demonstration, guest speakers, self-study, group projects, and individual hands-on experiences.

**4203**     ***Graphic Communications 11<sup>th</sup> Grade Related***

Credits: 1     Level: 3

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This course enables the student to develop and expand the skills necessary for digital media, printing and publishing and the areas that represent the complex Graphic Communications industry.

**In the print lab**, students will receive instruction on: OSHA Health & Safety Regulations; copyright law, ink manufacturing, paper/paper cutting-stock calculations, duplicator press operation/troubleshooting, basic bindery operations, offset sheet-fed press operation, bindery/finishing operations, job ticket and cost awareness, as well as screen printing.

Student evaluation incorporates attendance, test and quiz grades, and completion of all homework/written assignments.

Students receive instruction through a combination of safety practices, lecture, demonstration, guest speakers, self-study, group projects, and individual hands-on experiences. Reading, writing, and math assignments related to graphic communications theory are an integral part of this class.

**0424**     ***Graphic Communications 12<sup>th</sup> Grade Shop***

Credits: 8     Level: 3

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This course enables the student to develop and expand on the skills necessary for digital media, printing and publishing and the areas that represent the complex Digital and Graphic Communications industry. Eligible students may participate in the Cooperative Education Program.

**In the print lab**, emphasis in offset print production techniques, direct to plate output, press operation, binding and finishing techniques, techniques for paper handling, screen printing, folding, trimming, cutting stock, and stitching are also included. Emphasis is placed on the development of quality standards, safe operating procedures, and individual and machine safety procedures.

**In the computer lab**, students are exposed to the latest industry standard graphic design software (Adobe Illustrator, Photoshop, InDesign, Dreamweaver and Premiere) through instructional projects and live work that incorporates design and visual communication techniques. Students will gain experience in the areas of design, digital prepress production, web design, animation, user-interface design, advertising and marketing, all with a focus towards self-promotion and aligning themselves towards a post secondary career or continuing their education through higher learning. Student evaluation incorporates attendance, test and quiz grades, projects, time on task, skill level, and completion of all homework/written assignments. Students receive instruction through a combination of safety practices, lecture, demonstration, guest speakers, self-study, group projects, and individual hands-on experiences. Reading, writing, and math assignments related to graphic communications theory are an integral part of this class.

**4204**     ***Graphic Communications 12<sup>th</sup> Grade Related***

Credits: 1     Level: 3

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This course enables the student to develop the skills necessary for digital media, printing and publishing and the areas that represent the complex Graphic Communications industry.

**In the print lab**, students receive instruction on: OSHA Health & Safety Regulations; hazardous communication and waste management, screen printing, advanced printing process, and advanced offset press operation.

Student evaluation incorporates attendance, test and quiz grades, and completion of all homework/written assignments. Students receive instruction through a combination of safety practices, lecture, demonstration, guest speakers, self-study, group projects, and individual hands-on experiences. Reading, writing, and math assignments related to graphic communications theory are an integral part of this class.

## *Health Services*

**0490**    *Health Services Exploratory*

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The Health Services Exploratory acquaints students with many content areas taught throughout the program including nursing, growth and development, anatomy and physiology, aging and nutrition. After learning about and discussing aging issues, students have an opportunity to go out into the community and work with clients in an adult day health facility. Students also learn about and discuss early childhood development before going out to observe at a local pre-school. During exploratory week, students will look into the various career options within the health services field.

**0491**    *Health Services 9<sup>th</sup> Grade Shop*

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Credits: 8    Level: 3

The freshman year incorporates a basic introduction to the Health Services curriculum. Students focus on nursing, anatomy and physiology, growth and development, medical terminology, aging, and nutrition. In addition, they are introduced to the role of the Certified Nursing Assistant, their role as part of the healthcare team, and the different types of healthcare facilities. Students will begin learning the skills they are required to obtain prior to performing hands-on care per the Department of Public Health for the approved Certified Nursing Assistant Certification portion of the Health Services Curriculum. Working in the community is also a very important aspect of the Health Services curriculum. Freshmen volunteer at a local adult day health center and pre-school; here the students put theory into practice while gaining valuable communication skills. Students receive an OSHA Safety Certificate.

