

PHILOSOPHY

Bay Path Regional Vocational Technical High School is a multi-purpose institution designed to serve the needs of the people, especially the youth residing in the Southern Worcester County Regional Vocational School District. It is our intent to offer a strong foundation in academic and vocational/technical education.

The vocational/technical responsibility of the school is to offer students the necessary knowledge to develop job entry-level skills. The shop and related courses provide students with opportunities to gain the vocational and technical knowledge, manipulative skills, work attitudes, and ethics necessary for a successful career in a vocation.

The academic responsibility of the school is to offer students the necessary knowledge and experience required for a meaningful and productive life. The courses of academic study will provide students with foundations from which to grow in the areas of skills, ideals, attitudes, and behaviors necessary for a vocation and/or higher education. All students are provided with courses of study which are designed to prepare them to cope with everyday problem-solving and decision-making; to communicate; to comprehend; to understand and appreciate the cultural and racial diversity of the society in which they live; and, to attain self-awareness as well as awareness world around them. The acquiring of these foundations by students is recognized by the awarding of a high school diploma upon completion of the program of studies.

It is through the combined efforts of the vocational/technical and academic staff, the community and advisory committees, the curricula and the facilities that total education is possible.

It is understood that the philosophy and educational objectives cannot be effective without the support of the school district. It is the intent of the school to make available a wide range of services to the district communities. The district residents interested in furthering or adapting their education are provided with the opportunities to do so, through the undergraduate, post-graduate, and evening school programs. The school also serves district residents by allowing them the opportunity to avail themselves of vocational/technical services. In addition, the school's physical plant is available for community activities.

In seeking to continually improve the school's offerings to students in light of an ever-changing world; it is our intention to provide all students equity in access, programs, and services. It is our responsibility to provide for each student equally the highest possible degree of quality education. Bay Path Regional Vocational Technical High School graduates are expected to be capable tradespeople, good citizens, and well-rounded individuals.

EDUCATIONAL OBJECTIVES

- To develop the ability and desire to work and live harmoniously.
- To provide programs tailored to meet the needs of special populations.
- To develop the abilities and attitudes necessary to be successfully employed.
- To develop the ability to use and care for the tools and equipment of each student's vocation.
- To develop an understanding of logical diagnostic procedures.
- To encourage good work habits of orderliness, cleanliness, and respect of property.
- To develop the abilities necessary for successful problem solving and decision making.
- To develop an understanding of the world in which each student lives and works.
- To develop self-awareness, respect for authority, and an understanding of each individual's responsibilities to himself and the community.
- To develop an understanding of and appreciation for the cultural and racial diversity of the society in which we live.
- To provide information relating to employment opportunities and projected trends.
- To grant diplomas to students who successfully complete the program of studies.
- To provide a sufficient academic and vocational/ technical background to enable a student to further his/her career opportunities through higher education.
- To update and revise the programs of study.
- To provide extra-curricular programs to allow further student development.
- To provide continuing educational opportunities to all residents of the school district.
- To provide specific student work projects through vocational/technical programs for residents of the school district.
- To encourage school district participation through Craft Committees and cooperative work-study.
- To encourage parental and community involvement.

- To encourage staff professional improvement through in-service programs, higher education courses, and other related workshop programs.
- To foster effective communication between Bay Path and the sending school.

GUIDANCE SERVICES

Guidance Services are intended to help the student make the most of the opportunity for vocational education. Counselors assist the students in decision-making in regard to vocational and educational planning, and aid in the development of strengths and strategies to overcome personal difficulties.

Orientation:

- Introductory Presentation (8th Grade)
- Pre-exploratory program at Bay Path Regional Vocational Technical High School for 8th graders
- Orientation Session with Counselor

Information:

- Library of occupational/educational materials
- Information on technical career colleges and post-secondary institutions
- Armed services materials

Counseling:

- Private counseling by appointment
- Referrals to various outside counseling agencies
- Parent conference upon request

Testing:

- Comprehensive Test of Basic Skills and MCAS
- Various Nationally Recognized Standardized Tests

Admissions and Placement:

- Application processing
- Transfer processing
- Job placement services in cooperation with Co-operative Education Program

The best way to use counseling services is to make an appointment. The Guidance Counselors and Pupil-Personnel Services Director are eager to help the students enjoy productive years with us.

STUDENT TRANSFER POLICY

1. Students wishing to transfer from one vocational department to another must submit their name to their guidance counselor so that they may be placed on a waiting list.

Students are placed on the waiting list in accordance with their level of performance in their present shop or in the case of a grade nine student, according to their exploratory performance. Transfers will be made on the following basis:

1. Parental permission
2. Availability of space
3. Validity of transfer request
4. For administrative reasons
5. Director of Pupil Personnel Services has approved the request

Such transfers, since they are made on a space available basis, may be made throughout the year. Please note that shop hours are not transferable from one shop to another.

2. Academic students wishing to transfer from one course to another must submit a request to their guidance counselor in writing, stating the reason for the request. The student must secure written permission for the transfer from the present instructor, parent, and guidance counselor before the transfer will be considered by the Director of Guidance.

No transfer will be permitted after November 30th of the school year, unless the transfer is being requested by a member of the administration or is being done as part of a student's education plan under Chapter 766.

Transfers will be made if:

1. There is space available.
2. The present instructor agrees with transfer.
3. It is a valid request.
4. It is prior to November 30th.
5. It is an administrative request or a request under Chapter 766.
6. Parental permission has been granted.
7. The Director of Pupil Personnel Services has approved the request.

The Administrative Staff at Bay Path shall have the final authority on all transfers.

3. Students wishing to transfer to another school should make an appointment with their guidance counselor to discuss this option. The student must secure parental permission and must meet all financial obligations to Bay Path before the transfer will be completed.

SPECIAL EDUCATION SERVICES

Resource Room instruction is available for all grade levels in all academic subject areas. Students affiliated with the Special Education Department may be scheduled to receive academic instruction in the Resource Room full-time or part-time in one or all areas.

The purpose of the Resource Room is to provide students unable to meet the demands of a regular class setting with an opportunity to learn the subject matter at their current instructional level.

Students and parents interested in these services may contact the Special Education Director for further information.

GRADUATION REQUIREMENTS

<u>Course</u>	<u>Years Offered</u>	<u>Credits/Year</u>	<u>Years</u>	<u>Minimum Credits</u>
Shop	9, 10	3.5	2	7.0
Shop	11, 12	4.5	2	9.0
Related	9,10, 11,12	1.0	4	4.0
Soc. Studies	9, 10	1.0	2	2.0
Soc. Studies	11, 12	0.5	1	0.5
Phys. Ed.	9, 10	0.25	2	0.5
Health	9, 10	0.25	2	0.5
*Phys.Ed.	11,12	0.5	2	1.0
English	9,10, 11, 12	1.0	4	4.0
Math	9, 10, 11, 12	1.0	3	4.0
Science	9, 10	1.0	2	2.0
Science Lab	11,12	1.0	1	1.0
*Science	11,12	0.5	1	0.5
**Elective	12	0.5	1	0.5

TOTAL CREDITS REQUIRED FOR GRADUATION

36 Minimum

Student must satisfy policy explanation listed below:

Explanation:

Student must pass ALL subjects in Grades 9 and 10.

*Lab Science in place of Phys. Ed. In Grades 11 & 12 will be worth one credit

ALL students MUST pass Shop, Related, Phys. Ed. Math and English for 4 years

ALL students MUST pass 3 years of Science, History and, if taking an Elective, Must pass the **Elective.

(Revised as of 1/19/07)

In order to graduate from Bay Path, a student must accumulate 34.5 credits. The student must have received these credits as outlined above to meet minimum graduation standards.

Transfer students who have been promoted by their local high schools will be placed according to their academic transcript. Shop and related credits will be waived. These students will receive a certificate of attendance in their

vocational area rather than the trade certificate. Transfer students, however, must meet all other graduation requirements.

Only those students who have completed the graduation requirements for the high school diploma will be allowed to participate in the graduation ceremonies.

HONOR ROLL

Students who have earned a 90.0 in all subjects and have at least an average of 75% in gym, will be placed on High Honors for that quarter.

Students who have earned an 80.0 or higher in all subjects and have at least an average of 75% in gym will be placed on Honors for the quarter.

Students who have a combined average in all courses of 80% with no grade less than 75%, will be placed on the Principal's List for the quarter.

Students receiving an Incomplete in a course will not be placed on the Honor Roll.

CLASS RANK

The class rank of a student is calculated on performance. The rank is based on: Number of credits, course grades, and quality points. Quality points are assigned to each course so that courses that demand higher scholastic achievement are given more weight in the overall calculation of the class rank.

The class rank of a student is determined by dividing the Total Weighted Product by the Maximum Weighted Product producing a Weighted Grade Average.

The Maximum Weighted Product is the total amount of credits carried by a student multiplied by 100, the highest grade a student may earn.

The Weighted Product is the amount of credits carried by an individual course multiplied by the student's grade and Quality Point assessment carried by the course.

The Total Weighted Product is computed by adding the Weighted Products of all courses carried by the student.

The Weighted Grade Average is determined by dividing the total Weighted Product by the maximum Weighted Product, i.e., $\frac{T.W.P.}{M.W.P.} = W.G.A.$

Students are then ranked in order by the Weighted Grade Average.

For the purpose of class rank, an Incomplete will be calculated as a grade of 0.

SUMMER SCHOOL AND PROMOTION POLICY

Bay Path Regional Vocational Technical High School does not offer a summer school program. Students who must make up required subjects will have to do so at their local high school summer school programs, at their own expense. An accredited summer school program offered by one of the area schools will be the only method by which students may make up failed courses.

Students who fail shop or related will not be promoted; it is impossible to make up these subjects in summer school. These students will no longer be able to continue in these shops.

Students each year must pass at least two of the following courses: Physical. Ed., Social Studies, and Science. Students who fail a combination of the above must attend summer school for one.

Students who fail Math or English will not be promoted to the next grade unless these courses are made up in summer school.

In order for a student to go to summer school, the student must have a minimum yearly grade average of 48. If there are mitigating circumstances that lead to a student having a grade below 48, parents may appeal to the Superintendent in hopes of receiving a waiver so that their child can attend Summer School. The student must have at least a 65 average in the summer school course in order to receive credit for the course.

GRADE FAILURES

Ninth grade failing students must make up their failures in summer school and satisfy the requirements for promotion. Students who fail grade nine and have not made up the requirements for promotion will be placed on a waiting list, and their records and transfer cards will be sent to the local high school, since grade nine slots would have been filled by applying eighth grade students as early as May of the previous year.

Students who failed grades 10, 11, or 12 and who have not satisfied summer school requirements for promotion will be retained on a space-availability basis, with no guarantee of remaining in the same shop, since that shop may already have been filled by promoted students.

ELECTIVE OFFICE AND SCHOOL SPORTS PARTICIPATION CRITERIA

To be eligible to participate in any sport or be elected to any school or class office or any extra curricular activity, a student must be passing in all major courses; Shop, Related, English/Reading, and Math. To be eligible at the beginning of the school year, the student must have been promoted to the next grade level. To be eligible the student must maintain a cumulative passing average, as well as, a passing average for each individual quarter.

The academic eligibility shall be considered as official and determined only on the date when report cards for that marking period have been issued. An "incomplete" will be treated as a grade of 55, until the instructor submits a grade change.

Students on any type of suspension may not participate in school sports or any other school activity until the suspension has been completed.

OCCUPATIONAL EDUCATION PROGRAM.

Bay Path Regional Vocational Technical High School offers an excellent range of vocational programs which are listed below.

1. Heating, Ventilation, Air Conditioning & Refrigeration
2. Automotive Collision Repair & Refinishing
3. Automotive Technology
4. Cabinetmaking
5. Carpentry
6. Cosmetology
7. Culinary Arts
8. Programming & Web Development
9. Drafting
10. Electrical
11. Electronics
12. Marketing
13. Graphic Communications
14. Health Assisting
15. Machine Tool Technology
16. Masonry & Tile Setting
17. Metal Fabrication & Joining Technologies
18. Office Technology
19. Facilities Management
20. Plumbing
21. Power Equipment Technology

A trade certificate will be issued for a specific vocational program to a student who has accumulated shop and related hours according to the following schedule:

Classes must earn 2,240 shop and related hours.

Cosmetology students will be awarded trade certificates if they acquire 1,280 hours.

These shop hours can only be accumulated through good attendance and satisfactory performance on shop assignments. An instructor may deduct hours for unsatisfactory work performance. Students receiving an F for a daily grade in shop cannot be considered as having performed satisfactory work, and shop hours will not be awarded at the discretion of the shop instructor.

Those students who have not completed the necessary hours as listed above will receive a card stating the exact number of hours they have completed toward the hours listed above.

EXPLORATORY PROGRAM

Grade 9 students are accepted into a half year exploratory program. The students in exploratory will visit nine different vocational areas during their first half year. On the application, the student rated all the vocational programs offered at Bay Path from the first choice to the last choice. The Guidance Department will attempt to schedule the student to explore his/her highest selected programs. We try to guarantee that all students will have the opportunity to explore their first and second choices. Their remaining schedule will be filled out by courses which they have selected among their top ten choices. Generally, each student will explore at least one random vocational area.

Students will explore each vocation on the exploratory schedule a minimum of four days in shop. Students will be given a shop grade, a related grade, an effort and conduct grade in each area. They will also have an opportunity to receive a scheduling point and recommendation in each exploratory program.

Scheduling points are awarded to students on the basis of cooperativeness and the desire to fulfill student obligations in the vocational area. Students who demonstrate a lack of maturity and present discipline problems are not awarded the scheduling point for that shop. Safety in a vocational setting is paramount and those who demonstrate a disregard for their safety, their peers, and others will lose this important scheduling factor.

Recommendations are awarded on the basis of whether or not the student demonstrates the ability to perform basic shop tasks required in a vocational area. If a student is disruptive and/or shows limited potential in a vocational area, he/she will not be given a recommendation.

When we begin our final scheduling process to assign students to permanent shops, we begin scheduling students who have received nine out of nine scheduling points first, six out of nine scheduling points second, etc. Please note that students may only choose shops for their final placement for which they have been recommended. At the conclusion of the ninth exploratory, the students are given the opportunity to re-select their choices according to preference. The students are then grouped according to scheduling points with the most successful group being scheduled first.

After the grouping process, the determining factors in the scheduling process are first, the highest shop grade; second, the highest related grade; third, the highest combined shop and related averages throughout the exploratory program; fourth, best overall average effort grade; and fifth, best overall average conduct grade. The final scheduling process generally takes approximately ten school days to complete after the completion of the ninth exploratory.

Generally, 75-80% of all students should receive their first choice. It is imperative that all students perform in all areas to their utmost ability. Each shop has a limited amount of space available to the students, and all students in grade nine are on a competitive basis for that space. Students who are absent must complete an assignment for that instructor whose shop program or related class they miss. All students are awarded a grade for each day of the program.

Students who do not receive their first choice may place their names on a waiting list. Students may decide to move to another program, creating a space for someone else. Transfers are possible on a space available basis, and only if they have been moved from a waiting list. Students can get on a waiting list for another shop by making an appointment with their guidance counselor. Students are scheduled from the waiting list according to the original scheduling formula.

TECH PREP/COLLEGE PREP PROGRAM

The Tech Prep Program is a special program linking the last two years of high school with two years at a post-secondary technical school or college. Tech Prep coordinates high school and post-secondary courses in order to better prepare students for entrance into a post-secondary school.

This program is for students who are not presently enrolled in the College Prep* course of study. Tech Prep is an extended, applied and sequential curriculum beginning in the junior year.

*Those **College Prep** students who are in vocational programs with articulation agreements between various colleges will be eligible to receive credits providing they achieve a B or better in shop and related from the second half of the freshmen year. Students must fill out a Tech Prep registration form at the beginning of their junior year. Eligibility for college credits will be determined in May of the senior year.

Bay Path has articulation agreements with the following colleges or technical institutes. Baran Institute, Bay State College, Becker College, Center for Digital Imaging, Central Maine Community College, Johnson and Wales University, Mass Bay Community College, Massasoit Community College, New England Institute of Art, New England Institute of Technology, Newbury College and Quinsigamond Community College. Students who receive a “B” or better in Tech Prep courses are eligible for automatic enrollment, waiver of admission fees, and may receive advanced credit in approved courses.

All students applying to these colleges must take a College Placement Test.

Students in the following vocational programs are eligible to participate:

Heating, Ventilation, Air Conditioning & Refrigeration
Automotive Collision Repair & Refinishing
Automotive Technology
Cabinetmaking
Carpentry
Culinary Arts
Programming & Web Development
Drafting
Electrical
Electronics
Graphic Communications
Health Assisting
Machine Tool Technology
Metal Fabrication & Joining Technologies
Office Technology
Plumbing

**The successful completion of Algebra I is required for participation in this program. Other required courses are Tech Prep/College Prep English, Applied Physics or Chemistry, and Mathematics courses that are appropriate for the student’s career areas.

Apprenticeships

Apprenticeship is a formalized, structured training program combining on-the-job training and related technical instruction in which paid employees receive practical and technical training in their trade area. Apprenticeship is industry-driven career training. Apprenticeship usually begins after high school. The following agreements allow students who are juniors or seniors to apply provided they have met the same requirements for Co-op and have made application to the union and have a driver’s license.

Bay Path presently has apprenticeship agreements with the following unions: The Sheet Metal Workers Joint Apprenticeship Committee Local Union #63 and the Plumbers and Pipefitters Joint Apprenticeship Committee Local Union #4.

These agreements cover the career areas of Heating, Ventilation, Air Conditioning & Refrigeration, Plumbing, Metal Fabrication & Joining Technologies. Students wishing to apply to the unions must meet the criteria of Tech Prep as well as each union's requirements. (See Apprenticeship Manuals in the Vocational Director's Office)

CO-OPERATIVE WORK PROGRAM

The following procedures will be the governing factors in the operation of our co-op program. These regulations are necessary to establish the responsibilities of all parties concerned in order to successfully implement a strong co-op program. Many of these procedures have been established by the Vocational Division of the State Board of Education.

1. To qualify for the Co-operative program, the student must meet the following standards:

a) At the end of the second quarter, a Junior who has an 80 average in shop and related would become eligible for the co-operative program, provided that all other criteria listed have been satisfied.

b) At the end of the third quarter of the student's Junior Year, the criteria for the shop and related grade will be a 70 average in shop and related classes.

c) Senior students will be required to have a 70 at the end of their Junior year. Seniors who failed to qualify at that time would become eligible at the end of the first marking term of their Senior year, provided that they have a 70 average in shop and related at that time.

d) All averages considered must satisfy the requirement cumulatively, as well as, each individual quarter.

e) Students must have completed a minimum of 2 years in the trade.

f) Must be recommended by their shop and related instructors who must consider whether or not the student has accomplished, successfully, an adequate amount of curriculum at that point in time in order to be successful on co-op.

g) Students must be recommended by the Co-op Coordinator

h) Must not have a failure in any subject. At the discretion of the Co-op Coordinator, a student who has failed not more than one (1) subject may be placed on probation for one (1) quarter. At the end of the probation period, a student still failing a course, (required for graduation) will be excluded from co-op.

i) Must have a combined average in academic courses of 70% or better.

j) Must have a good attendance record with not more than three absences per quarter.

2. The work performed at the cooperating company shall meet the standards of industry. Students will be paid a reasonable hourly wage. Students should be paid at least minimum wage. While on co-op, they will work the same number of hours and under the same conditions as other employees.
3. Students who are not 18 years of age are under the following restrictions:
 - a) Students cannot operate hazardous equipment unless approved by the Massachusetts Department of Labor.
 - b) Students cannot work more than nine hours per day, not more than 48 hours per week.
 - c) Students cannot start work earlier than 6:00 a.m., nor work later than 10:00 p.m.
 - d) Companies and students must sign both Form H and the cooperative agreements.
4. Failure to follow school rules, co-op regulations and falsifying illness will result in disciplinary action. This may include removal from the program of any student whose conduct or effort indicates a lack of responsibility.

WHAT ARE THE BENEFITS FOR THE EMPLOYER?

1. Work hours can be tailored to employer's needs.
2. Co-operative work experience students provide a pool of potential full-time employees who are already trained to meet company requirements and, therefore, are more productive.
3. Our students would reduce turnover of beginning employees and decrease employer training costs because of previous vocational exposure.
4. Co-operative work experience students have proven to be more reliable and dependable than unselected applicants.

TITLE IX/CH. 622 POLICY/SECTION 504 NOTIFICATION

It is the policy of Bay Path Regional Vocational Technical High School not to discriminate on the basis of sex, race, color, religion or a handicap in its education programs, activities, or employment policies as required by Title IX of the 1972 Educational Amendments and by the Massachusetts State Law Ch. 622 and by Section 504 of the Rehabilitation Act of 1973. Inquiries regarding compliance with Title IX and Chapter 622, or Section 504 may be directed to Mr. Benjamin F. Monfredo at Bay Path Regional Vocational Technical High School, 57 Old Muggett Hill Road, Charlton, MA 01507. Concerning Title IX and Section 504, inquiries may also be directed to the Director of the Office for Civil Rights, Region I, R.K.O. General Building, Boston, MA 02114. Concerning Chapter 622, inquiries may be made to the Coordinator of Chapter 622, Dept. of Education, 350 Main St., Malden, MA 02148-5023.

ACADEMIC COURSE DESCRIPTIONS

ENGLISH

ENGLISH I

Grade 9, Course #2011 Q.P. 1.00 1.00 Credit

Students will review and practice basic writing skills from sentence structure to paragraph structure with a concentration on types of paragraphs. Students will learn and demonstrate speaking and listening skills that emphasize organization and clarity. In literature, students will examine the various literary forms of short story, novel, drama, and poetry. They will improve vocabulary and comprehension levels. Preparation for the MCAS is included. Regular homework assignments as well as outside readings are required. Shop week homework is assigned.

COLLEGE ENGLISH 1

Grade 9, Course #2021 Q.P. 1.10 1.00 Credit

This college preparatory class is for the skilled reader who is both motivated and capable. Students will study traditional grammar, paragraph structure and composition. Through examination of appropriate models from literature, students will develop a sense of style. Students will learn to analyze the elements of short story, novel, drama, and poetry. Timely completion of regular written homework and outside readings is required. Shop week homework is assigned.

STRUCTURE OF THE ENGLISH LANGUAGE

Grade 9, Course #2511 Q.P. 1.00 1.00 Credit

This course is designed to study the total “construction” of the words in our language and enable students to become fluent readers, and increase their language skills. Students will learn the sound/symbol relationships in a multi-sensory manner. Emphases will be placed on teaching the six syllable types and word construction rules using the Wilson Language Program. The Structure of the English Language course is not an elective. It is offered through the Special Education Department. Students are selected based on diagnostic tests, referrals, and/or Individual Education Plans.

INCLUSION ENGLISH I

Grade 9, Course #2611 Q. P. 1.00 1.00 Credit

*This course is an inclusion program team taught by the English Department and Special Education Department. Assignment of students in need of special education is by approval of the Department of Special Education. Selection of non-special needs participants is by recommendation and random selection. The curriculum content is parallel to the course description of English I. Shop week homework is assigned.

STRUCTURE OF THE ENGLISH LANGUAGE – TITLE 1

Grade 9, Course #3511 Q.P. 1.00 1.00 Credit

This course is designed to study the total “construction” of the words in our language and enable students to become fluent readers, and increase their language skills. Students will learn the sound/symbol relationships in a multi-sensory manner. Emphasis will be placed on teaching the six syllable types and word construction rules using the Wilson Program. THE STRUCTURES OF THE ENGLISH LANGUAGE – TITLE 1 IS NOT AN ELECTIVE. Students are selected based upon diagnostic testing, referrals from the English and Guidance Departments.

LEARNING CENTER ENGLISH I

Grade 9, #2501 Q.P. 1.00 1.00 Credit

This course is taught by the Special Needs Department. Assignment of students in need of special education is by approval of the Department of Special Education.

READING/LANGUAGE LAB I

Grade 9, Course #3041 Q.P. 1.00 1.00 Credit

The Reading/Language Lab provides programs for students experiencing difficulties in reading and writing skills. Emphasis will be placed on comprehension skills and strategies in various literary genres. The literature in this course mirrors that of the English Department. Students will learn how to develop basic sentence structure, word usage, topic sentences and paragraphs in order to master open response questions and achieve competence in essay writing for the MCAS. The Reading/.Language Lab is not an elective course. Students are selected based on diagnostic test scores, referrals, and/or Individual Education Plans. Shop week homework will be assigned.

ENGLISH II

Grade 10, Course #2012 Q.P. 1.00 1.00 Credit

Students will review and practice sentence and paragraph building skills leading to the construction of compositions. Vocabulary, speaking and listening skills will be included. Students will identify and examine the elements of the literary forms of short story, novel, drama and poetry. Preparation for the MCAS is intensive. Regular homework assignments as well as outside readings are required. Shop week homework is assigned.

COLLEGE ENGLISH II

Grade 10, Course #2022 Q.P. 1.10 1.00 Credit

This college preparatory class is a continuation of the freshman course designed for capable and motivated students who are good readers. Many of the students in this course are considering two-year technical schools or college after high school. Students will expand vocabulary and comprehension skills as they study the four genres in literature. Written assignments will include both composition and researched projects. Grammar study and MCAS preparation are included. Timely completion of both regular homework assignments and outside readings are required. Shop week homework will be assigned.

*Students who did not take College English I must pass an entrance test to take this course.

STRUCTURE OF THE ENGLISH LANGUAGE

Grade 10 Course #2512 Q.P. 1.00 1.00 Credit

This course is designed for those students who have completed the Grade 9 STRUCTURES OF THE ENGLISH LANGUAGE course and who have been recommended by the Department of Special Education.

INCLUSION ENGLISH II

Grade 10, Course #2612 Q.P. 1.00 1.00 Credit

*This course is an inclusion program team taught by the English Department and the Special Education Department. Assignment of students in need of special education is by approval of the Department of Special Education. Section of non-special needs participants is by recommendation and random selection. The curriculum content is parallel to the course of description of English II. Shop week homework is assigned.

STRUCTURE OF THE ENGLISH LANGUAGE TITLE 1

Grade 10, Course #3512 Q.P. 1.00 1.00 Credit

This course is designed equal to the Grade 9 Title 1 Structures course and is not an elective. Placement of students in this class is based upon diagnostic testing, teacher referrals and referrals from the English and Guidance Departments.

LEARNING CENTER ENGLISH II

Grade 10, Course # 2502 Q.P. 1.00 1.00 Credit

This course is taught by the Special Needs Department. Assignment of students in need of special education is by approval of the Department of Special Education.

READING/LANGUAGE LAB II

Grade 10, Course #3042 Q.P. 1.00 1.00 Credit

The Reading/Language Lab provides programs for students experiencing difficulties in reading and writing skills. Emphasis will be placed on comprehension skills and strategies in various literary genres. The literature in this course mirrors that of the English Department. Students will learn how to develop basic sentence structure, word usage, topic sentences and paragraphs in order to master open response questions and achieve competence in essay writing for the MCAS. The Reading/Language Lab is not an elective course. Students are selected based on diagnostic test scores, referrals, and/or Individual Education Plans. Shop week homework will be assigned.

ENGLISH III

Grade 11, Course #2013 Q.P. 1.00 1.00 Credit

Students will review and sharpen grammar and writing skills leading to the development of paragraphs and essays. The study of literature in the four genres -novel, short story, drama, and poetry - is used to develop critical thinking. Nonfiction materials are used for a researched project. Students will identify and analyze literary elements and examine journalistic style. Homework assignments are part of the student's grade. Shop week homework will be assigned.

COLLEGE ENGLISH III

Grade 11, Course #2023 Q.P. 1.10 1.00 Credit

This course is the third year of the college preparatory pathway designed for those students who may be considering technical school or college after graduation. Traditional grammar and usage, vocabulary and test-taking strategies are taught. A research paper and/or presentation is required. Investigation into literature is historical and based on American classics. The timely completion of regular homework assignments and outside readings are required.

TECH PREP/COLLEGE PREP ENGLISH III

Grade 11, Course #2033 Q.P. 1.10 1.00 Credit

This course is designed for those students who are enrolled in the Tech Prep Program. The program of study links the last two years of high school with college. Tech Prep students who fulfill the requirements of the program may earn college credit. In addition to literature, writing and vocabulary, the students work on various projects through a team approach to problem-solving. Field trips to two-year technical and community colleges are included in the program.

INCLUSION ENGLISH III**Grade 11, Course #2613****Q.P. 1.00****1.00 Credit**

This is an Inclusion program team-taught by the English Department and the Special Education department. Assignment of students in need of special education is by approval of the Special Education Department. The selection of non-IEP students is by recommendation and random placement. The curriculum content is identical to English III.

LEARNING CENTER ENGLISH III**Grade 11, #2503 Q.P. 1.00****1.00 Credit**

This course is taught by the Special Needs Department. Assignment of students in need of special education is by approval of the Department of Special Education.

READING/LANGUAGE LAB III**Grade 11, Course #3063 Q.P. 1.00 1.00 Credit**

The Reading/Language Lab provides programs for students experiencing difficulties in reading and writing skills. Emphasis will be placed on comprehension skills and strategies in various literary genres. The literature in this course mirrors that of the English Department. Students will learn how to develop basic sentence structure, word usage, topic sentences and paragraphs in order to master open response questions and achieve competence in essay writing for the MCAS. The Reading/Language Lab is not an elective course. Students are selected based on diagnostic test scores, referrals, and/or Individual Education Plans. Shop week homework will be assigned.

ENGLISH IV**Grade 12, Course #2014 Q.P. 1.00 1.00 Credit**

Students will benefit from a practical approach to both writing and literature. Current literature in the four genres and nonfiction are used to enhance the student's comprehension skills and to develop methods and strategies to interpret what they read. Writing practice focuses on clarity and effective use of language. Projects may include personal essays, reviews, creative writing, and researched reports. Homework assignments are part of the student's grade. Shop week homework is assigned.

COLLEGE ENGLISH IV**Grade 12, Course #2024 Q.P. 1.10 1.00 Credit**

This course is the final year of the college preparatory pathway designed for those students who may be planning to attend a technical school or college after high school. The student will study types of writing through literature. Investigation into literature is historical and based on classic world and British selections. Writing projects include a researched paper. Timely completion of regular homework assignments and outside readings is required. Shop week homework is assigned each week.

TECH PREP/COLLEGE PREP ENGLISH IV

Grade 12, Course #2034 Q.P. 1.10 1.00 Credit

This course is a continuation of the **TECH PREP/COLLEGE PREP III** course. An analytical approach to literature, writing and research is taken. Projects will develop and promote problem-solving and critical thinking skills. The goal of this two-year program is to prepare students for entry into a two-year technical or community college.

INTRODUCTION TO COLLEGE ENGLISH

Grade 12, Course #2054 Q.P. 1.10 1.00 Credit

This course is designed for the senior who has plans for higher education. Students who have taken college preparatory courses will be given preference.

The composition component of this course emphasizes writing skills associated with expository prose, through the frequent writing of short papers. Introduction and utilization of the "Process of Writing" through the format of modeling will be the major method implemented for student work. Journals will be used as a means of analyzing published work and promoting critical thinking skills. A research project is an additional requirement. A variety of literary works will be examined.

Because this course simulates a college level course, students are expected to submit written work on time, and complete outside readings. Shop week assignments are not only necessary but an integral part of the course.

LEARNING CENTER ENGLISH IV

Grade 12 Course #2504 Q.P. 1.00 1.00 Credit

This course is taught by the Special Needs Department. Assignment of students in need of special education is by approval of the Department of Special Education.

READING/LANGUAGE LAB IV

Grade 12, Course #3064 Q.P. 1.00 1.00 Credit

The Reading/Language Lab provides programs for students experiencing difficulties in reading and writing skills. Emphasis will be placed on comprehension skills and strategies in various literary genres. The literature in this course mirrors that of the English department. Students will learn how to develop basic sentences structure, word usage, topic sentences and paragraphs in order to master open response questions and achieve competence in essay writing for the MCAS. The Reading/Language Lab is not an elective course. Students are selected based on diagnostic test scores, referrals, and/or Individual Education Plans. Shop week homework will be assigned.

LITERATURE OF THE FANTASTIC

Grade 12, Course #2124 Q.P. 1.00 1.00 Credit

This course focuses upon world literature in the fantastic tradition: fantasy, horror, and science fiction. Students will read fables, folk tales, legends, ancient mythology, and novels; furthermore, they will examine the reasons why fantastic literature has had such a long and lasting heritage. Emphasis will be placed on Joseph Campbell's "Hero's Journey" and how it can be applied to literature, creative writing, and film. Students will examine works by such writers as J.R.R. Tolkien, Ray Kinsella, George Lucas, and others. Activities will include discussions, writing assignments, term projects, original fiction, and outside reading. This is not an elective course and may be taken in lieu of English IV.

AMERICAN MEDIA EXPOSED (double period) - ELECTIVE

Grade 12, Course #2814 Q. P. 1.00 1.00 Credit

Students in this course will explore a wide variety of media in American culture from sensational tabloids, to trash TV and the kaleidoscope of film. Students will seek to understand how the ever-present media affects their life

DRAMA WORKSHOP

Grade 12, Course #2044 Q.P. 1.00 1.00 Credit

This course offers a unique combination of interactive drama activities and creative writing. Drama activities include theater games, constructing a mask, pantomime, improvisation, comedy, speeches, debates, monologues, dialogues, storytelling, performance poetry, dance and music. Participation and performance are key elements.

The creative writing component is based on the premise that each person is an author and has a story to tell. This writing workshop provides a variety of catalysts to excavate writing fuel. Students will explore diverse writing strategies, prompts and exercises while learning tips from writing experts. Shop week homework will be assigned each week.

Field trips include the Worcester Art Museum and the Foothills Theater.

MATH

ALGEBRA I

Grade 9 Course #4271 Q.P. 1.00 1.00 Credit

This course is designed for the student who has not taken a prior Algebra course. Topics include the set of integers and the use of variables, the solving of linear equations and modeling.

ALGEBRA I HONORS**Grade 9, Course #4371 Q.P. 1.10 1.00 Credit**

This course covers Algebra I topics and moves at a quick pace. It is designed for academically advanced students who are motivated to achieve an in-depth and comprehensive understanding of algebraic concepts.

GEOMETRY HONORS**Grade 9, Course #4191 Q.P. 1.10 1.00 Credit**

This course is designed for the student who has mastered Algebra I concepts and who is motivated to achieve an in-depth and comprehensive understanding of the geometric concepts. It is a course for academically advanced students using higher critical thinking and problem-solving skills.