**4901**    *Health Services 9<sup>th</sup> Grade Related*

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Credits: 1    Level: 3

Students are introduced to the theory required for Nutrition Assistant Certification.

**0492**    *Health Services 10<sup>th</sup> Grade Shop*

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Credits: 8    Level: 3

The sophomore year continues to focus and expand upon nursing, anatomy and physiology, disease processes, growth and development, medical terminology, aging, and nutrition. Students continue learning the skills they are required to obtain prior to performing hands-on care per the Department of Public Health for the approved Certified Nursing Assistant Certification portion of the Health Services Curriculum. There is a community clinical practicum that the students apply the theory they have learned in class. They become certified in CPR, AED, and as a Nutrition Feeder.

**4902**    *Health Services 10<sup>th</sup> Grade Related*

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Credits: 1    Level: 3

Nutrition Assistant certification is offered for the related component. Students may receive certification upon completion of an exam and become eligible to be a paid feeder after they turn 16 years of age.

**0493**     ***Health Services 11<sup>th</sup> Grade Shop***     Credits: 8     Level: 3

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The junior year focuses on nursing skills. Students work in several local community nursing homes to develop their clinical skills in preparation for the Department of Public Health Nursing Assistant Certification exam taken at the end of the junior year. There is continued instruction in anatomy and physiology, medical terminology, diabetes and aging in our society. Students are eligible for this job opportunity if they pass the certifying exam and are 18 years of age.

**4903**     ***Health Services 11<sup>th</sup> Grade Related***     Credits: 1     Level: 3

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Cardiopulmonary Resuscitation, First Aid, and Automated External Defibrillator Certification is offered in the 11<sup>th</sup> grade related course.

**0494**     ***Health Services 12<sup>th</sup> Grade Shop***     Credits: 8     Level: 3

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The senior year focuses on advanced nursing skills and on exploring various health occupations through clinical rotations at acute care hospitals, Alzheimer's centers, rehabilitation centers, and developmental disability centers. Students who qualify for Cooperative Education will be able to pursue work as a C.N.A. in one of the numerous long-term health care facilities in the Blackstone Valley. Students who do not go on co-op will be afforded the opportunity to be active in the healthcare setting through affiliations and externships. In addition, students will be able to participate in a comprehensive 75 hour EKG Tech program that prepares the students to function as an EKG Technician. Successful completion of the EKG Tech program will be accompanied by a certificate of completion. Senior students will also be trained in how to pass medications through a Department of Public Health approved program called MAP, Medication Administration Program. Students will be able to become state certified in passing medications in certain DPH funded programs upon turning 18 years of age.

**4904**     ***Health Services 12<sup>th</sup> Grade Related***     Credits: 1     Level: 3

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Students review the systems of the body, complete an Alzheimer's Certification program and complete projects relating to cultural diversity in the work setting and preventing violence in the community.

## HVAC&R

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### **0440**    *HVAC&R Exploratory*

The HVAC&R Exploratory Program is designed as a one week overview of several disciplines within this trade. Students gain specific knowledge and skills to explore the many career opportunities in the Heating, Ventilation, and Air Conditioning, and Refrigeration fields.

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### **0441**    *HVAC&R 9th Grade Shop*

Credits: 8    Level: 3

This course encompasses all basic refrigeration practices including piping, proper use of refrigeration tools, and refrigerant handling according to EPA guidelines. Also included in this course: compressor testing and dismantling, basic electrical projects, and the use of basic controls. The shop program is CBVE based utilizing all standard safety procedures practiced in the HVAC&R industry. This course provides fundamental knowledge necessary for continued success in this field. Shop instruction is project based and hands on in nature.

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### **4401**    *HVAC&R 9th Grade Related*

Credits: 1    Level: 3

Students are instructed in all basic refrigeration theories, specific requirements for piping, types and uses of HVAC&R tools, and federal laws regarding refrigerant handling. Electrical theory as applied to the HVAC&R industry is studied, as well as wiring diagrams and descriptions of various mechanical-electrical controls. Reading, writing, and math assignments related to HVAC&R theory are an integrated part of this class. This class supports all lab/shop projects performed during freshmen year in the HVAC&R program. The material is presented utilizing various methods including lectures, hands-on, term projects and select audio visual resources. Safety instruction is addressed in all units presented.