ALGEBRA I INCLUSION*Grade 9, Course #4671 Q.P. 1.00 1.00 Credit**

This course is identical to the Algebra I course. Inclusion classes are team-taught with the Special Education Department to better meet the needs of some students. This class is for those students whose Individual Education Plan indicates an inclusion class for Algebra I.

ALGEBRA 1/TITLE 1**Grade 9, Course #4581 Q.P. 1.00 1.00 Credit**

This course parallels the Algebra I course as listed above. Additional hours are assigned to the Title I classes over the two-week period.

LEARNING CENTER MATH**Grade 9, Course #4511 Q.P. 1.00 1.00 Credit**

The Special Education Department teaches these courses. Assignment of students in need of special education is by approval of the Department of Special Education only.

GEOMETRY**Grade 10, Course #4092 Q.P. 1.00 1.00 Credit**

Geometry is the required course for sophomores who have not already completed a high school Geometry course. Students will develop an understanding of dimensional concepts and will gain knowledge and feeling for geometry as a pure mathematics discipline.

GEOMETRY HONORS

Grade 10, Course #4192 Q.P. 1.10 1.00 Credit

This course is an accelerated course that not only focuses on the key topics that provide a strong foundation in the essentials of geometry but also provides many opportunities for the student to apply concepts to real world problems. It also offers students the opportunity to work on projects using the TI 92 Geometry Calculator.

GEOMETRY INCLUSION

Grade 10, Course #4692 Q.P. 1.00 1.00 Credit

This course is identical to the Geometry course. Inclusion classes are team-taught with the Special Education Department to better meet the needs of some students. This class is for those students whose Individual Education Plan indicates an inclusion class for Geometry.

GEOMETRY/TITLE 1

Grade 10 Course #4582 Q.P. 1.00 1.00 Credit

This course parallels the Geometry course as listed above. However, additional hours are assigned to the Title I classes.

LEARNING CENTER MATH II

Grade 10, Course #4522 Q.P. 1.00 1.00 Credit

The Special Education Department teaches these courses. Assignment of students in need of special education is by approval of the Department of Special Education only.

ALGEBRA II HONORS

Grade 10 & 11 Course # 4383 Q.P. 1.10 1.00 Credit

This accelerated course is designed for the student that has successfully completed the Honors Geometry course as a freshman. Students will study linear systems of equations, radicals and quadratic functions. The exploration of rational expressions, trigonometric functions, complex numbers and discrete mathematics are an integral part of this course. Teacher recommendation is required.

TRIGONOMETRY

Grade 11 – Course #4103 Q.P. 1.00 1.00 Credit

This is a comprehensive course of study involving conceptual understanding of the characteristics and relationships of right and oblique triangles. A prime objective is to promote an understanding of the logical, detailed and sequential development of the structure that underlies the study of the triangle. The fundamental principles will enable the student to be better prepared to solve practical problems that demand creative trigonometric approach. This course is recommended for the mature student who is considering post-secondary education.

Pre-requisite 75 or better in Algebra II.

ALGEBRA II

Grade 11 – Course # 4083 Q.P. 1.00 1.00 Credit

This course is designed for the average student who has successfully completed Algebra I. A comprehensive coverage of linear systems of equations, as well as radical expressions and quadratic functions is an integral part of the course.

ALGEBRA I/ALGEBRA II

Grade 11 – Course #4183 Q.P. 1.00 1.00 Credit

This course is designed to cover the basics of Algebra I (a review of solving equations, factoring and linear functions) and introduce the basic Algebra II topics (Systems of linear equations and quadratic functions) This course is for students who require a review of Algebra I skills.

MCAS PREP & REVIEW/TITLE I

Grade 11 – Course #4583 Q.P. 1.00 1.00 Credit

This course is designed for students that need continued remediation in Algebra and Geometry necessary to be successful on the MCAS exam. As in MCAS Prep and Review I students will continue to examine test-taking strategies as well as use technology and learn through real-world applications. Students are placed in this course by recommendation ONLY!

INCLUSION ALGEBRA/GEOMETRY

Grade 11 – Course #4683 Q.P. 1.00 1.00 Credit

This is an Inclusion program team-taught by the Math Department and the Special Education Department. This course is designed for students to demonstrate competency in the Algebra/Geometry frameworks from D.O.E. Assignment of students in need of Inclusion services is by approval of the Special Education Department. The selection of non-IEP students is by recommendation and random placement.

TITLE I Applied Algebra

Grade 12, Course #4564 Q.P. 1.00 1.00 Credit

This course follows the exact curriculum of Applied Algebra with modifications.

This course is an extension of the Algebra I course focusing on applied technical related Algebra problems. Students will review and apply their algebraic skills to real-life problems. In addition, students will be preparing for the everyday mathematics skills that they will encounter after high school.

TITLE 1 ALGEBRA/GEOMETRY REVIEW

Grade 11 – Course #4583

Q.P. 1.00

1.00 Credit

This course is an additional review and preparation program for students most at risk of failing to meet the state requirements of the MCAS testing program. The curriculum is designed to align itself with the Massachusetts Frameworks in Algebra and Geometry.

LEARNING CENTER MATHEMATICS III

Grade 11, Course #4533

Q.P. 1.00

1.00 Credit

The Special Education Department teaches these courses. Assignment of students in need of special education is by approval of the Department of Special Education only.

TRIGONOMETRY

Grade 12 Course #4104

Q.P. 1.10

1.00 Credit

This is a comprehensive course of study involving conceptual understanding of the characteristics and relationships of right and oblique triangles. A prime objective is to promote an understanding of the logic, detailed and sequential development of the structure that underlies the study of the triangle. The fundamental principles will enable the student to be better prepared to solve practical problems that demand a creative trigonometric approach. This course is recommended for the mature student who is considering post-secondary education. Pre-requisite: 75 or better in Algebra I

COLLEGE MATHEMATICS

Grade 12, Course #4194

Q.P. 1.10

1.00 Credit

This course is designed for the highly motivated and exceptional mathematics students who have demonstrated a keen aptitude for math. This course covers the traditional topics of a college math program. Students **MUST** qualify for admittance to this course by:

*passing a qualifying exam with a minimum grade of 75

*recommendations from their previous teachers (mathematics & shop)

MCAS PREP & REVIEW/TITLE I

Grade 12, Course #4584

Q.P. 1.00

1.00 Credit

This course is designed for students that need continued remediation in Algebra and Geometry necessary to be successful on the MCAS exam. As in MCAS Prep and Review I students will continue to examine test-taking strategies as well as use technology and learn through real-world applications. Students are placed in this course by recommendation **ONLY!**

PRE-CALCULUS

Grade 12, Course #4204

Q.P. 1.10

1.00 Credit

This course features an in-depth systematic study of each basic class of functions-algebra, exponential, logarithmic and trigonometric-along with vigorous problems involving applications and proofs. It is designed for the over-achiever in mathematics. A solid mathematics background is required to register for this course as well as teachers recommendations.

ALGEBRA II

Grade 12, Course #4174

Q.P. 1.00

1.00 Credit

This course is designed for the average student who has successfully completed Algebra I. A comprehensive coverage of linear systems of equations, as well as radical expressions and quadratic functions is an integral part of the course.

LEARNING CENTER MATHEMATICS IV

Grade 12, Course #4544

Q.P. 1.00

1.00 Credit

The Special Education Department teaches these courses. Assignment of students in need of special education is by approval of the Department of Special Education only.

SURVIVAL MATH SKILLS AFTER HIGH SCHOOL – ELECTIVE

Grade 12, Course #4814

Q.P. 1.00 1.00 Credit

This course prepares students for the every day mathematics skills that they will encounter after high school. Students will keep a checkbook, reconcile bank statements, study credit card options, investigate insurance options for auto, home, health and life insurance, prepare budgets and work toward financial responsibility

HEALTH/PHYSICAL EDUCATION

PHYSICAL EDUCATION I/HEALTH I

Grade 9, Course #7211/7221

Q.P. 1.00

.50 Credit

Lifetime health, smoking, alcohol, Heart to Heart Program, Sexual harassment, Total Fitness Program, First Aide/Safety guidelines.

Team and lifetime sports, including basketball, volleyball, soccer, football, floor hockey, fitness with fitness test, weight/cardio training, conditioning, ½ mile run, speedball, ultimate Frisbee, badminton and hacky sac, tae bo, aerobics, team handball and power walking.

PHYSICAL EDUCATION II/HEALTH II

Grade 10, Course #7212/7222 Q.P. 1.00 .50 Credit

Lifetime health, drug abuse, stress/stress management, violence/violence prevention, reproduction health (STDS), food/nutrition, CPR guidelines, DARE program, aging, death and suicide.

Team and Lifetime sports including basketball, volleyball, soccer, football, floor hockey, fitness with fitness test, weight/cardio training, conditioning, ½ mile run, speedball, ultimate Frisbee, badminton, hacky sac and tae bo, aerobics, team handball and power walking.

PHYSICAL EDUCATION III

Grade 11, Course #7113 Q.P. 1.00 .50 Credit

Team and lifetime sports including basketball, volleyball, soccer, football, floor hockey, fitness with fitness test, weight/cardio training, conditioning, ½ mile run, speedball, ultimate frisbee, badminton, hacky sac and tae bo, aerobics, team handball and power walking.

PHYSICAL EDUCATION IV

Grade 12, Course #7114 Q.P. 1.00 .50 Credit

Team and Lifetime sports including basketball, volleyball, soccer, football, floor hockey, fitness with fitness test, weight/cardio training, conditioning, ½ mile run, speedball, ultimate Frisbee, badminton, hacky sac and tae bo, aerobics, team handball and power walking.

CPR - ELECTIVE

Grade 12, Course #7804 Q.P. 1.00 .50 Credit

Upon completion of this half-year course students will be certified to administer CPR upon completion of this course. They will learn the technical aspects and performance skills of cardiopulmonary resuscitation and foreign body airway obstruction management. They will also learn how to use an automated external defibrillator, which is an important step toward preventing death from sudden cardiac arrest. Students will be able to demonstrate the Heimlich maneuver, treat fractures, identify degrees of thermal burns and administer appropriate treatment and know how to treat chemical burns. The second half of the year they will take gym.

SCIENCE

GENERAL PHYSICS

Grade 9, Course #6211 Q.P. 1.00 1.00 Credit

This is a double period intense investigation into several fundamental physics topics. The course incorporates a variety of inquiry-based and laboratory-based methods in order to assist students to develop critical thinking and problem-solving skills in the following areas:

Motion and Forces

1. Conservation of Energy and Momentum
2. Heat and Heat Transfer
3. Wave Energy
4. Electromagnetism
5. Electromagnetic Radiation

INCLUSION GENERAL PHYSICS

Grade 9, Course #6611 Q.P. 1.00 1.00 Credit

This is an Inclusion program team taught by the Science Department and the Special Education Department. Assignment of students in need or special education is by approval of the Department of Special Education. Selection of non-special needs participants is by recommendation and random selection. Curriculum content is parallel to the course description of Course #6111.

LIFE SCIENCE

Grade 9, Source #6221 Q.P. 1.00 1.00 CREDIT

This course is designed as an in-depth comprehensive study of central biological principles and processes. Through a variety of laboratory-based experiences students will be given opportunities to develop advanced analytical and critical-thinking skills. General biological themes, cellular biology, taxonomy, evolution and ecology will be emphasized.

INCLUSION LIFE SCIENCE

Grade 9, Course #6621 Q.P. 1.00 1.00 Credit

*This course is an inclusion program team taught by the Science Department and Special Needs Department. Assignment of students in need of special education is by approval of the Department of Special Education. Selection of non-special needs participants is by recommendation and random selection. Curriculum content is parallel to course description #6221.

LIFE SCIENCE HONORS

Grade 9, Course #6261 Q.P. 1.10 1.00 CREDIT

This course is designed as an in-depth comprehensive study of central biological principles and processes. Through a variety of laboratory-based experiences students will be given opportunities to develop advanced analytical and critical-thinking skills. General biological themes, cellular biology, taxonomy, evolution and ecology will be emphasized.

BOTANY

Grade 11, Course #6123 Q.P. 1.00 1.00 Credit

This course is designed to be an introductory course in Botany. This course will give the students an opportunity to take a lab science without having to have the required math skills for chemistry and applied physics. Many special education students want to go on to higher education, which requires that they have four years of a lab science, this course will help them achieve that goal. The students will learn the classification and life cycles of the twelve Phylums in the kingdom Plantae, as well as the five Phylums in the kingdom Fungi. They will gain a better understanding of the roles plants play in our

ecological systems as well as their everyday lives. Through hands-on investigations and laboratory work they will gain a deeper knowledge of plant genetics and biodiversity.

QUALIFICATIONS:

- A. Life Science
- B. Biology

PHYSICS/TECHNOLOGY HONORS

Grade 9, Course #6131

Q.P. 1.10

1.00 Credit

The Freshman Honors Physics/Technology course is designed to allow those freshman who are highly motivated and possess strong science and math backgrounds the opportunity to take an accelerated science course early in their high school career. These students will be expected to apply their knowledge of Algebra and English writing skills to a variety of inquiry-based laboratory situations, while developing their critical thinking and problem solving skills. Students who choose this course must be willing to accept a larger daily work load than the other science courses that are offered. Topics of review will include mechanics, dynamics, gravitation, conservation of energy and momentum, gas laws, kinetic theory, graphical analysis, light and wave theory, thermodynamics and electromagnetism.

LEARNING CENTER SCIENCE I

Grade 9, Course #6521

Q.P. 1.00

1.00 Credit

These courses are taught by the Special Education Department. Assignment of students in need of special education is by approval of the Department of Special Education.

BIOLOGY

Grade 10, Course #6122

Q.P. 1.00

1.00 Credit

Biology is the study of living things, and living things are part of everyday experiences. An understanding of Biology, therefore, results in a better understanding and appreciation of life. All concepts are presented with the most up-to-date information available. In addition, practical concepts are presented to help make Biology more real for students.

The course focuses on the major life processes. Each process is discussed using a variety of examples from all types of living things but with particular attention given to humans. In this way, students gain insight that all organisms, including themselves, carry out the same live functions.

The course is, therefore, built around Standards of the Biology Frameworks:

1. General Principals of Biology.
2. Review Chemistry of Life

3. Genetics & Heredity
- 4 Cell Biology
5. Review Anatomy and Physiology.

INCLUSION BIOLOGY

Grade 10, Course #6632 Q.P. 1.00 1.00 Credit

*This course is an inclusion program team taught by the Science Department and Special Needs Department. Assignment of students in need of special education is by approval of the Department of Special Education. Selection of non-special needs participants is by recommendation and random selection. Curriculum content is parallel to course description #6122.

HONORS BIOLOGY

Grade 10, Course # 6222 Q.P. 1.10 1.00 Credit

This course is designed for the academically advanced students who are motivated to achieve an in-depth and comprehensive understanding of biological principles and processes. A variety of inquiry-based and laboratory-based methods will be emphasized in order to assist students to develop innovative critical-thinking and problem-solving skills. Students are expected to apply their knowledge and skill on biological and technical levels in the areas of cellular biology, genetics, evolution, ecology, microorganisms, invertebrates, vertebrates, and human biology.

LEARNING CENTER SCIENCE II

Grade 10, Course #6522 Q.P. 1.00 1.00 Credit

These courses are taught by the Special Education Department. Assignment of students in need of special education is by approval of the Department of Special Education.

INVESTIGATION IN EARTH SCIENCE I

Grade 11, Course #6313 Q.P. 1.00 .50 Credit

INVESTIGATION IN EARTH SCIENCE II

Grade 11, Course #6323 Q.P. 1.00 .50 Credit

Students in these courses will investigate the nature of science, matter and its changes, minerals, and rocks. The changing surface of the earth, and the earth's internal processes, including earthquakes, volcanoes and plate tectonics will be studied.

INVESTIGATION /EARTH SCIENCE INCLUSION

Grade 11, Course # 6613 Q.P. 1.00 .50 Credit

This course is an inclusion program team taught the Science Department and the Special

Needs Department. Assignment of students in need of special education is by approval of the Department of Special Education. Selection of non-special needs participants is by recommendation or random selection. Curriculum content is parallel to course description #6313.

APPLIED PHYSICS (PT) I

Grade 11, Course #6173 Q.P. 1.10 1.00 Credit

This course was developed by the Center for Occupational Research and Development to provide students with an understanding of the physical principles underlying modern technology. This course will, through a laboratory experience, study the principles behind force, work, rate, resistance, energy, and power. The students electing this course must have an Algebra I background or be taking Algebra I.

CHEMISTRY

Grade 11, Course #6153 Q.P. 1.10 1.00 Credit

The chief aim of this course is to broaden a student's knowledge of Chemistry by applying the role of chemical process in his daily life. It seeks to understand why chemical operations proceed the way they do. Therefore, it poses the never ending question of: How and Why?

LEARNING CENTER SCIENCE III

Grade 11, Course 6503 Q.P. 1.00 .50 Credit

These courses are taught by the Special Education Department. Assignment of students in need of special education is by approval of the Department of Special Education.

INVESTIGATION IN EARTH SCIENCE I

Grade 12, Course #6314 Q.P. 1.00 .50 Credit

INVESTIGATION IN EARTH SCIENCE II

Grade 12, Course #6324 Q.P. 1.00 .50 Credit

Students in these courses will encounter topics involving the Earth's air and water. This will include the atmosphere, weather and climate, and oceanography, as well as a concentration on the study of Astronomy. Other topics will include exploring space, the sun-moon relationship, the solar system, and the stars and galaxies. If time permits a study of fossils, geological time and environmental impact will be touched upon.

APPLIED PHYSICS (PT) I

Grade 12, Course #6174 Q.P. 1.10 1.00 Credit

This course was developed by the Center for Occupational Research and Development to provide students with an understanding of the physical principles underlying modern technology. This course will, through a laboratory experience, study the principles behind force, work, rate, resistance, energy and power. The students electing this course must have an Algebra I background or be taking Algebra I.

CHEMISTRY

Grade 12, Course #6144 Q.P. 1.10 1.00 Credit

The chief aim of this course is to broaden a student's knowledge of Chemistry by applying the role of chemical process in his daily life. It seeks to understand why chemical operations proceed the way they do. Therefore, it poses the never ending question of: How and Why?

LEARNING CENTER SCIENCE IV

Grade 12, Course #6504 Q. P. 1.00 .50 Credit

These courses are taught by the Special Education Department. Assignment of students in need of special education is by approval of the Department of Special Education

ANATOMY & PHYSIOLOGY – ELECTIVE

Grade 12, Course #6814 Q.P. 1.10 1.00 Credit

This course investigates the major organ systems of the human body. Anatomy will identify the individual parts of each system and physiology will relate the function of these parts to the system. Students will gain an understanding of these organ systems in maintaining the body's overall health.

The students who would like to continue their education after graduation and who need certain science courses, can elect to take the double period classes while those who still like take gym can select the single period science courses.

INTRODUCTION TO FORENSIC SCIENCE – ELECTIVE

Grade 12, Course #6824 Q.P. 1.00 1.00 Credit

Forensic science is the application of natural sciences to criminal and civil laws. This course is designed to introduce students to the basics of the Forensic Sciences. Since forensic science is a wide and continuously growing field, students will look at what forensic science is and some of its aspects. Students will get a glimpse of the various services that crime labs provide for the law. Such services include fingerprint comparisons, blood analysis, hair and fiber comparisons, etc. Students will not only see the science behind a forensic investigation, but will also learn to enhance their powers of observation, comparison, and deduction.

Students will be selected for the course by lottery.

CHEMISTRY II

Grade 12, Course #6154 Q.P. 1.00 1.00 Credit

Chemistry II is a continuation of Chemistry I with an emphasis on weekly practical lab experimentation for discovery. Labs will investigate a number of consumer items on the

market such as food and health products, so the students could compare products effectiveness with cost analysis. Other principles to be studied will include the Gas Laws; reaction rates; and chemical equilibrium; acids, bases, and salts; oxidation-reduction reactions; and nuclear chemistry.

INTRO TO PHYSICS

Grade 12, Course #6118 Q.P. 1.00 .50 Credit

This course will develop a strong relationship between Math and Science. It will be geared toward the serious Science student and will encourage students to understand, calculate, and interpret scientific problems using both English and metric units. The student will work graphically and mathematically with vectors, kinetic and potential energy, temperature, heat, and the gas laws.

SOCIAL STUDIES

AMERICAN HISTORY I: THE REVOLUTION THROUGH RECONSTRUCTION (1763-1877)

Grade 9, Course #5151 Q.P. 1.00 1.00 Credit

Students in this course will examine the historical and intellectual origins of the United States during the Revolutionary and Constitutional eras. Important political, economic, and Social factors that contributed to the onset of the American Revolution will be studied, as well as the writing of and key ideas of the United States Constitution. America's westward expansion, the establishment of political parties, and the contributions of important Americans to the development of our nation will be presented.

AMERICAN HISTORY I HONORS: THE REVOLUTION THROUGH RECONSTRUCTION (1763-1877)

Grade 9, Course #5251 Q.P. 1.10 1.00 Credit

This course will be offered to the motivated student who has an interest in doing outside readings, project work and an accelerated classroom pace in the areas mentioned above.

AMERICAN HISTORY I INCLUSION: THE REVOLUTION THROUGH RECONSTRUCTION (1763-1877)

Grade 9, Course #5651 Q.P. 1.00 1.00 Credit

*This course is an inclusion program team taught by the Social Studies Department and Special Education Department. Assignment of students in need of special education is by approval of the Department of Special Education. Selection of non-special needs participants is by recommendation and random selection.

LEARNING CENTER HISTORY I

Grade 9, Course #5501 Q.P. 1.00 1.00 Credit

This course is taught by the Special Education Department. Assignment of students in need of special education is by approval of the Department of Special Education only.

AMERICAN HISTORY II

Grade 10, Course #5152 Q.P. 1.00 1.00 Credit

In this course, students will develop an understanding of the major individuals and events that shaped world affairs from c 18915 to the present. The important areas of concern are as follows: Democratic and social reform in Europe; the rising European Nationalism; Western Imperialism; Japan's Modernization; World War One and the Russian Revolution; the Great Depression; Rise of Communism; Fascism; World War Two; the Cold War Era and the end of European Colonialism. In addition, time will be spent on the Korean War and Vietnam War; the collapse of the Soviet Union, and the current issues of nationalism and militarism and the ever changing world economy.

AMERICAN HISTORY II HONORS

Grade 10, Course #51262 Q.P. 1.10 1.00 Credits

With teacher recommendations, the student that has an interest in World History and wants to enhance his knowledge through reports, class projects and outside readings as well as an accelerated classroom approach should consider taking this course.

AMERICAN HISTORY II INCLUSION

Grade 10, Course #5652 Q.P. 1.00 1.00 Credit

*This course is an inclusion program team taught by the Social Studies Department and Special Needs Department. Assignment of students in need of special education is by approval of the Department of Special Education. Selection of non-special needs participants is by recommendation and random selection. Curriculum content is parallel to Course #5152.

LEARNING CENTER HISTORY II

Grade 10, Course #5502 Q.P. 1.00 1.00 Credit

This course is taught by the Special Education Department. Assignment of students in need of special education is by approval of the Department of Special Education only.

MODERN WORLD HISTORY

Grade 11, Course #5133 Q.P. 1.00 .50 Credit

In this course, the students will develop an understanding of major individuals and events that shaped World Affairs from the 20th Century and beyond. Japan's Modernization; China's Development into a World Power; The Middle East Issues; Democratic and Social Reforms in Europe; the Rise and Fall of Communism in the Soviet Union; as well as current issues of Terrorism; Global Economy, Militarism and Nationalism will be explored.

Inclusion MODERN WORLD HISTORY**Grade 11, Course #5633****Q.P. 1.00****.50 Credit**

This is an inclusion program team taught by the Social Studies Department and the Special Education Department. Assignment of students in need of special education is by approval of the Special Education Department. Selection of non-IEP students is by recommendation or random selection. Curriculum content is parallel to course #5133.

MODERN WORLD HISTORY HONORS**Grade 11, Course #5143****Q.P. 1.10****.50 Credit**

With teacher recommendations, the student that has an interest in Modern World History and wants to enhance his/her knowledge through reports, class projects and outside readings, along with an accelerated classroom approach, should consider taking this course.

LEARNING CENTER HISTORY III**Grade 11, Course #5523****Q. P. 1.00****.50 Credit**

This course is taught by the Special Education Department. Assignment of students in need of special education is by approval of the Department of Special Education only.

CONTEMPORARY SOCIAL PROBLEMS**Grade 12, Course #5074****Q.P. 1.00****.50 Credit**

The Contemporary Social Problems course offered Senior year will expose the student to these following units: Law and Consumer; Landlord and Tenant; Crimes and Justice; Poverty and Welfare; Youth and the Law; and Law and the City.

The student will learn about current problems of the American Society in each of the above mentioned units. Through the use of filmstrips, classroom note taking, class discussion, role playing, reading assignments, and guest speakers, the students will attain insight into some of the following key topics: landlord leases, the leases of eviction, and the rights and responsibilities of both landlord and tenant. In addition, the role of the family and child, typical juvenile crimes, the problems associated with alcohol addiction, and the juvenile court system will be examined.

CONTEMPORARY SOCIAL PROBLEMS - HONORS**Grade 12, Course #5084****Q.P. 1.10****.50 Credit**

The advanced placement course in the area of Contemporary Social Problems is a highly structured, in depth study of modern problems found in American society today. Much attention will be paid to the areas of criminal justice, the definitions of various crimes, the issue of the death penalty, the American prison system, the court system, and the complex area of

police search and seizure. In addition, the student will be exposed to the following social flaws in the topic of Youth and the Law: Child abuse--causes and services available, alcohol abuse and alcoholism, and juvenile court system. In the area of landlord and tenant, the student will be exposed to the various responsibilities and rights that both landlord and tenant share. The student will examine the parts of leases, what is meant by negligence and exactly how expensive it is today to own your own home. In the Law and the Consumer, students will be made aware of misleading advertising and what laws are currently used to control deception.

Outside reading, field trips, guest speakers, outside reports, homework assignments, classroom note taking, and discussions will be in store for the highly motivated students who choose this course.

LEARNING CENTER HISTORY IV

Grade 12, Course #5524 Q.P. 1.00 .50 Credit

This course is taught by the Special Education Department. Assignment of students in need of special education is by approval of the Department of Special Education only

AMERICAN GOVERNMENT: PAST, PRESENT AND FUTURE – ELECTIVE

Grade 12, Course #5864 Q.P. 1.00 .50 Credit

American Government: Past, Present & Future is a senior social studies elective designed to create an extended knowledge of United States government. As an expanded educational course, Bay Path students will have the opportunity to explore the basic understandings of U.S. government as well as many new and challenging ideas.

This course provides a framework for understanding the purpose, principles and practices of American Government as established by the United States Constitution. Students are expected to understand their rights and responsibilities as citizens and how to exercise these rights and responsibilities in local, state and national government.

FAMOUS MUSIC AND MUSICIANS OF AMERICA – ELECTIVE

Grade 12, Course #5844 Q.P. 1.00 .50 Credit

Students will gain insight into the major musicians and types of music that was popular and famous in America over the decades. Music of the various eras will be played in class and the people behind the music will be studied, which will enable students to realize the importance and impact of music during a particular time period on the American people (Patriotic, Jazz, Swing, Big Band Era, '50's, '60's, '70's, '80's, '90's, and today.

SENIOR ELECTIVES

****SOME ELECTIVE COURSES MAY REQUIRE FEES FOR MATERIALS****

ALL ELECTIVES MUST BE PASSED.

SURVIVAL MATH SKILLS AFTER HIGH SCHOOL

Grade 12, Course #4814

Q.P. 1.00

1.00 Credit

This course prepares students for the every day mathematics skills that they will encounter after high school. Students will keep a checkbook, reconcile bank statements, study credit card options, investigate insurance options for auto, home, health and life insurance, prepare budgets and work toward financial responsibility

ANATOMY AND PHYSIOLOGY(single period)

Grade 12, Course #6814

Q.P. 1.00

.5 Credit

This course investigates the major organ systems of the human body. Anatomy will identify the individual parts of each system and physiology will relate the function of these parts to the system. Students will gain an understanding of these organ systems in maintaining the body's overall health.

The students who would like to continue their education after graduation and who need certain science courses, can elect to take the double period classes while those who still like to take gym can select the single period science courses.

CPR

Grade 12, Course #7804

Q.P. 1.00

.50 Credit

Upon completion of this half-year course students will be certified to administer CPR upon completion of this course. They will learn the technical aspects and performance skills of cardiopulmonary resuscitation and foreign body airway obstruction management. They will also learn how to use an automated external defibrillator, which is an important step toward preventing death from sudden cardiac arrest. Students will be able to demonstrate the Heimlich maneuver, treat fractures, identify degrees of thermal burns and administer appropriate treatment and know how to treat chemical burns. The second half of the year they will take gym.

****SOME ELECTIVE COURSES MAY REQUIRE FEES FOR MATERIALS****

ALL ELECTIVES MUST BE PASSED.

VOCATIONAL COURSE DESCRIPTION GUIDE

HEATING/AIR CONDITIONING & REFRIGERATION SHOP

HEATING – VENTILATION – AIR CONDITIONING – REFRIGERATION SHOP I

Grade 9, Course #0971 Q.P. 1.00 4.50 Credits

Freshmen will practice safe work procedures. They will use a variety of hand tools. They will solder, braze and learn to install ACR pipe. The students will practice safe wiring and learn to wire several circuits.

HEATING-VENTILATION-AIR CONDITIONING- REFRIGERATION RELATED SCIENCE I

Grade 9, Course #1971 Q.P. 1.00 1.00 Credit

The Freshmen will become familiar with good safety practices. They will identify and learn the use of hand tools. They will know the use of specialized tools and electrical test meters. The students will be able to identify types and sizes of refrigeration tubing and fittings. They will learn the basic refrigeration cycle and components. The students will learn electrical theory, concepts of matter and heat transfer.

HEATING-VENTILATION-AIR CONDITIONING-REFRIGERATION SHOP II

Grade 10, Course #0972 Q.P. 1.00 4.50 Credits

The Sophomores will test refrigerator parts, build and wire a working refrigerator, and practice sealed system repair procedures. They will also diagnose and repair room air conditioners and car air conditioners. Refrigerant recovery and electrical troubleshooting are emphasized.

HEATING-VENTILATION-AIR CONDITIONING-REFRIGERATION RELATED SCIENCE II

Grade 10, Course #1972 Q.P. 1.00 1.00 Credit

The Sophomores will learn basic refrigeration. They will understand the controls,

construction and operating principles for domestic refrigerators, freezers, and room air conditioners.

The students will learn the operation and individual components of split phase, permanent split capacitor, multiple speed, and shaded-pole motors.

The students will be made familiar with various refrigerants, and procedures for evacuation and recharging refrigeration systems.

HEATING-VENTILATION-AIR CONDITIONING-REFRIGERATION SHOP III

Grade 11, Course #0973 Q.P. 1.00 4.50 Credits

The Juniors will practice safe procedures in commercial refrigeration service and central air conditioning service. They will install commercial condensing units and evaporators, and install and adjust pressure sensing and expansion devices. They will perform troubleshooting procedures on central air conditioning systems and heat pumps.

HEATING-VENTILATION-AIR CONDITIONING-REFRIGERATION RELATED SCIENCE III

Grade 11, Course #1973 Q.P. 1.00 1.00 Credit

Juniors will study commercial refrigeration and the related controls. They will learn central air conditioning and heat pump installation, service procedures and sizing. They will prepare for and take the EPA 608 federal certification exams. They will study low voltage controls and read schematic wiring diagrams.

HEATING-VENTILATION-AIR CONDITIONING-REFRIGERATION SHOP IV

Grade 12, Course #0974 Q.P. 1.00 4.50 Credits

Seniors will practice safe procedures in diagnosing, installing, and repairing oil and gas heating systems. They will pipe an oil tank and install a forced hot water system. They will install oil burners and calculate their efficiency. They will practice wiring controls and troubleshooting.

HEATING-VENTILATION-AIR CONDITIONING-REFRIGERATION RELATED SCIENCE IV

Grade 12, Course #1974 Q.P. 1.00 1.00 Credit

Seniors will study for the Massachusetts Oil Burner Service License. They will practice determining heat loads. They will practice sizing and estimating the cost of heating systems. They will learn how to wire an oil burner system.

AUTO COLLISION & REPAIR TECHNOLOGY SHOP

AUTOMOTIVE COLLISION REPAIR & REFINISHING SHOP I

Grade 9, Course #0621 Q.P. 1.00 4.50 Credits

The Freshmen will learn various hand skills and knowledge to the degree that will enable

the student to work at the level of a painter's helper, in a safe and competent manner. All of the above will be hands on training. Freshmen course of study will include shop safety for the use of hand tools and power tools. Proper jacking and how to use abrasives and sandpaper along with sanding techniques, masking techniques, surface preparation, painting materials, compounding, priming, and the use of synthetic fillers.

AUTOMOTIVE COLLISION REPAIR & REFINISHING RELATED SCIENCE I

Grade 9, Course #1621 Q.P. 1.00 1.00 Credit

The Freshmen will learn how to use the various hand skills and knowledge to the degree that will enable the student to work at the level of a painter's helper in a safe manner, learning how to protect the student from the dangers in the trade areas.

Students will be able to read about various hand tools and materials from various books in the related room. Audio visual aids and trade magazines will also be used, as well as lectures from the instructor.

Freshmen will be able to learn about various hand tools and materials to be able to complete the above objectives such as safety precautions for the following usage of: hammers, dollies, wrenches, ratchets, and sockets, as well as screw drivers, pliers, cutting shears, and vise grips.

AUTOMOTIVE COLLISION REPAIR & REFINISHING SHOP II

Grade 10, Course #0622 Q.P. 1.00 4.50 Credits

The Sophomores will learn, with hands on training, how to acquire knowledge of the various skills which enable them to become a bodyperson's helper or further his skills as a painter's helper and to follow proper safety procedures. They will also learn to recognize and repair minor collision damage and participate in spot repair and overall refinishing. All the above will be hands on training. The Sophomore course of study shall include shop safety with the use of hand tools, and automotive metals. We will also be analyzing damaged areas, and roughing procedures. They will be learning several different trade terms of the shop area and the importance of good shop habits and workmanship.

AUTOMOTIVE COLLISION REPAIR & REFINISHING RELATED SCIENCE II

Grade 10, Course #1622 Q.P. 1.00 1.00 Credit

The Sophomores will acquire knowledge of the various skills which enable them to become a bodyperson's helper or further his or her skills as a painter's helper.