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### **0442**    *HVAC&R 10th Grade Shop*

Credits: 8    Level: 3

Students are instructed in heat energy theories, basic and advanced refrigeration components, advanced refrigerants, and refrigerant handling. Students design and install an advanced refrigeration system with accessories as well as a complete central air conditioning system. Students study electrical theories and applications used in the HVAC&R industry including pressure controls, starting relays, and circuit identification. Refrigeration system troubleshooting is a major component throughout the sophomore year. The shop program is CBVE based utilizing all standard safety procedures practiced in the HVAC&R industry. This course provides the fundamental knowledge necessary for continued success in this field. Shop instruction is project based and hands on in nature.

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### **4402**    *HVAC&R 10th Grade Related*

Credits: 1    Level: 3

This course examines heat energy theories and operational functions for advanced refrigeration systems and components. Instruction is provided on the complete installation and startup of a central air conditioning system. Various applications of refrigeration systems are researched as well as special refrigeration components. This course also reviews electric motor types and usage as well as motor relay and control operation. Troubleshooting skills are applied to problems encountered in the HVAC&R field. Reading, writing, and math assignments related to the HVAC&R professions are integrated with academic frameworks during this class. This class supports all lab/shop projects performed during freshmen year in the HVAC&R program. The material is presented utilizing various methods including lectures, hands-on, term projects and select audio visual resources. Shop instruction is project based and hands on in nature.

**0443**     ***HVAC&R 11th Grade Shop***     Credits: 8     Level: 3

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Students test and install various types of heating systems including oil, gas, electric, heat pumps and alternative heat sources. Heat transfer systems using hydronic principles and forced air delivery systems are also assembled and tested. Several projects and tasks are focused on troubleshooting heating controls and equipment. The shop program is CBVE based utilizing all standard safety procedures practiced in the HVAC&R industry. This course provides fundamental knowledge necessary for continued success in this field. Shop instruction is project based and hands on in nature.

**4403**     ***HVAC&R 11th Grade Related***     Credits: 1     Level: 3

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Energy requirements and estimation for winter climate control, and operation of all types of heating systems are major component of this course. Students examine theories of fluid dynamics & heat transfer such as hydronics and air systems. Students also perform heat loss calculations and design a modern residential heating system. They are introduced to, and compare heat pumps, alternative energy, gas, and oil fired systems. Reading, writing, and math assignments related to the HVAC&R professions is integrated with academic frameworks during this class. This class supports all lab/shop projects performed during junior year in the HVAC&R program. The material is presented utilizing various methods including lectures, hands-on, term projects and select audio visual resources. Safety instruction is addressed in all units presented.

**0444**     ***HVAC&R 12th Grade Shop***     Credits: 8     Level: 3

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During the senior year, students are instructed in advanced troubleshooting techniques of heating/cooling systems. Students received instruction in preventative maintenance, indoor air quality as well as psychometrics. This course also includes introduction to pneumatic and digital controls, blueprint reading, and senior project presentations. Seniors on co-op will have an adjusted shop grade based on their co-op experience. The shop program is CBVE based utilizing all standard safety procedures practiced in the HVAC&R industry. This course provides fundamental knowledge necessary for continued success in this field. Shop instruction is project based and hands on in nature.

**4404**     ***HVAC&R 12th Grade Related***     Credits: 1     Level: 3

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This course examines advanced heating/cooling system design, computerized heat load/gain estimation, blueprint reading, and job estimating. Students examine air flow, air system design, and psychometrics as applied to air conditioning systems. Specific instruction will be offered to students seeking training in a specialized HVAC&R field. Students are required to complete one or more HVAC&R term projects. The subject of these projects will concur with lab or Co-Op related projects. Research, which includes reading, writing, and math assignments related to the HVAC&R professions, is integrated with academic frameworks during this class. Seniors on co-op will have an adjusted related grade based on their co-op experience. This class supports all lab/shop projects performed during senior year in HVAC&R program. The material is presented utilizing various methods including lectures, hands-on, term projects and select audio visual resources. Safety instructions are addressed in all units presented.