Students will learn to recognize and repair minor collision damage and the art of painting and refinishing in a safe manner. The student will learn the dangers of paint and the use of protection techniques.

Students will be able to read about various hand tools and materials from various books in the related room. Audio visual aids and trade magazines will be used, as well as, lectures from the instructor.

Sophomores will be able to learn about various paint and thinners, and the dangers of each of the following: Lacquers, enamels, enamel reducers, lacquer thinners, puttys, sealers, and additives.

AUTOMOTIVE COLLISION REPAIR & REFINISHING SHOP III

Grade 11, Course #0623 Q.P. 1.00 4.50 Credits

The Junior students will learn panel replacement necessary for a large collision repair. They also will acquire the necessary knowledge and skills needed for applying the various materials used by the automotive manufacturers in a safe manner. All the above will be hands on training.

The Junior course of study will include the following: The analysis of damage and complete panel replacement. Also, geometry and fillers, torch soldering, and shrinking procedures will be learned, along with the ability to color-match the application of finishes, and general facts about custom refinishing.

AUTOMOTIVE COLLISION REPAIR & REFINISHING RELATED SCIENCE III

Grade 11, Course #1623 Q.P. 1.00 1.00 Credit

The Juniors should have acquired the knowledge to analyze the various methods of collision repair, to enable them to become an auto body repair person with a minimum of supervision.

Students should be given the opportunity to learn panel replacement necessary for a large collision repair. They also will acquire the necessary knowledge and skills needed for applying the various materials used by the automotive manufacturers.

Students will be able to read about various collision repairs form various books in the related room. Audio visual aids and trade magazines will also be used, as well as, lectures form the instructor.

The Juniors course of study will consist of analyzing damage, panel replacement, jacks, multiple jacks, and major glass replacement.

AUTOMOTIVE COLLISION REPAIR & REFINISHING SHOP IV

Grade 12, Course #0624 Q.P. 1.00 4.50 Credits

The Seniors will learn how to perform the various operations required in Repairing and Refinishing necessary to meet commercial standards in a safe manner. All training will be hands-on. The senior course of study will include the following: Collision Estimating, Unibody and Full Frame Repair using the "Chief EZ liner Classic 25" frame machine along with the Chief Universal Measuring System.

AUTOMOTIVE COLLISION REPAIR & REFINISHING RELATED SCIENCE IV

Grade 12, Course #0624 Q.P. 1.00 1.00 Credit

The Seniors should be competent enough to perform the various operations required in repairing and refinishing necessary to meet commercial standards.

Students should be acclimated with the procedures necessary for estimate writing, ordering parts and materials, scheduling of work and customer report.

Students will be able to read about various repairing and refinishing from various books in the related room. Audio visual aids and trade magazines will also be used, as well as, lectures from the instructor.

The Senior course of study is as follows: Collision Estimating, Chief EZ Liner Classic 25 use, and Frame Straightening.

AUTOMOTIVE TECHNOLOGY SHOP

AUTOMOTIVE TECHNOLOGY SHOP I

Grade 9, Course #0641 Q.P. 1.00 4.50 Credits

The Freshmen will be instructed on the safety of the shop, and whereabouts of the fire-extinguishers, the use of fire extinguishers, the fire blankets, and the emergency shut off switches. The students will also be instructed on the proper use and care of all tools and equipment, the use of power tools, the use of jacks, jacking a vehicle and the placement of a vehicle on a lift. He/she will also learn the basic parts of an automobile, and identify major automotive manufacturers on both domestic and imported vehicles. The first year student will also receive general knowledge of servicing a vehicle (checking fluids, changing oil & filter, and lubrication of all parts needed) and visual inspection of all under hood parts. They will also learn to work on the basic automotive systems such as exhaust, shocks, wheel bearings, brakes, and other minor repairs.

AUTOMOTIVE TECHNOLOGY RELATED SCIENCE I

Grade 9, Course #1641 Q.P. 1.00 1.00 Credit

The Freshmen will learn the procedures of shop and personal safety. The students will learn how to use basic hand tools. The students will learn how to change tires, balance tires, and general lubrication procedures such as servicing vehicles. The students will learn how to care for batteries, service exhaust systems, and repair front end suspension systems, such as the repairing of wheel bearings and shock absorbers. The students will learn how to service different types of brake systems.

AUTOMOTIVE TECHNOLOGY SHOP II

Grade 10 Course #0642 Q.P. 1.00 4.50 Credits

The Sophomores will review all safety factors of the shop. Depending on the learning ability of the student, he/she will be performing more difficult tasks such as: complete brake

jobs, including the use of the brake-lathe, the overhaul of the brake components, the hands on use of test equipment, and the repair of drive-line components. Sophomores will also learn the basics of front end alignment.

AUTOMOTIVE TECHNOLOGY RELATED SCIENCE II

Grade 10, Course #1642 Q.P. 1.00 1.00 Credit

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

AUTOMOTIVE TECHNOLOGY SHOP III

Grade 11, Course #0643 Q.P. 1.00 4.50 Credits

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

AUTOMOTIVE TECHNOLOGY RELATED SCIENCE III

Grade 11, Course #1643 Q.P. 1.00 1.00 Credit

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

AUTOMOTIVE TECHNOLOGY SHOP IV

Grade 12, Course #0644 Q.P. 1.00 4.50 Credits

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

AUTOMOTIVE TECHNOLOGY RELATED SCIENCE IV

Grade 12, Course #1644 Q.P. 1.00 1.00 Credit

The Senior year will be devoted to teaching the students about electrical systems, engine tune ups, alternators, voltage regulators starting circuits, wiring circuits and computer control systems. The student will learn how to diagnose and trouble shoot engine problems and how

to repair them. The student will learn how the sensors operate and what role they play.

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

CABINET & MILLWORKING SHOP

CABINETMAKING SHOP I

Grade 9, Course #0661

Q.P. 1.00

4.50 Credits

The Freshmen will learn the safe and proper use of both hand and power tools. While working on various projects, the student will learn the fundamentals of good design, and how to identify various materials. The student will also be given instruction in proper methods of measuring, how to sketch, how to make layout rods, how to fabricate templates and jigs, and how to select and install hardware.

CABINETMAKING RELATED SCIENCE I

Grade 9, Course #1661

Q.P. 1.00

1.00 Credits

The Freshmen will receive classroom instruction concerning the proper and safe methods in the operation and use of all hand tools and small power tools including the circular saw, electric drill, saber saw, reciprocating saw, belt sander, and other related power tools.

The students will be given classroom instruction in shop safety procedures, hardware, maintenance and housekeeping

The student will be given classroom instruction in related math including estimating, board foot measurement, and the proper understanding and use of the ruler.

The student will be introduced to the basic operation of certain heavier machines including the band saw, table saw, radial arm saw, drill press, thickness planer, and the jointer.

CABINETMAKING SHOP II

Grade 10, Course #0662

Q.P. 1.00

4.50 Credits

The Sophomores will learn in greater detail proper usage, safety and maintenance of woodworking machines, and how to select and sharpen bits, blades and cutters. The student's projects will be of a more complicated nature as student progresses. Special attention is given so that students complete assignments in a timely manner.

The students will learn to design and build projects such as wall shelves, bookcases, storage cabinets, tables, benches, and other household furnishings.

CABINETMAKING RELATED SCIENCE II

Grade 10, Course #1662

Q.P. 1.00

1.00 Credit

This course exposes the student to more complicated machine techniques and operations needed to develop skills in setting up specific jobs such as cabinet doors, drawers, furniture legs, planing and gluing tasks.

Students will start the second year where they left off as Freshmen, learning to operate with more skill the band saw, jointer, thickness planer/sander, and the drill press from the technical view, using the facilities of the classroom and available video subject matter.

The student will be given proper instruction in cutter and tool sharpening, machine repair and adjustment.

CABINETMAKING SHOP III

Grade 11, Course #0663

Q.P. 1.00

4.50 Credits

The Juniors will learn more advanced methods of joinery used in Cabinetmaking. The student will learn the proper layout and building of kitchen cabinets. The student will learn drawer construction using various wood joints and hardware. They will learn how to read blueprints and construct cabinets from them. The students will be encouraged to seek out of school experience through the school's Co-op program.

CABINETMAKING RELATED SCIENCE III

Grade 11, Course #1663

Q.P. 1.00

1.00 Credit

This course is more advanced, teaching the finer skills necessary to be competent and competitive.

The student will develop efficiency using time and materials wisely, develop shortcuts and methods of profitable production.

The student will develop drawing skills, learn use and preparation of blue prints, customers' sketches and shop drawings.

Qualified students are encouraged to seek out-of-school experience through the school's Co-op program.

CABINETMAKING SHOP IV

Grade 12, Course #0664

Q.P. 1.00

4.50 Credits

The Seniors will learn how to apply plastic laminator, both on counter tops and cabinets.

The student will learn how to make architectural molding. They will learn how to install cabinets on the job in the field. The students will be exposed to remodeling by doing jobs away from the school environment which will also expose them to the use of various types of staging including pump jack, roof brackets, etc. The student will also learn the safety in their use, including ladders, etc.

CABINETMAKING RELATED SCIENCE IV

Grade 12, Course #1664

Q.P. 1.00

1.00 Credit

During the last year, the student will achieve an understanding of the finer qualities needed to be successful in this field. The student will have the skills necessary to obtain an entry level position in the cabinet industry.

Students will be exposed to other building trade subjects including staging, house framing, dry wall insulation, stair building, interior trim, siding, suspended ceilings, paneling, roofing, and installation of doors and windows.

In addition, the students will receive instruction in the proper methods of seeking employment, including job application, proper attitude and attire.

CARPENTRY SHOP

CARPENTRY SHOP I

Grade 9, Course #0671

Q.P. 1.00

4.50 Credits

The Freshmen will be taught good, competent, and safe work habits. They will be shown basic wood joints. This will enable them to layout, assemble, cut, and frame walls properly. The students will erect a roof in the shop.

Students will know how to apply various pieces of trim, fascia, soffit frieze board, etc. Students will learn safety and to work with fellow students.

CARPENTRY RELATED SCIENCE I

Grade 9, Course #1671

Q.P. 1.00

1.00 Credit

The Freshmen will learn safe shop and tool practices. The student will become familiar with the required construction practices that are necessary for success on the job. The student will learn the various concepts of wood joining. An emphasis will be placed on the characteristics of wood. The student will learn how to use hand tools safely and properly. The student will be able to use portable and stationary power tools safely and properly.

CARPENTRY SHOP II

Grade 10, Course #0672

Q.P. 1.00

4.50 Credits

The Sophomores will be familiarized with the parts of a table saw, jointer, band saw, and safety on rip fence gauges. Students will learn adjustments, skill saw ripping, crosscutting, and various ways to lay out walls, roofs, valleys, and gable sheds, etc. Students will be given instruction to apply board and batten ship lap siding, clapboards, and wood shingles. The objectives are all realized with the construction of storage sheds, picnic tables, and gym sets. The students will learn how to work in harmony with fellow students.

CARPENTRY RELATED SCIENCE II

Grade 10, Course #1672 Q.P. 1.00 1.00 Credit

The Sophomores will be involved in a more advanced study of stationary and portable power tools. Shop and tool safety will be greatly emphasized. An example of the portable power tools are, skill saw, sabre saw, hand drill, belt sander, and router. The stationary power tools that the student will become proficient with are, table saw, jointer, radial saw, band saw, and drill press. Construction technology will be taught in the related room. Related drawing will also be taught, with an emphasis placed on the drawing of a storage shed.

CARPENTRY SHOP III

Grade 11, Course #0673 Q.P. 1.00 4.50 Credits

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

CARPENTRY RELATED SCIENCE III

Grade 11, Course #1673 Q.P. 1.00 1.00 Credit

The Juniors will learn how to draw, estimate, layout and build a modern day house. The student will learn how to frame a building using the platform method of construction. Concepts taught are, sill and floor framing, wall framing and roof framing. The related program will coordinate as much as possible with the house building program. Construction practices and job safety will be greatly emphasized.

CARPENTRY SHOP IV

Grade 12, Course #0674 Q.P. 1.00 4.50 Credits

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

CARPENTRY RELATED SCIENCE IV

Grade 12, Course #1674 Q.P. 1.00 1.00 Credit

The Seniors will learn how to do interior and exterior trim. The exterior trim will include water table, corner boards, windows and doors, casing, rake, and siding. Interior trim will

include kitchen cabinets, door and window trim, hardwood floors, baseboard and closet trim. This related instruction will coordinate with the house building program. The Seniors will review all modern day concepts involved in platform construction. House design and floor plan layout will also be taught.

COSMETOLOGY SHOP

COSMETOLOGY SHOP I

Grade 9, Course #0831

Q.P. 1.00

4.50 Credits

Students will learn the shop safety precaution, sanitation, and sterilization. The Freshmen will learn the basics of draping, shampooing, and conditioning the hair; roller placement and hair styling. The basics of manicures and facial will also be introduced.

COSMETOLOGY RELATED I

Grade 9, Course #1831

Q.P. 1.00

1.00 Credits

The identification of school rules and regulations, resources, state regulations, and licensing requirements will be covered through films and class projects.

COSMETOLOGY SHOP II

Grade 10, Course #0832

Q.P. 1.00

4.50 Credits

Students will learn manicuring, pedicuring, thermal styling, wet styling, fingerwaving, facials, facial make-up and hair removal. Also, the basics of haircutting will be taught. Demonstrations and hands-on procedures will accomplish these tasks.

COSMETOLOGY RELATED II

Grade 10, Course #1832

Q.P. 1.00

1.00 Credits

Students will learn during their related science bacteriology, sterilization, and sanitation. Nail disorders, sculpting nails, hair and scalp disorders and the theory of massage.

COSMETOLOGY SHOP III

Grade 11, Course #0833

Q.P. 1.00

4.50 Credits

The Juniors will learn how to perform hands on skills, such as roller sets, manicures, facials, haircutting, and hair styling. The students will learn and develop basic practices required by the State Board of Cosmetology while working towards their requirement of 1,000 hours. This course is especially recommended for students working towards a trade and licensing in Cosmetology in the State of Massachusetts.

COSMETOLOGY RELATED SCIENCE III

Grade 11, Course #1833

Q.P. 1.00

1.00 Credit

The Juniors will learn to develop a positive and cultivating approach in health, poise and professional ethics. They are provided with knowledge of cosmetology theory that is needed to be successful in the trade and helps the students create their own sense of style. The use of films and demonstrations are used in accomplishing these goals.

COSMETOLOGY SHOP IV

Grade 12, Course #0834

Q.P. 1.00

4.50 Credits

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

The students will learn basic salon management, how to maintain accurate business records, and the fundamental rules of first aid.

The students will enhance their ability in all phases of the cosmetology course such as, facials, manicures, artificial nail application, scalp treatments, hair cutting, hair coloring, perming, and make-up application. This will prepare the student for gainful employment resulting in the student's being prepared for the State Board Exam after the accumulation of the 1,000 hour program.

COSMETOLOGY RELATED SCIENCE IV

Grade 12, Course #1834

Q.P. 1.00

1.00 Credit

The Seniors will cover Sciences concerning disorders and chemistry of products used and will develop a basic knowledge and understanding that will set the foundation for the student to advance into industry.

The State of Massachusetts uses demonstrations; class projects and films in accomplishing these tasks, which will prepare the student in related science for their State Board Exam, issued upon completion of 1,000 hours.

CULINARY ARTS SHOP

CULINARY ARTS SHOP I

Grade 9, Course #0681

Q.P. 1.00

1.00 Credit

The freshmen will learn the basics of the kitchen. This includes running a dish machine, pot washing, sanitation, dining room procedures, basic sandwiches and salads. Also covered is the use of basic equipment; slicer, portion scales, bakers scales, mixers, and mangler. The student will spend time in the dining room learning to serve customers and set up the dining room for service. Basic baking items include: cookies, dinner rolls, and other less advanced items. Freshmen are usually paired with upper classmen who will help them. Particular emphasis is placed on safety.

CULINARY ARTS RELATED SCIENCE I

Grade 9, Course #1681

Q.P. 1.00

1.00 Credit

The Freshmen will learn how to develop the basics of the kitchen. This includes safety, sanitation, and hygiene. In addition, dining room procedures such as computer checks, table setting, and serving customers will be taught.

Students will be introduced to food service hygiene, correct temperature regulation and kitchen sanitation. Also, correct safety habits will be taught in the related classroom. Students will be tested on all basic skills pertaining to the food industry.

This course will include: lectures, video, guest speakers, and demonstration. Activity guides from the food management, production and service curriculum will also be used.

CULINARY ARTS SHOP II

Grade 10, Course #0682

Q.P. 1.00

4.50 Credits

The Sophomores will continue with their kitchen basics as in the first year. Students will learn more complicated recipes and formulas and will often be expected to work on some projects alone. They will also be introduced to grill, fryolator, and line work. Particular emphasis is placed on safety.

CULINARY ARTS RELATED SCIENCE II

Grade 10, Course #1682

Q.P. 1.00

1.00 Credit

The Sophomores will continue with their kitchen basics as in the first year. Students will learn more complicated recipes and formulas. Emphasis will be placed on weights and measure. Students will work on different projects alone. Particular emphasis is placed on safety and sanitation.

CULINARY ARTS SHOP III

Grade 11, Course #0683

Q.P. 1.00

4.50 Credits

The Juniors will work in meats, sauces, soup, more advanced bakery work, buffet work, and handle the more difficult items on the menu. Particular attention is paid to line work. Emphasis is placed on safety.

CULINARY ARTS RELATED SCIENCE III

Grade 11, Course #1683

Q.P. 1.00

1.00 Credit

The Juniors will be introduced to more advanced entrees, soups, sauces, gravy and vegetable preparation. Particular attention is paid to line work, as well as, buffet work and more advanced bakery work. Particular attention is placed on safety and hygiene.

CULINARY ARTS SHOP IV

Grade 12, Course #0684

Q.P. 1.00

4.50 Credits

The Seniors will continue their work on main entrees, soups, and sauces. Students will help underclassmen with their work. The students will do dining room supervision and hosting, and more advanced pastry work, such as different types of breads and rolls. Line and grill work, butchering, inventory, storeroom, and set up and control are also emphasized. particular emphasis is placed on safety.

CULINARY ARTS RELATED SCIENCE IV

Grade 12, Course #1684

Q.P. 1.00

1.00 Credit

The Seniors continue their work on main entrees, soups, sauces, Oriental, Chinese, and French Cuisine.

Each student in the Senior class is required to do a project such as design a menu.

Students will be introduced to marzipan, gum paste, and ice cream.

Seniors will become certified in Serv-Safe.

PROGRAMMING & WEB DEVELOPMENT SHOP

PROGRAMMING & WEB DEVELOPMENT

As society becomes more information oriented, computers, technology and the Internet are an integral part of most jobs. Our students are trained using a state-of-the art 35-workstation lab running in a Windows XP environment. Students learn how to manage data electronically with the Microsoft Office Suite of applications. Programming concepts are taught using Visual Studio, Net Microsoft Access, HTML, Java and JavaScript. Web pages are designed and developed with FrontPage, Dream Weaver and XHTML. Upon graduation, students are prepared for an entry-level position in Information Technology and Web page development or to further their education by enrolling in a post secondary school.

FRESHMAN EXPLORATORY

The exploratory program is designed to present to the freshmen students a basic overview of the materials that will be covered if they select Programming & Web Development as their career choice. Students will explore the internet using Microsoft Word to complete and build WebQuests. Students will be introduced to object oriented programming with Visual Basic, Web Development with HTML and software design and story booking with 3D Gaming.

PROGRAMMING & WEB DEVELOPMENT SHOP 1

Grade 9, Course #0701

Q.P. 1.00

4.50 Credits

This course is designed to introduce students to personal computer concepts and applications with a focus on how they can be used in the software development environment. Students will be provided with hands-on experience in Microsoft Office with a focus on computer programming, flow-charting and web development. Students will experience hands-on practice in Microsoft Office Tools including Power Point, Excel, Access and FrontPage. Students will initiate their study of the object oriented programming concepts with an introduction to software development using Alice.

PROGRAMMING & WEB DEVELOPMENT RELATED I

Grade 9, Course #1701 Q.P. 1.00 1.00 Credit

The students will learn how a computer system is developed and how these systems must change in order to meet the needs of changing society. Computer hardware components that are essential for the input, processing, output and storage of data, data communications, and system organization are explained in detail. It is expected that upon completion of this year, students will be prepared to function in a society in which computer confidence has become an essential element.

PROGRAMMING & WEB DEVELOPMENT SHOP II

Grade 10, Course #0702 Q.P. 1.00 4.50 Credits

This course is designed to teach students programming in Visual Basic and HTML. Developing Visual Basic code will provide the opportunity for students to develop key logic and analytical skills. The major topics of study in Visual Basic will include variable definition, assignment statements, strings, if statements and user interface design. Students will write interactive programs that respond to user events such as mouse-clicks and key presses. Supplemental internet programming is added to build the student's foundation of computer programming knowledge. Developing web pages in HTML using Cascading Style Sheets and JavaScript are also studied.

PROGRAMMING & WEB DEVELOPMENT RELATED II

Grade 10, Course #1702 Q.P. 1.00 1.00 Credit

The students will receive supporting instruction in Visual Basic and Web development. All steps of the software development lifecycle will be studied with a focus on effective user interface design and usability. Students will also learn about operating systems, utility programs, network devices and other hardware components that are essential for the building of an effective software system. Students' general computer knowledge will be supplemented by examining computer technology trends and how they effect the direction of the industry.

PROGRAMMING & WEB DEVELOPMENT SHOP III

Grade 11, Course #0703 Q.P. 1.00 4.50 Credits

Students learn advanced programming concepts in Visual Basic NET and an introduction to WEB programming using HTML and XHTML. Visual Basic.NET concepts will include looping

structures, multiple forms, menus, graphics, arrays and modular programming using procedures and functions. They will also learn how to integrate Microsoft Office products and databases with Visual Basic applications. Students will also be introduced to Web based programming using XHTML and JavaScript. They will design Web pages with tables and frames, design Web sites using Cascading Style Sheets and create programmable Web pages.

PROGRAMMING & WEB DEVELOPMENT RELATED III

Grade 11, Course #1703 Q.P. 1.00 1.00 Credit

Complete hands-on course to allow the students to develop and complete a moderately complex analysis & design document they can use as a reference throughout their career. Students will learn to design databases for medium complex applications. They will also be introduced to XML and data warehousing concepts. This course will take a hands-on approach to designing logical and physical models. Students will be introduced to object-oriented programming. They will learn how to organize data and information into classes. The students will receive supporting instruction in Web design, Web site creation, Web page deployment and development.

PROGRAMMING & WEB DEVELOPMENT SHOP IV

Grade 12, Course #0704 Q.P. 1.00 4.50 Credits

Students will be introduced to Java, the fastest growing object-oriented programming language in the world. Students will learn how to use XHTML, XML and JavaScript together to create dynamic Web pages. They will create colorful and interactive JavaScript enabled Web Pages and Java applets. Students will be exposed to Multimedia application development using Dream Weaver and Flash MX. They will also learn the basics of: web site publication, network configuration and communication, and operating system and software application installation.

PROGRAMMING & WEB DEVELOPMENT RELATED IV

Grade 12 Course #1704 Q.P. 1.00 1.00 credits

Students will learn the methodologies used for managing different type computer related projects. They will create project plans and estimate time and resource requirements. They will learn how to present a plan and manage it on a go forward basis. Students will learn the security issues related to software development in a three-tier application. They will also learn basic security issues and how to address them in an application. Students will be taught how to develop the documentation portion of an application development project. They will learn the methodologies of both the technical and user parts of an application.

DRAFTING SHOP

DRAFTING SHOP I

Grade 9, Course #0741

Q.P. 1.00

4.50 credits

This course provides the student with the basics of drafting. Students receive instruction in career opportunities, drafting office operational procedures, personal and shop safety, computer aided drafting (CAD), geometric construction, orthographic views, dimensioning, sectional views, auxiliary views and isometrics. Instruction incorporates presentation, demonstration and hands-on performance testing in the areas of drafting room procedures, shop safety procedures, Microsoft Windows, CAD software, disk procedures, plotting and plotters, blue line and engineering copies, and the basics of drawing presentation

DRAFTING RELATED SCIENCE I

Grade 9, Course #1741

Q.P. 1.00

1.00 credits

This course provides students with the theory behind the basics of drafting. Students receive instruction in career opportunities, drafting office operational procedures, personal and shop safety, computer aided drafting (CAD), geometric construction, orthographic views, dimensioning, sectional views, auxiliary views, and isometrics. Instruction incorporates presentation and testing in the areas of drafting room procedures, shop safety procedures, use of manual drafting tools and equipment, Microsoft Windows, CAD software, disk procedures, plotting and plotters, blue line and engineering copies, and the basics of drawing presentation. Reading, writing and math assignments related to drafting theory are an integral part of this class.

DRAFTING SHOP II

Grade 10, Course #0742

Q.P. 1.00

4.50 credits

This course provides students with an introduction to the components of mechanical design. This full-year course expands on the basic CAD drawing techniques of the freshmen year while providing a foundation for mechanical design projects that follow in the junior year. Students gain knowledge of threads and fasteners including bolt, screw and nut drawings, welding drawings, and spring drawings. Students also study about power transmission including spur, bevel and worm gear drawings, as well as cam drawings. Various shop processes are examined including casting, forging, welding, thermoplastic and sheet metal parts. 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 office procedures, advanced CAD software, mechanical detailing, and design.

DRAFTING RELATED SCIENCE II

Grade 10, Course #1742

Q.P. 1.00

1.00 credits

Students are required to interview a mechanical drafter. Students are introduced to calculation of thread lead and thread motion, gear rotation, gear ratios and calculation of shaft speeds. Students are also introduced to manufacturing processes including casting, forging, welding,

thermoplastics, and sheet metal fabrication. Stud This course provides students with an introduction to the theory relating to components of mechanical design. Students will learn to calculate bend allowance and determine sheet metal gauge. Students learn the basics of writing specifications, requesting product literature, and using reference materials. Instruction incorporates demonstration and testing based on competency-based vocational education (CBVE) for mechanical drafting. Reading, writing and math assignments related to the drafting professions will be integrated with academic frameworks during this class.

DRAFTING SHOP III

Grade 11, Course #0743

Q.P. 1.00

4.50 credits

This course is designed to provide students with a foundation in mechanical and electrical/electronic design and to inform them of career opportunities in mechanical design. Students explore materials, advanced dimensioning techniques, tolerancing, checking, three-dimensional and solids drawings (3D), 3D solid models, 3D solid rendering, electro-mechanical packing, sheet metal design and detailing, robotics competition design and detailing, 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 Technology and Electronics. This gives the student a first hand understanding of the processes behind mechanical and electrical design. Instruction incorporates presentations, demonstration and hands on performance testing in the areas of drafting room procedures, advanced CAD software, 3D solids, mechanical design, and electrical/electronic design. Students participate in mechanical design projects. An introduction to computer aided manufacturing is presented as well.

DRAFTING RELATED SCIENCE III

Grade 11, Course #1743

Q.P. 1.00

1.00 credits

This course is designed to provide students with theory relating to mechanical and electrical/electronic design and to inform them of career opportunities in mechanical design. Students explore materials, material finishes, strength of materials, precision measurement, tolerancing, fits and limits, clearance hole diameters, tolerance studies, geometric dimensioning, tolerancing, and use of reference materials. Instruction incorporates presentation and testing in the areas of drafting room procedures, advanced CAD software, 3D design, measuring tools, basic electronic theory, electronic component identification, electronic diagrams, printed circuit boards, sheet metal, and electronic packaging. Reading, writing and math assignments related to the drafting professions are integrated with academic frameworks during this class.

DRAFTING SHOP IV

Grade 12, Course #0744

Q.P. 1.00

4.50 credits

This course provides students with an introduction to residential architectural drawing and design. This full-year course incorporates basic site design, structural and mechanical systems

design and detailing required in the building permit process. Students are introduced to property survey and plot plan drawings. Students are introduced to floor plan, elevation, foundation plan, foundation section, framing plan, cross section, longitudinal section and typical wall section drawings, exterior perspective, rendering, and architectural modeling. Students are also introduced to plumbing plans, HVAC drawings and electrical drawings

DRAFTING RELATED SCIENCE IV

Grade 12, Course #1744

Q.P. 1.00

1.00 Credit

This course provides students with an introduction to theory relating to residential architectural drawing and design. Students are introduced to Azimuth and bearing compass layout, contour grading, and septic system design, foundation footing and soils design. Students become familiar with floor joist, roof rafter and ceiling joist sections, as well as girder, header and ridge beam design in traditional lumber, laminated lumber, and steel beam. Additional topics include plumbing supply and drainage systems, electrical power distribution systems, HVAC systems, heat loss calculation, and the Massachusetts energy compliance code. Research including reading, writing, and math assignments related to the drafting profession, are integrated with academic frameworks during this class. Instruction incorporates demonstrations and testing using competency-based vocational education (CBVE) for Architectural Drafting.

ELECTRICAL SHOP

ELECTRICAL SHOP I

Grade 9, Course #0761

Q.P. 1.00

4.50 Credits

The Freshmen will learn shop safety, the proper use of hand tools, responsibilities and shop procedures, Right to Know Laws regarding use and storage of chemicals. They will start with low voltage projects and work their way through simple line voltage projects. The students will study the proper use and installation of materials and hardware, with an introduction to power tools.

ELECTRICAL RELATED SCIENCE I

Grade 9, Course #1761

Q.P. 1.00

1.00 Credit

The Freshmen will learn Electron Theory, parallel and series circuits, sources of power, and signal systems. They will also work with math as it relates to the electrical trade including OHM's Law, wire size, line drop, and circuits. Safety rules and accident prevention along with an introduction of the National Electrical Code, wiring methods, blue print reading and drawings will be covered.

ELECTRICAL SHOP II

Grade 10, Course #0762

Q.P. 1.00

4.50 Credits

The Sophomores will learn Residential Wiring, Data Networking, conduit and tubing bending and residential services. An introduction to appliances, heating, motor controls, motors, and transformers, both the installation and repair of.

ELECTRICAL RELATED SCIENCE II

Grade 10, Course #1762 Q.P. 1.00 1.00 Credit

The Sophomores will learn job estimating, services, transformers, and test equipment. They will also learn the higher math of the electrical trade along with batteries, electric heating, and load calculations. A more in-depth study of blue prints and the National Electrical Code and safety on and off the job will be covered.

ELECTRICAL SHOP III

Grade 11, Course #0763 Q.P. 1.00 4.50 Credits

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

ELECTRICAL RELATED SCIENCE III

Grade 11, Course #1763 Q.P. 1.00 1.00 Credit

The Juniors will learn about generators and motors, both AC and DC. They will also learn math involving generators and motors. Commercial blue print reading and N.E.C. code regarding commercial buildings will be covered. Safety is covered in-depth as to the operation, guards, connection and checking of equipment and circuits. Also, they will learn about O.S.H.A. and other safety organizations.

ELECTRICAL SHOP IV

Grade 12, Course #0764 Q.P. 1.00 4.50 Credits

The Seniors will learn how to properly use all the equipment in the shop. They will work more substantially on the outside projects. They will be given changes to individually advance in many areas of the trade. Students will also learn the knowledge of all factors including cost of tools and materials, time and labor. This will then prepare them for an entry level job in the trade and eventually a license.

ELECTRICAL RELATED SCIENCE IV

Grade 12, Course #1764 Q.P. 1.00 1.00 Credit

The Seniors will learn about industrial transformers, emergency power, metering and programmable logic controllers. The math covered this year is inductance, transformer, power factors and motor calculations. The N.E.C. codes on industrial work are covered. Also covered: Labor laws, wages and the current electrical industry, apprenticeship programs and employment. A complete review of all safety is covered in-depth.

ELECTRONICS SHOP

ELECTRONICS SHOP I

Grade 9, Course #0781

Q.P. 1.00

4.50 Credits

The Freshmen will learn procedures, practices, and policy relating to safety. Students will also learn basic prototyping of electronic circuits through activities such as creating printed circuit board layouts, etching, and soldering. Students will become familiar with the use of hand and power tools. They will also become familiar with basic electronic measurement of voltage, current and resistance using instrumentation such as the multimeter, oscilloscope, and function generator. Students will also perform experiments related to DC and AC circuit schematic capture, layout, simulation, and analysis using software tools such as MultiSIM, CBT, and UltiBoard.

ELECTRONICS RELATED SCIENCE I

Grade 9, Course #1781

Q.P. 1.00

1.00 Credit

The Freshmen will learn about different types of electronic technology such as, microelectronics, analog and digital through discussion. They will learn about career specializations for technicians, technologist and engineers. Students will learn about the physical and electrical characteristics of passive components such as resistors, capacitors and inductors. They will also learn about the theoretical aspects of DC and AC circuits and methods of steady state and transient analysis. Students will learn basic circuit behavior using Ohm's Law, Kirchhoff's Law, and the Norton and Thevenin equivalents. .

ELECTRONICS SHOP II

Grade 10, Course #0782

Q.P. 1.00

4.50 Credits

The Sophomores will become familiar with the physical and electrical properties of passive and semiconductor components, and how to test and evaluate them. They will use various breadboard techniques to construct, troubleshoot, and analyze Analog Circuits such as: power supplies, amplifiers, RC and LC oscillators, filters, and optical light sources and detectors. Students will learn how to use test equipment associated with these circuits such as: curve tracer, AF/RF signal generators, distortion analyzer, and frequency counter. Additionally, students will be introduced to advanced topics through self-paced training courses in topics such as: Telecommunications, Lasers, and Fiber Optics.

ELECTRONICS RELATED SCIENCE II

Grade 10, Course #1782

Q.P. 1.00

1.00 Credit

The Sophomores will learn scientific notation, use of metric prefixes, and will be introduced to complex numbers, and basic trigonometric relationships used in analyzing vector quantities in AC circuits. They will become familiar with the physical and electrical properties of passive and semiconductor components, and how to test and evaluate them. They will use various breadboard techniques to construct, troubleshoot, and analyze analog circuits such as: power supplies, amplifiers, RC and LC oscillators, filters, and optical light sources and detectors. Students will learn how to use test equipment associated with these circuits such as: curve tracer, AF/RF generators, distortion analyzer, and frequency counter. Additionally, students will be introduced to advanced topics through self-paced training courses in topics such as: telecommunications, lasers and fiber optics.