## ***Information Technology***

### **0230 *Information Technology Exploratory***

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The focus of this exploratory program is to introduce students to the basic knowledge and skills necessary to pursue study in the Informational Technology program. Basic instruction in shop safety and IT program orientation is provided. Students learn the necessary skills that open the way to the various career options for the IT professional. They develop an understanding of the scope of the program and the technology systems involved.

### **0231 *Information Technology 9th Grade Shop*** Credits: 8 Level: 3

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When students enter permanent placement in the Information Technology program, they begin their preparation for the CompTIA A+ certification test. The focus of the freshman year is the Info Tech Cluster competencies. These include: health and safety, underlying principles of technology, PC hardware of all types, problem solving and troubleshooting basics, operating systems, introduction to web design, HTML, word processing, spreadsheets, databases, using internet resources and e-mail, digital images and graphics, incorporating digital video and audio, employability and management and Entrepreneurship. This is done in a shop/classroom environment and as a self study on line.

### **2301 *Information Technology 9th Grade Related*** Credits: 1 Level: 3

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The Information Technology related theory instruction is intended to complement the vocational instruction and laboratory projects. When students enter permanent placement in the Information Technology program, students begin their preparation for the CompTIA A+ certification test. The course of study also provides instruction in the areas of health and safety in the information technology field. The focus of the freshman year is the Info Tech Cluster competencies. These include: health and safety, underlying principles of technology, hardware, problem solving and troubleshooting basics, network terminology and design, operating systems, introduction to web design, HTML, word processing, spreadsheets, databases, using internet resources and e-mail, digital images and graphics, incorporating digital video and audio, employability and management and entrepreneurship. This is done in a class room environment and as a self study online.

### **0232 *Information Technology 10th Grade Shop*** Credits: 8 Level: 3

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The focus for the first portion of the sophomore year is the completion of the Info Tech Cluster Competencies. Topics include: utilization of multimedia and graphic tools, HTML applications, selection and installation of operating systems, practice of ethical and legal behaviors, and software applications installation and configuration. The focus of the second portion of the sophomore year is advanced operating systems, hardware, and information services and support. Topics include: installation and configuration of several Windows operating systems, configuration of operating systems, troubleshooting, and system maintenance and backup. Installing and repairing several types of printers, scanners and copiers. Design and set up a small office or home network; wired and wireless. During the sophomore year students complete their preparation for the CompTIA A+ certification test. Any time during the sophomore year, students may take the A+ certification exam. They may upon passing the A+ exam, excel into an approved self study course.

**2302**     ***Information Technology 10th Grade Related***     Credits: 1     Level: 3

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The related class will coincide with the shop class to learn the principles and theory related to their hands-on activities and projects conducted in the laboratory during shop. However it will be a separate class held every day during shop for at least one period. During this time we will be reviewing the chapter of the week. This will also include the following assignments every week: Homework, Worksheet, Chapter presentation and a quiz.

The focus for the first portion of the sophomore year is the completion of the Info Tech Cluster Competencies. Topics include: utilization of multimedia and graphic tools, HTML applications, Selection and installation of operating systems practice of ethical and legal behaviors, and software applications installation and configuration. The focus of the second portion of the sophomore year is advanced operating systems, hardware, and information services and support. Topics include: installation and configuration of several Windows operating systems, configuration of operating systems, troubleshooting, and system maintenance and backup. Installing and repairing several types of printers, scanners and copiers. Design and set up a small office or home network; wired and wireless. During the sophomore year students complete their preparation for the CompTIA A+ certification test. Any time during the sophomore year, students may take the A+ certification exam. They may upon passing the A+ exam, excel into an approved self study course.

**0233**     ***Information Technology 11th Grade Shop***     Credits: 8     Level: 3

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The focus of the junior year is network systems and infrastructure. Topics include: network installation and configuration, network architecture, using TCP/IP to establish connectivity, performing network maintenance, monitoring network performance, network troubleshooting, infrastructure component installation and configuration, configuring switches and routers, installation and configuration of network applications, securing networks from viruses, hacking and other threats, project management, and preparation and presentation of technical documentation. Upon completion of the junior year, some students may take the Network + certification exam.

**2303**     ***Information Technology 11th Grade Related***     Credits: 1     Level: 3

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The Information Technology related theory instruction is intended to complement the vocational instruction and laboratory projects. Students have the opportunity to learn the principles and theories related to their hands-on activities and projects conducted in the laboratory during the junior year.

**0234**     ***Information Technology 12th Grade Shop***     Credits: 8     Level: 3

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Qualified seniors participating in the cooperative program will gain industry experience in paid positions off-campus. In order to participate in the cooperative program, students must meet all coop requirements and be in good academic and vocational standing. Seniors also have the opportunity to work with the school's technology staff on the configuration and service of equipment on the school's network and on community related projects. Seniors who do not participate in the cooperative program will receive instruction on programming, web development and interactive media technologies. Topics include: design theory, advanced digital images and graphics, encoding and decoding digital video, animation, design and creation of web pages, using HTML, cascading style sheets, Using JavaScript, security issues, the convergence of audio-visual media and digital systems, and advanced project management.

**2304**     ***Information Technology 12th Grade Related***     Credits: 1     Level: 3

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The Information Technology related theory instruction is intended to complement the vocational instruction and laboratory projects. Students have the opportunity to learn the principles and theories related to their hands-on activities and projects conducted in the laboratory during the senior year.

## ***Manufacturing and Engineering Technology***

### **0360 *Manufacturing and Engineering Technology Exploratory***

This one-week course provides students with the basic knowledge and skill level used in manufacturing technologies today. Students receive instruction in personal and shop safety, tool usage, measuring, cutting metal, introduction to lathe operation, and gas metal arc (GMAW) welding while making special projects. Students receive instruction through a combination of presentations, demonstrations, and hands-on performance.

### **0361 *Manufacturing and Engineering Technology 9<sup>th</sup> Grade Shop* Credits: 8 Level: 3**

This two-trimester course provides students with the basic knowledge and skill training necessary for continued success in the Manufacturing and Engineering Technology program. Students receive instruction in career opportunities, shop operational procedures, personal and shop safety, tool usage, basic operation of machine tools, oxy-acetylene welding processes, shielded metal arc welding (SMAW), simple fabrication operations, and use of hand and power tools. Students receive instruction through a combination of presentations, demonstrations and hands on performance.

### **3601 *Manufacturing and Engineering Technology 9<sup>th</sup> Grade Related* Credits: 1 Level: 3**

This two-trimester course provides students with the basic knowledge and skill training necessary for continued success in the Manufacturing and Engineering Technology program. Students receive instruction in career opportunities, shop operational procedures, personal and shop safety, tool usage, basic math and measuring skills, related theory in machining tools, and oxy-acetylene welding processes. Students receive instruction through a combination of presentations, demonstrations, video equipment and hands-on activities. Students receive instruction through a combination of presentations, demonstrations and hands-on performance.

### **0362 *Manufacturing and Engineering Technology 10<sup>th</sup> Grade Shop* Credits: 8 Level: 3**

This course provides students with the basic knowledge and skill training necessary for continued success in Manufacturing and Engineering Technology program. Students are instructed in surface grinding, milling, hand tools, measuring tools, Computer Numerical Control (CNC), power saws, lathes, Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), resistance spot welding, press brake, 20-ton punch and the related theory that will cover these metal working processes. Students receive instruction through a combination of presentations, demonstrations and hands-on performance.

### **3602 *Manufacturing and Engineering Technology 10<sup>th</sup> Grade Related* Credits: 1 Level: 3**

Students are instructed in basic mathematics, linear measurement, tolerances, basic blue print reading, geometry and applied mathematics. Related theory also covers surface grinding, milling, hand tools, measuring tools, Computer Numerical Control (CNC), power saws, lathes, welding symbols, Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), resistance spot welding, press brake, and the 20-ton punch. Students receive instruction through a combination of presentations, demonstrations, hands-on performance, field trips, and guest speakers. Reading, writing and math assignments related to the Manufacturing and Engineering Technology professions are integrated with academic frameworks during this class.