ELECTRONICS SHOP III

Grade 11, Course #0783

Q.P. 1.00

4.50 Credits

The Juniors will learn how to recognize, test, and evaluate Digital Circuits. Students will learn about physical packaging of various types of integrated circuits, and about the electrical characteristics for various logic families such as: TTL, low power TTL, Schottky TLL, CMOS, and ECL. Students will perform experiments implementing combinational logic circuits from schematic diagrams, truth tables, and Boolean Algebra. Students will also build and evaluate sequential logic circuits using flip-flops. They will build, troubleshoot, and test computer circuits such as: counters, shift-registers, encoders, decoders, multiplexers, demultiplexers, and arithmetic logic units.

ELECTRONICS RELATED SCIENCE III

Grade 11, Course #1783

Q.P. 1.00

1.00 Credit

The Juniors will learn about the theoretical aspects of digital electronic circuits. As a prelude to digital theory, students will learn about the binary, octal, and hexadecimal number systems. Students will also learn how to describe and manipulate computer logic using Boolean algebra. They will learn about logic gates, combinational logic, flip-flops and sequential logic. Students will apply their knowledge of logic to learn about digital computer circuits such as: counters, shift-registers, encoders, decoders, multiplexers, demultiplexers, and arithmetic circuits. Additionally, students will learn about different types of integrated circuit technology and logic families such as TTL, CMOS, and ECL.

ELECTRONICS SHOP IV

Grade 12, Course #0784

Q.P. 1.00

4.50 Credits

The Seniors will have an option of focused practical study in one or more of the following topics: micro-controllers (MICROCHIP), micro-processors (INTEL) and programmable logic (ALTERA) devices. These topics will be learned using the same state-of-the hardware and software tools used by technicians and engineers working in the electronics industry. Students will gain experience by programming devices and by creating hard-wired circuits.

ELECTRONICS RELATED SCIENCE IV

Grade 12, Course #1784

Q.P. 1.00

1.00 Credit

During the first half of the year students will be introduced to A+, Computer Service and Repair. Students will become knowledgeable in these areas: PC operating systems, motherboards, CPU and chipsets, power supplies, memory types and their uses, input devices, video display and audio systems, magnetic storage devices, CD technology, printers, portable PC's, telephone communications, viruses and PC troubleshooting.

During the second half of the year students will become knowledgeable in the following areas of Networking Technology and practices: networking basics using Windows XP, star and bus topologies, network operating systems and clients, the client-server network, remote connectivity and the Internet, TCP/IP, and networking hardware and troubleshooting.

MARKETING SHOP

MARKETING SHOP I

Grade 9, Course # 0721

Q.P. 1.00

4.50 Credits

The student will identify opportunities in marketing and retailing. They will have a basic understanding of the operating procedures of the Minuteman Shop and will learn the fundamentals of operating the machines and equipment used in the shop. They will learn how to do inventory and be able to work on the computers inputting inventory on spreadsheets. The students will learn the rudiments of customer handling, selling the merchandise, and servicing the customer. Students will be given instruction in marketing math.

MARKETING RELATED SCIENCE I

Grade 9 Course #1721

Q.P. 1.00

1.00 Credit

The Freshmen will learn about the art of selling from the pre-approach, to developing sales skills, to the various steps of approach, to the completion of the successful sale. They will examine the special skills needed for good working relationships and interactions of co-workers. Students will analyze the future of sales in our economic society and begin to learn

about the U.S. free enterprise system.

MARKETING SHOP II

Grade 10, Course #0722 Q.P. 1.00 4.50 Credits

This course takes the student beyond basics by beginning to take responsibility for the operation of the cash registers. They will learn how to advertise and display merchandise and become knowledgeable about controlling stock, pricing, ticketing merchandise and shipping and receiving goods. The student will begin typing classes one period a day.

MARKETING RELATED SCIENCE II

Grade 10, Course #1722 Q.P. 1.00 1.00 Credit

The Sophomores will study the principles of marketing. They will learn to follow the functions of marketing in the changing consumer market. Students will collect and analyze data needed to prepare research projects and they will also learn the channels of distribution involved in marketing.

MARKETING SHOP III

Grade 11, Course 0723 Q.P. 4.50 4.50 Credits

This course is a more advanced course in marketing and retailing. Students will have full responsibility for all operations of the cash registers. They will learn cash controls and daily deposit activities. They will explore the many facets of planning for a job by doing resumes, handling job interviews, and preparing a letter of application. They will learn about buying merchandise. Students will continue with their study of typing.

MARKETING RELATED SCIENCE III

Grade 11, Course #1723 Q.P. 1.00 1.00 Credit

The Juniors will study the fundamentals of retailing involved in areas of human relations, getting along with co-workers and supervisors, getting merchandise ready to sell, sales promotion, managerial skills, and becoming an entrepreneur. They will perform retailing projects and tasks on the word processor and spreadsheet.

MARKETING SHOP IV

Grade 12, Course #0724 Q.P.1.00 4.50 Credits

During the last year in this course the student will experience learning about store organization, maintaining, and keeping stock secure. They will learn how to do a store layout. They will also be instructed in economics and the free enterprise system. The student will be responsible for all aspects of running a retail establishment. The student will continue with their typing classes.

MARKETING RELATED SCIENCE IV

Grade 12, Course #1724 Q.P. 1.00 1.00 Credit

The Seniors will study Business Law. This will cover basic criminal law, international business law, contracts, obtaining a job and being an agent. They will examine practices such as starting a business and using their purchasing power.

GRAPHICS COMMUNICATION SHOP

GRAPHIC COMMUNICATIONS SHOP I

Grade 9 Course #0801 Q.P. 1.00 4.50 Credits

The students will be introduced to the basics of layout and design, web based animation and basic press operations. Students will learn the fundamentals of Silk Screen printing and how to create single color T-shirts and posters. Students will be trained in the operation of offset duplicators and wet ink duplicating processes. Students will learn the bindery functions of folding, drilling, stitching, collating, booklet making and padding operations. Students will be introduced to the entire graphic communication field, which includes press operations, pre press computer based layout, digital design, imaging and animation. Concentration will be placed on safety standards and procedures related to the graphic communications field of study.

GRAPHIC COMMUNICATIONS RELATED SCIENCE I

Grade 9 Course #1801 Q.P. 1.00 1.00 Credit

The student will be informed of the many facets of the trade from pre-press computer design to press and bindery work. The student will understand the importance of safety within the shop environment. Students will be taught the fundamentals of all aspects of the trade with direct correlation to shop instruction. The areas covered are basic computer operation, layout, design, computer to plate, film imposition and platemaking. The first year student will learn about press setup, operation, clean up, folding operations, padding, bindery operations, packaging, paper cutting and estimation.

GRAPHIC COMMUNICATIONS SHOP II

Grade 10 Course #0802 Q.P. 1.00 4.50 credits

This course will build on the information gained in the freshman year. The students will work on the computer to learn about hardware and software functions of the computer. The student will learn about page layout software using the Adobe InDesign application. A basic understanding of Adobe Photoshop and Illustrator will be introduced. Weekly projects and daily lessons reinforce the material learned in the Related Theory class. The concentration of layout and digital imaging software will act as a primer to the junior year when advanced digital layout and multimedia design is introduced. The later half of the sophomore year will be spent

learning basic press techniques, which include the use of duplicator's and offset printing equipment to achieve simple forms printing, close and hairline register plus four-color process. Students are taught the five and/or six systems of the press for complete set-up and operation of the equipment. Students will learn about the Silk Screen process working with one and two-color projects including T-shirts and posters. Training will continue of bindery operations to reinforce the knowledge gained in freshmen year. The operation and calculation of all paper cutting techniques will be taught. Students will learn about paper types and weights as it applied to the successful operation of the equipment.

GRAPHIC COMMUNICATIONS RELATED SCIENCE II

Grade 10 Course #1802

Q.P. 1.00

1.00 Credits

This course will build on the information gained in freshman year. Quarterly projects are introduced to promote knowledge gained in the program. Desktop design applications will be discussed using the latest software in the industry. Proofreading, Proofing, using register marks, and color bars to produce CMYK work for the presses, and color separations will be taught. The RIP station will be covered with preflight operations. Computer to plate technology will also be covered. Students will understand the process of job estimating, paper types, the previous processes used in the darkroom and stripping areas, and plate burning. The students will know the fundamental operations of the offset presses within the shop with a continuing emphasis on safety. Two color operation with close and hairline register will be discussed. Introduction to four-color process printing will be covered. Bindery operations including folding, padding, stitching, collating and cutting is an integral part of sophomore year.

GRAPHIC COMMUNICATIONS SHOP III

Grade 11 Course #0803

Q.P. 1.00

4.50 Credits

Students will concentrate on digital design and printing techniques. Four color registration, color matching and calibration, mixing ink and bindery techniques will be reinforced during the first half of the junior year while in the press area of the shop. Continuing to learn about four-color press runs and registration techniques prepares the junior student to enter the press field. Densitometry, the use of color bars and registration is stressed. Students will work on single color, two-color and four-color process work on a daily basis. Maintenance of equipment is taught on a daily basis. Students will continue to use bindery equipment for producing booklets, brochures, forms and other typical printing work. Students are trained in scoring, perforating and folding operations. Students will continue to learn about the Silk Screen process working with multi-color projects including T-shirts and posters.

Strong emphasis will be placed on four-color design, animation and press techniques while broadening the scope of the curriculum by including web design and digital authoring. The inclusion of digital authoring, animation, digital imaging and web design will be concentrated on in the later half of the junior year. While emphasis will still be placed on digital layout and design, expansion of the lessons to include animation and digital media allow the student to gain experience that enhances their understanding of the entire graphic communication field. Photoshop, Illustrator, InDesign, Dreamweaver, Fireworks, Flash, 3D Studio Max and Bryce software is taught during this time.

GRAPHIC COMMUNICATIONS RELATED SCIENCE III

Grade 11 Course #1803

Q.P. 1.00

1.00 Credit

Students will learn about the importance of digital printing as it applies to the graphic communications field. Students will use the Adobe Creative Suite of software products for design. This includes: Adobe Illustrator, Photoshop, InDesign and Quark Xpress applications fussed in the industry. Quarterly projects reinforce the student's knowledge in pre-press and press operations. Multiple page layout, color separations and densitometry are a part of the junior year. Students learn about printing color separations, quality control standards, job cost estimation and paper estimation for a multi-page form. Students will discuss film imposition for a color-separated job, pin registration, and how to create a multi-flat exposure. Proofing techniques, ink mixing, and the use of color bars as they relate to CMYK press operations are discussed. Students will have a better understanding of press operations for proper registration and for larger color printing work. Multiple folding operations are used and the understanding of paper manufacturing and bookbinding are discussed.

GRAPHIC COMMUNICATIONS SHOP IV

Grade 12 Course #0804

Q.P. 1.00

4.50 Credits

Students will continue to practice the Graphic Communications career involving the prepress, digital and press techniques. Students will concentrate on more typical graphic communications work like: four-color process design and printing plus web page design, preflighting operations, RIP station operation and the use of the four-color press. Students will continue to learn about the Silk Screen process working with multi-color projects including printing on different substrates. They will study all areas of the discipline to gain a thorough understanding of techniques to better themselves in the work force. Creation of work for the school involving the school brochure, shop pamphlets, and projects given the senior student will enable them to produce a working portfolio of their work to present to the future employer using real world examples. The senior student may elect to produce this working portfolio online via a web based presentation or through the use of multimedia production techniques, create a self running kiosk based presentation to send to employers.

GRAPHIC COMMUNICATIONS RELATED SCIENCE IV

Grade 12 Course #1804

Q.P. 1.00

1.00 Credit

The senior student will create a resume to utilize for their continuing education or in the work world. The students will understand job interview techniques and prepare themselves to become young professionals within the graphic communications industry. Students will learn about business functions and how to create their own business. The students will work on the Internet for their research and work within the classroom to create a mock business. Students will be able to demonstrate a greater understanding of the design, preparation and printing of multi-color and process printing operations using the latest software and printing equipment within the shop and industry. Safety standards are taught continually to impress upon the graduating student that safety procedures are a part of everyday life. Printing of CMYK work is the emphasis in senior year. Students will understand the process and are able to design,

preflight, RIP to plate and print a four-color process job plus complete the necessary bindery operations associated with the work. Estimating functions and job costing functions will be discussed in further detail.

HEALTH TECHNOLOGIES

HEALTH ASSISTING I

Grade 9 Course #0691

Q.P. 1.00

4.50 Credits

Students will learn the shop safety precautions; infection control measures and correct body mechanics. The students will become certified in First Aid and CPR. The different health care environments will be discussed. Students will become proficient in bed making, vital signs and general comfort measures. The students will be introduced to medical terminology.

HEALTH ASSISTING RELATED SCIENCE I

Grade 9 Course #1691

Q.P. 1.00

1.00 Credit

The study of nutrition will be the main focus during related. Students will learn the body's nutritional requirements. The students will understand what type of food the body requires and why.

HEALTH ASSISTING II

Grade 10 Course #0692

Q.P. 1.00

4.50 Credits

The sophomores are introduced to direct patient care skills, specimen collection, physical and emotional needs of patients, and the health care environment. They will also begin studies in some major illness, Alzheimer's Diabetes Mellitus and gastrointestinal diseases. Growth and development is a major focus this year.

HEALTH ASSISTING RELATED SCIENCE II

Grade 10 Course #1692

Q.P. 1.00

1.00 Credit

The study of nutrition will continue with specific attention to the effects of diet throughout the lifespan. Reinforcement of growth and development will also be a focus.

HEALTH ASSISTING III

Grade 11 Course #0693

Q.P. 1.00

4.50 Credits

Students will be training to take the state certification exam in nursing assisting at the end of this year. Students will be going out with their instructor to nursing homes to perform patient care.

HEALTH ASSISTING RELATED SCIENCE III

Grade 11 Course #1693

Q.P. 1.00

1.00 Credit

Attention will be directed towards reinforcing key concepts such as infection control, safety, communication, and patient care. Specific attention will also be given to the dietary needs of ill patients.

HEALTH ASSISTING IV

Grade 12 Course #0694 Q.P. 1.00 4.50 Credits

The seniors will continue their study of healthcare by participation in numerous clinical rotations at various facilities. They will be exposed to alternative health care settings. The students will study to be an EMT-B and upon successful completion of the course will be able to take the state exam.

HEALTH ASSISTING RELATED SCIENCE IV

Grade 12 Course #1694 Q.P. 1.00 1.00 Credit

This year students will focus on human behavior in health and illness and EMT-B curriculum. The students will continue to prepare for a career within the health care industry.

MACHINE TECHNOLOGY SHOP

MACHINE TOOL TECHNOLOGY I

Grade 9 Course #0841 Q.P. 1.00 4.50 Credits

The Freshmen will learn the basics of lathe, milling machine, grinder, and drill press operation. They will apply the basic math and blueprint skills learned in the related program to the part production in shop. The student will learn the application of hand and power tools studied in related. The student will also apply basic information concerning heat treatment and metal identification. Most importantly, the student will learn the safety practices needed in the machine shop.

MACHINE TOOL TECHNOLOGY RELATED SCIENCE I

Grade 9 Course #1841 Q.P. 1.00 1.00 Credit

The Freshmen will learn hand tool, measuring tool, and machine tool identification. The student will also learn shop math as applied to the job in conjunction with basic blueprint reading and sketching. The student will learn the theories of properly and safely removing stock through the use of varied machine tools. The student will also learn the metal manufacturing process and basic metalurgy.

MACHINE TOOL TECHNOLOGY SHOP II

Grade 10 Course #0842 Q.P. 1.00 4.50 Credits

The Sophomores will learn advanced lathe, milling machine, grinder, and drill press operation. In addition, they will learn basic operation of E.D.M. and C.N.C. machine operation.

They will apply the more advanced math and blueprint skills learned in the related program to the part production in the shop. The student will begin the process of unit production in the form of tools that can be used by the student when entering the trade. The concept of multi-level production will be introduced and short production runs will be done by the students organized by the upperclassmen.

MACHINE TOOL TECHNOLOGY RELATED SCIENCE II

Grade 10 Course #1842 Q.P. 1.00 1.00 Credit

The Sophomores will learn advanced tooling used on the basic machine tools. Production planning will be taught to efficiently produce machined parts on machine tools. An introduction to E.D.M. and C.N.C. programming will be taught with emphasis on use of proper tooling for the job.

MACHINE TOOL TECHNOLOGY SHOP III

Grade 11 Course #0843 Q.P. 1.00 4.50 Credits

The Juniors will learn the application of standard machine operation to C.N.C. machine functions. The student will set up and run C.N.C. programs in machine language, E.I.A. RS 232, and RS 274 C.N.C. formats. The student will organize and run complex jobs in the machine shop using the Juniors as set-up people and the Freshmen as machine operators. The students will be introduced to basic tool making, diemaking, and mold making.

MACHINE TOOL TECHNOLOGY RELATED SCIENCE III

Grade 11 Course #1843 Q.P. 1.00 1.00 Credit

The Juniors will write C.N.C. programs in machine, RS 232, and RS 274 formats that will be run in the shop. The students will learn advanced blueprint reading and apply it to shop production projects.

MACHINE TOOL TECHNOLOGY SHOP IV

Grade 12 Course #0844 Q.P. 1.00 4.50 Credits

The Seniors will learn advanced machine tool operation and planning. The student will focus on an area of the trade into which he/she wishes to enter or remain in general machining sharpening their skills on the basic and advanced machine tool process. The student will be shop floor foreman for a period to learn the skills of working with the public and planning work schedules.