**0363**    ***Manufacturing and Engineering Technology 11<sup>th</sup> Grade Shop***    Credits: 8    Level: 3

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This course provides students with advanced knowledge and skill training necessary for continued success in the Manufacturing and Engineering Technology program. Students receive advanced training in milling, lathe, grinding, CAD/CAM, Computer Numerical Control (CNC) Programming, Gas Metal Arc Welding (GMAW), introductory Gas Tungsten Arc Welding (GTAW), welding symbols, advanced fabrication, and related theory. Students receive instruction through a combination of presentations, demonstrations, and hands-on performance.

**3603**    ***Manufacturing and Engineering Technology 11<sup>th</sup> Grade Related***    Credits: 1    Level: 3

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This full year course provides instruction in trigonometry, Computer Numerical Control Programming (CNC), metal working formulas, metallurgy, heat treatment of metals and employment skills. Related theory also covers advanced milling, lathe, grinding, CAD/CAM, Gas Metal Arc Welding (GMAW), gas tungsten arc welding and advanced fabrication. Students receive instruction through a combination of presentations, demonstrations, hands-on performance, field trips, and guest speakers. Reading, writing and math assignments related to the Manufacturing and Engineering Technology professions is integrated with academic frameworks during this class.

**0364**    ***Manufacturing and Engineering Technology 12<sup>th</sup> Grade Shop***    Credits: 8    Level: 3

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This course provides students with instructions and skill training necessary for continued success in the Manufacturing and Engineering Technology program. Students receive instruction in the areas of Computer Numerical Control (CNC) plasma cutting, advanced welding and machining skills, and participate in outside live work utilizing skills acquired. Job placement and opportunities in the cooperative program are available for those whose skill level and academic achievement meet all school requirements for the cooperative program. Students receive instruction through a combination of presentations, demonstrations, and hands on performance testing.

**3604**    ***Manufacturing and Engineering Technology 12<sup>th</sup> Grade Related***    Credits: 1    Level: 3

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This course provides twelfth grade students with instructions in geometry and trigonometry utilizing machining formulas, blue print reading, advanced welding techniques, and Computer Numerical Control (CNC) plasma arc cutting. Instruction utilizes presentations, demonstrations, hands-on performance, field trips and guest speakers. Research, which includes reading, writing and math assignments related to the Manufacturing and Engineering Technology professions, will be integrated with academic frameworks during this class.

## *Painting & Design Technologies*

### **0460** *Painting & Design Technologies Exploratory*

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This one-week program provides students with an overview of several disciplines within this occupational area. Students gain specific knowledge and skills that enable them to explore various opportunities available in the painting and design field. Students are exposed to a cross-section of hands-on training in surface preparation, painting, furniture finishing, spray-painting, and faux techniques.

### **0461** *Painting & Design Technologies 9<sup>th</sup> Grade Shop*

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Credits: 8    Level: 3

This two-trimester course provides students with the introductory knowledge and skill training necessary for the modern day trade of painting and design technologies. Students attain basic skills in surface coatings, wall applications and furniture refinishing. OSHA safety regulations and practices are introduced, as well as Material Safety Data Sheets, and safety procedures. Critical thinking skills are emphasized throughout the course.

### **4601** *Painting & Design Technologies 9<sup>th</sup> Grade Related*

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Credits: 1    Level: 3

This related course introduces print reading, fundamentals of evaluating floor plans, introduction to paints, coatings and sealants, and graphic applications and sign art. Students' school and professional portfolios are developed. Reading, writing and math assignments related to the Painting Design Technologies are an integral part of this class.

### **0462** *Painting & Design Technologies 10<sup>th</sup> Grade Shop*

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Credits: 8    Level: 3

This course provides fundamental knowledge necessary for continued success in the field. Shop instructions are project-based and hands-on in nature. Instruction includes wall covering and textiles, spray painting, drywall repair, furniture refinishing, and decorative finishes. Students develop skills in sign art utilizing Computer-Aided Design and a vinyl-cutting program, as well as airbrush and free hand techniques and color tinting.

### **4602** *Painting & Design Technologies 10<sup>th</sup> Grade Related*

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Credits: 1    Level: 3

This class supports all shop projects performed in the Painting Design Technologies Program. Students receive instruction through a combination of presentations, hands-on activities and term projects, and select audiovisual materials. Safety instructions are addressed in all units. Students receive instruction in job planning, supervision, and presentation. Reading, writing and math assignments related to the Painting Design Technologies are an integral part of this class. Students acquire their OSHA 10 hour card.

**0463**     ***Painting & Design Technologies 11<sup>th</sup> Grade Shop***     Credits: 8     Level: 3

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In addition to reinforcing previous skills, instruction expands to assist students in gaining proficiency level competency in painting; principles of design, estimating, planning, and scheduling. Students design structures and estimate projects with an understanding of tool lists, materials lists, process flow, and labor requirements.

**4603**     ***Painting & Design Technologies 11<sup>th</sup> Grade Related***     Credits: 1     Level: 3

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Students receive instruction through a combination of lectures, hands-on, term projects, and select audio-visual materials. Students acquire their OSHA 10 hour card. Small business management skills are developed and foreperson's duties/leadership roles are fostered. Reading, writing and math assignments related to the Painting Design Technologies are an integral part of this class.

**0464**     ***Painting & Design Technologies 12<sup>th</sup> Grade Shop***     Credits: 8     Level: 3

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Students focus on an in depth review of previous instruction. The goal is to strengthen student knowledge in preparation for involvement in the cooperative vocational educational program. In addition, students have the opportunity to be involved in school facility painting.

**4604**     ***Painting & Design Technologies 12<sup>th</sup> Grade Related***     Credits: 1     Level: 3

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Students strengthen skills in career planning, relationships with employers, employees, and customers. Competencies learned in grade 11 are reviewed and reinforced, specifically safety and shop procedures, applied math, working drawings and vocabulary. Reading, writing and math assignments related to the Painting Design Technologies are an integral part of this class. Workplace competencies include job-hunting, resume writing, and interview techniques.

## ***Plumbing***

*All instruction is in accordance with the Commonwealth of Massachusetts Fuel, Gas, and Plumbing Code and current Massachusetts Career Vocational Technical Education (CVTE) Frameworks guidelines. For Additional guidelines and curriculum requirements, refer to “CMR 11.00 Education and Experience Standards and Requirements for Licensure” on the mass.gov website.*

**0430 *Plumbing Exploratory***

This one-week exploratory related program is designed to enhance student awareness of the plumbing field. Synchronized use of video, instructor presentation, and relevant literature is provided to the student as shop tasks are being performed.

**0431 *Plumbing 9th Grade Shop***

Credits: 8    Level: 3

Students in this two-semester program are given basic orientation in career opportunities, shop-marking procedures, tool crib procedures, and hand tool safety. Students receive instruction in understanding a rule, assembly of steel, copper, and cast iron piping, and introduction to residential potable water distribution systems.

**4301 *Plumbing 9th Grade Related***

Credits: 1    Level: 3

This course provides related theory instruction closely aligned with the students’ shop tasks. This allows for the enhancement of the academic discipline related to a particular task. Examples include understanding of basic mathematical requirements pertaining to linear measurements (reading a rule) determining diameters, pressures, and volumes (characteristics of pipe).

**0432 *Plumbing 10th Grade Shop***

Credits: 8    Level: 3

Students receive a full school year of instruction in the areas of power tool safety, water heaters, hot and cold water distribution systems, drainage waste, and venting system, installation of rough and finish plumbing for residential plumbing fixtures, valve repair, power threading, equipment and safety.

**4302 *Plumbing 10th Grade Related***

Credits: 1    Level: 3

Students are instructed in theory on related shop tasks including water heaters, hot and cold water distribution systems, drainage waste and vent systems, and valve characteristics. Reading, writing, and math, assignments related to the plumbing professions are integrated with academic frameworks during this class.

**0433**     ***Plumbing Shop 11th Grade Shop***     Credits: 8     Level: 3

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Students are instructed in the areas of sizing and installing gas piping, introduction to drain-cleaning, introduction to the installation of commercial plumbing fixtures, and an introduction to residential gas hydronic heating systems. In addition to shop tasks, students perform plumbing facility maintenance work under direct instructor supervision.

**4303**     ***Plumbing 11th Grade Related***     Credits: 1     Level: 3

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Students continue plumbing related theory in accordance with their shop tasks. This includes sizing gas piping, cleanouts and cleanout locations, laws pertaining to commercial plumbing fixtures, and residential heating system design. Reading, writing, and math assignments related to the plumbing professions are integrated with academic frameworks during this class.

**0434**     ***Plumbing 12th Grade Shop***     Credits: 8     Level: 3

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Students focus on an in-depth review of previous instruction. The goal is to strengthen student knowledge in preparation for involvement in the cooperative vocational educational program. In addition, students may be involved in school facility maintenance work.

**4304**     ***Plumbing 12th Grade Related***     Credits: 1     Level: 3

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The related program is designed to fine-tune the students plumbing studies to date. An in-depth study of heating system design, gas piping design, hydraulic data, and plumbing code license preparation is the focus of instruction. Research, which includes reading, writing, and math assignments related to the plumbing professions, is integrated with academic frameworks during this class.

<p style="text-align: center;"><b>MASSACHUSETTS STATE COLLEGES AND UMASS MINIMUM ADMISSIONS REQUIREMENTS</b></p>
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The admissions standards for the state colleges 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. 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.)

- ♦ English 4 courses
- ♦ Mathematics 3 courses (Algebra I & II and Geometry or Trigonometry, or comparable coursework)
- ♦ Sciences 3 courses (including 2 courses with laboratory work) □
- ♦ Social Sciences 2 courses (including 1 course in U.S. History)
- ♦ Foreign Languages 2 courses (in a single language)
- ♦ Electives 2 courses (from the above subjects or from the Arts & Humanities or Computer Sciences)

***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 College GPA  
3.00

University GPA  
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 college 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 colleges or UMASS.*

Scores on the new writing section of the SAT will not affect the sliding scale for freshman applicants to the Massachusetts state colleges 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***

<b>Weighted High School GPA</b>	<b>Combined SAT-I V&amp;M Must Equal or Exceed (ACT Equivalent in Italics)</b>
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 COLLEGE OR UNIVERSITY CAMPUS.**

### ***Sliding Scale for Freshman Applicants to a State College***

<b>Weighted High School GPA</b>	<b>Combined SAT-I V&amp;M Must Equal or Exceed (ACT Equivalent in Italics)</b>
2.51-2.99	920 (19)
2.41-2.50	960 (20)
2.31-2.40	1000 (21)
2.21-2.30	1040 (22)
2.11-2.20	1080 (23)
2.00-2.10	1120 (24)

### ***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:

- ♦ Two vocational-technical courses may be used to fulfill the two required electives.
- ♦ 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:
  1. Complete at least one Carnegie unit of foreign language;
  2. Complete a fourth Carnegie unit of mathematics or science, which need not be a laboratory course; or
  3. 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 colleges will be required to meet DOE requirements for foreign language study.

### ***Pre-College Summer Program Applicants***

Students who do not meet the applicable requirements with other exception allowances may demonstrate their preparedness for the rigors of college-level work through the successful completion of a BHE approved pre-college summer program prior to their enrollment in the freshman class.

### ***Applicants who are Graduates of Non-US High Schools***

Admissions officers may use a documentation service or other appropriate means to determine whether the transcript of a non-U.S. high school graduate is comparable to the required transcript. A weighted high school GPA must be calculated. *Core course allowance:* Graduates of high schools that are outside of the United States may substitute the same number of any college preparatory courses or their equivalent for the required distribution of core courses. Applicants who are graduates of non-US high schools who do not meet the GPA requirement default to the sliding scale unless the applicant is unable to take the SAT due to extreme circumstances beyond their control in their home country.