MACHINE TOOL TECHNOLOGY RELATED SCIENCE IV

Grade 12 Course #1844 Q.P. 1.00 1.00 Credit

The Seniors will learn to design, plan, and organize information to set up an entire machine shop business. The student will estimate job times, costs, and time lines. The students will learn advanced tool and die procedures to plan the production of complex units.

MASONRY & TILE SETTING SHOP

MASONRY & TILE SETTING SHOP I

Grade 9 Course #0841

Q.P. 1.00

4.50 Credits

The Freshmen will learn how to prepare and set-up a work area, learn safe work practices, and demonstrate employable skills. The students will also learn how to handle the different tools of the trade, and how to mix and use mortar. They will also learn how to lay brick and block to line.

MASONRY & TILE SETTING RELATED SCIENCE I

Grade 9 Course #1841

Q.P. 1.00

1.00 Credit

The students will learn safe work practices, focusing on shop safety. They will also learn the various career opportunities in the masonry field coupled with a history of the trade, a brief exposure to the basic tools, measuring devices, and materials, while developing an awareness of the skills necessary to succeed in a masonry career.

MASONRY & TILE SETTING SHOP II

Grade 10 Course #0842

Q.P. 1.00

4.50 Credits

The Sophomores will learn how to level and plumb brick and block walls, build rock and block piers, and leads, and finish concrete. The students will also learn how to cut masonry materials using a hammer or a wet saw. The students will also learn how to build block corners using different size blocks, and how to build and layout advanced brick bond corners.

MASONRY & TILE SETTING RELATED SCIENCE II

Grade 10 Course #1842

Q.P. 1.00

1.00 Credit

The students will learn the history of cement, brick and block. The students will also learn how to estimate brick, block, concrete, and other related masonry materials for small projects. The students will also learn the types and properties of mortar.

MASONRY & TILE SETTING SHOP III

Grade 11 Course #0843

Q.P. 1.00

4.50 Credits

The Juniors will be able to layout a chimney and build a fireplace. The student will also learn how to build different types of masonry steps.

MASONRY & TILE SETTING RELATED SCIENCE III

Grade 11 Course #1843

Q.P. 1.00

1.00 credit

The Juniors will learn how to read simple blueprints and how to estimate small buildings. The student will also learn the secrets of building a successful fireplace and how to build footings and foundation walls. The students will also learn the history of fireplaces and

Masonry stoves.

MASONRY & TILE SETTING SHOP IV

Grade 12 Course #0844 Q.P. 1.00 4.50 credits

The Seniors will do various types of remodeling work usually found around the home, such as; garden walls, brick paving, and tile. The student will also build walls made of stone.

MASONRY & TILE SETTING RELATED SCIENCE IV

Grade 12 Course #1844 Q.P. 1.00 1.00 credit

The Seniors will learn how to measure and draw templates for arches, and cornice work. The students will learn different formulas for estimating larger jobs. The students will learn different bonds associated with stonework.

METAL FABRICATION & JOINING TECHNOLOGY SHOP

METAL FABRICATION & JOINING TECHNOLOGIES SHOP I

Grade 9 Course #0861 Q.P. 1.00 4.50 credits

The Freshmen will name and know the use of all the tools commonly found in a sheet metal shop. They will learn to safely operate selected pieces of equipment found in the school metal fabrication program. They will learn to fabricate objects using simple shop drawings, and will observe and carry out all safety principles regarding machine use, proper clothing and good housekeeping.

Additionally, the Freshmen will learn safety, setting up and connecting welding equipment and proper methods of manipulating the torch. Perform common welding joints and welding positions, and how to do this type of welding with and without a welding rod will be covered. The basics of braze welding and cutting of steel along with basic arc welding and how to hold and maintain an arc will be studied.

METAL FABRICATION & JOINING TECHNOLOGIES RELATED SCIENCE I

Grade 9 Course #1861 Q.P. 1.00 1.00 credits

The Freshmen will learn the basic operations and safety of hand tools, plus some of the basic machines. They will be able to identify some of the basic metals, their thickness and uses. They will learn basic shop drawing and layout work by the proper use of the mechanical drawing equipment.

Additionally, the students will learn the safe use of Oxy-fuel welding and brazing equipment and supplies. They will learn the use of basic arc welding equipment and supplies, and will start the basic theory for shielded metal arc welding.

METAL FABRICATION & JOINING TECHNOLOGIES SHOP II

Grade 10 Course #0862

Q.P. 1.00

4.50 Credits

The Sophomores will learn to operate safely, all pieces of equipment found in the metal fabrication shop, make and read simple shop drawings, and be able to fabricate objects from them. The students will perform certain types of flat soldering, and apply all safety principles regarding the use of machinery.

Additionally, the Sophomores will learn safety and care of the welder and welding equipment. Students will learn steel preparation and rod selection, as well as arc welding in all positions or mild steel. They will learn the basics of pipe welding and cast iron welding. The students will also learn the basics of micro-wire welding.

METAL FABRICATION & JOINING TECHNOLOGIES RELATED SCIENCE II

Grade 10 Course #1862

Q.P. 1.00

1.00 Credit

The Sophomores will learn blueprint reading, drawing, layout and shop math. They will learn how to apply them to shop projects. Students will also learn to safely set up and operate all pieces of power machinery in our metal fabrication shop.

Additionally, students will learn shielded metal arc welding, AC-DC operation, along with electrode care, operating ranges and power supplies. They will also learn basic mig welding operation using state of the art equipment.

METAL FABRICATION & JOINING TECHNOLOGIES SHOP III

Grade 11 Course #0863

Q.P. 1.00

4.50 Credits

The Juniors will learn to operate safely all pieces of equipment found in the metal fabrication shop, make shop drawings and fabricate projects and fittings from them. They will assemble and install fittings for duct work in air conditioning, heating, and exhaust systems.

Additionally, the Juniors will learn how to set up the micro-wire welding machine for the different welding operations, and how to weld light metals as well as heavy metals, in all positions using different types of welding joints. The students will also learn the proper use of plasma arc cutting as well as the basics of gas tungsten arc welding.

METAL FABRICATION & JOINING TECHNOLOGIES RELATED SCIENCE III

Grade 11 Course #1863

Q.P. 1.00

1.00 Credit

The Juniors will learn blueprint reading, drawing, layout for heating, ventilating, and air conditioning, along with precision sheet metal mathematics.

Additionally, the Juniors will learn the theory of gas tungsten welding equipment and supplies along with its safe operation.

They will learn the theory of current, power and electrodes for the metals to be welded.

They will learn about inert and shielding welding gasses, mig welding wires, and plasma arc cutting theory.

METAL FABRICATION & JOINING TECHNOLOGIES SHOP IV

Grade 12 Course #0864 Q.P. 1.00 4.50 Credits

The Seniors will learn to perform, with acceptable skill, all of the operations learned and reviewed in the previous three years. They will be able to operate safely all pieces of equipment found in the metal fabrication shop. Their skills will be limited only by a student's ability and willingness to indulge themselves into their work. Students will also be given greater latitude to concentrate on that part of the trade that he/she best likes or has shown a greater aptitude for.

Additionally, the Seniors will learn safety and care of gas tungsten arc welding equipment as well as basic skills in the welding of aluminum, stainless steel and mild steel in the different positions using the different types of welding joints. Destructive and non-destructive testing will also be taught.

METAL FABRICATION & JOINING TECHNOLOGIES RELATED SCIENCE IV

Grade 12 Course #1864 Q.P. 1.00 1.00 Credit

The Seniors will learn advanced blueprint reading and drawing. They will learn the theory of layout work, including parallel line development, radial line development, triangulation and shortcut methods of layout.

Seniors will learn the applications of special non-ferrous welding. They will also learn inspection and testing of weldments, heat treatments of metals, metal surfacing, and welder qualification.

OFFICE TECHNOLOGY SHOP

OFFICE TECHNOLOGYSHOP I

Grade 9, Course #0651 Q.P. 1.00 4.50 Credits

Students will be introduced to keyboarding and processing information using Microsoft Office Word. In addition, they will be introduced to desktop publishing through the use of Microsoft Office Publisher, and will learn the basics of gathering information utilizing the Internet as a research tool. They will also become adept at operating different types of duplicating and copying machines, as well as the electronic calculator as a problem-solving tool; and they will be able to determine how to classify, arrange and store records so that they can be found quickly whenever they are needed. Lastly, they will find out about the efficient kinds of work, and how to do job-related tasks, so they can choose the kinds of work that offers the most satisfaction to them.

OFFICE TECHNOLOGY RELATED SCIENCE I

Grade 9, Course #1651

Q.P. 1.00

1.00 Credit

Students will be taught the “touch operation”: of the electronic calculator. Once mastered, they will get an introduction to the kinds of mathematical problems they can expect to encounter in their everyday lives—maintaining checkbooks, savings, and charge accounts; purchasing food, clothing, and other items; paying for their mortgage, and home repairs and improvements; keeping up with medical, car, house, and life insurance; and figuring state and federal taxes. They will also learn how to solve many of these day-to-day financial problems.

OFFICE TECHNOLOGY SHOP II

Grade 10, Course #0652

Q.P. 1.00

4.50 Credits

Students will gain knowledge on how to format documents on the computer, and acquire spelling and vocabulary skills for better communication in business. They will understand the fundamentals of word processing on a PC while applying the fundamentals of word processing to typical business documents such as letters, memorandums, tables, etc. They will learn the basics for spreadsheeting, database applications, and presentation software, (Microsoft Office 2003), as well as developing strategies for successful searches on the World Wide Web. In addition, they will begin to develop vocational skills and attitudes that are highly valued in today’s work world while learning to handle the tasks required for entry into full-time secretarial work.

OFFICE TECHNOLOGY RELATED SCIENCE II

Grade 10, Course #1652

Q.P. 1.00

1.00 Credit

Students will acquire a thorough background in the basic accounting procedures used to operate a business. They will learn accounting terminology, procedures and principles, and practices related to a merchandizing business organized as a partnership. They will learn how to integrate accounting principles with computerized accounting, and how modern computerized automated accounting systems function.

OFFICE TECHNOLOGY SHOP III

Grade 11, Course #0653

Q.P. 1.00

4.50 Credits

Students will gain a mastery of rapid and accurate transcription in mailable form by using the non-shorthand element of transcription—machine transcription. In addition, they will improve their ability to communicate for business purposes through oral and written message while continually enhancing their grammar, punctuation, spelling, and capitalization skills while at the same time further developing their keyboarding skills. Students will work towards laying a solid foundation in computers by learning the fundamentals of WordPerfect, and integrating their academic courses through assignments on the Internet. They, too, will become acquainted with decision-making that emphasizes attitudes, values, choice making, and the problems facing the consumer.

OFFICE TECHNOLOGY RELATED SCIENCE III

Grade 11, Course #1653 Q.P. 1.00 1.00 Credit

Students will learn how computers are used for accounting applications with today's powerful computer systems. A hands-on approach to learning how modern computerized automated accounting system functions are used and hands-on experience in integrating accounting with other business applications such as spreadsheets and word processors is presented.

OFFICE TECHNOLOGY SHOP IV

Grade 12, Course #0654 Q.P. 1.00 4.50 Credits

Students will be made aware of the desirable traits and characteristics of a good secretary. They will learn the strategies needed for a successful job search while using the Internet as a tool in their quest. Students will learn the concepts of Web page design, and apply it to Microsoft Office FrontPage 2000, and will develop the knowledge and skills necessary to obtain a position (and to perform successfully once on the job) in a medical office, a hospital, or an extended care facility.

OFFICE TECHNOLOGY RELATED SCIENCE IV

Grade 12, Course #1654 Q.P. 1.00 1.00 Credit

Students will be introduced to the features of a patient billing system, and the important concepts relating to a medical office accounting function. They will also learn about the general flow of information in a dental office, the major dental services that are covered by insurance companies, and the role that computers play in a dental office. Students will also get training using software to bill patients, prepare estimates, file claims, record data, print reports, and schedule appointments.

FACILITIES MANAGEMENT SHOP

FACILITIES MANAGEMENT SHOP I

Grade 9 Course #0901 Q.P. 1.00 4.50 Credits

The Freshmen will learn how to use basic measuring instruments, hand tools, and safe operation of shop power equipment. Students will review basic mathematical computations necessary to assist them in their work. Students will learn how to work from simple shop drawings to accomplish their tasks. The students will build several wood projects and will learn how to measure, cut, clean and solder copper tubing to required dimensions.

FACILITIES MANAGEMENT RELATED I

Grade 9 Course #1901 Q.P. 1.00 1.00 Credit

The Freshmen will learn the theory of safety, hand tools, power tools and measurements. A review of basic math will be stressed. Audio visual films and tapes will also be used.

FACILITIES MANAGEMENT SHOP II

Grade 10 Course #0902 Q.P. 1.00 4.50 Credits

The Sophomores will learn how to read, draw, interpret, and wire basic electrical circuits in a safe, efficient and workable manner. The students will learn how to use voltage testers, continuity testers, and basic electrical hand tools. The students will also learn how to safely operate Oxy-Acetylene welding equipment. The students will learn how to puddle weld, butt weld, braze and use a cutting torch.

FACILITIES MANAGEMENT RELATED II

Grade 10 Course #1902 Q.P. 1.00 1.00 Credit

The Sophomores will learn the theory of Plant and Building maintenance. The course covers all the trades which pertain to the program. Building Trades Blueprint reading will be studied in depth from the beginning to the end. Audio visual films and tapes about each trade will be shown.

FACILITIES MANAGEMENT SHOP III

Grade 11 Course #0903 Q.P. 1.00 4.50 Credits

The Juniors will learn how to safely operate arc and mig welding machines. They will learn how to prepare, prime and paint different types of materials. The student will learn how to make basic sheet metal projects using the shear and box brake.

FACILITIES MANAGEMENT RELATED III

Grade 11 Course #1903 Q.P. 1.00 1.00 Credit

The Juniors will learn the theory of electrical and plumbing because of its importance in that it is a licensed trade that pertains to healths. Mechanical and architectural drawings will be learned and put into practice. Audio visual films and tapes about the trades are covered and shown.

FACILITIES MANAGEMENT SHOP IV

Grade 12 Course #0904 Q.P. 1.00 4.50 Credits

The Seniors will learn how to accomplish basic landscaping and grounds up-keep. The students will learn how to prepare and pour concrete forms as they pertain to the maintenance and upkeep of a physical plant. The student will learn how to put to use those aspects that he/she has learned in shop by actively participating in the repair, maintenance and general upkeep of the school building and grounds.

FACILITIES MANAGEMENT RELATED IV

Grade 12 Course #1904 Q.P. 1.00 1.00 Credit

The Senior students will learn the theory of developing troubleshooting skills along with landscaping. Mechanical and architectural drawing will be done in depth. Audio visual films

and tapes will be covered and shown.

PLUMBING SHOP

PLUMBING SHOP I

Grade 9 Course #0951

Q.P. 1.00

4.50 Credits

The Freshmen will learn how to thread pipe. They will have a basic understanding of I.P.S. measurements and applications. Students will learn the proper use of pipe wrenches, pipe fittings, and lubricating oils. Students will learn to cut and ream copper tubing and to assemble the tubing using various procedures including flared, soldered and compression.

Students will learn the proper use of torches. Students will learn to set up a lead pot and to yarn, pour, and caulk a lead soil pipe joint. Students will also learn basic water, and drain line sizing, laws and materials. Safety will be taught during each phase of the course.

PLUMBING RELATED SCIENCE I

Grade 9 Course #1951

Q.P. 1.00

1.00 Credit

This introductory course will give the new plumbing student a brief history of plumbing as well as a general overview of the many different duties and opportunities available to a student schooled in the plumbing trade. This first year program will make the student proficient in the use of the ruler in conjunction with the proper methods and tools used in the assembly of steel pipe and the soldering of copper pipe.

PLUMBING SHOP II

Grade 10 Course #0952

Q.P. 1.00

4.50 Credits

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

PLUMBING RELATED SCIENCE II

Grade 11 Course #1952

Q.P. 1.00

1.00 Credit

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

of several basic plumbing fixtures such as faucets, waterclosets, and water heaters will be reviewed extensively.

PLUMBING SHOP III

Grade 11 Course #0953

Q.P. 1.00

4.50 Credits

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

Students will learn about floor drains, and the different laws covering them. Bathtub and shower installations will be covered. Students will learn about different types of sewer ejectors. Different testing methods will be taught. Students will learn duriron, glass pipe, and poly special waste systems. Students will learn about special waste traps including plaster, grease, acid, gasoline and sand traps.

PLUMBING RELATED SCIENCE III

Grade 11 Course #1953

Q.P. 1.00

1.00 Credit

The Juniors will continue on the blueprint reading and drawing as they move into sizing water mains and appropriate valve installations. The course will cover the Mass. plumbing code requirements concerning drains, vents, water piping, as well as an in-depth look at gas piping and hydronic heating systems. Septic tanks, special wastes and backflow prevention will also be covered extensively.

PLUMBING SHOP IV

Grade 12 Course #0954

Q.P. 1.00

4.50 Credits

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

Students will learn about trap fixture and pipe stoppages, and how to correct and avoid them. Students will learn about fixtures including wall hung water closets, floor mount water closet, wall hung lavatories, vanity lavatories, kitchen sinks, wall-hung urinals, pedestal urinals and bidets. Students will also learn special hospital and commercial fixtures. Students, in addition, will learn about water heaters fueled by gas, oil electric and solar. Students will learn about indirect, direct and instantaneous heaters.

PLUMBING RELATED SCIENCE IV

Grade 12 Course #1954

Q.P. 1.00

1.00 Credit

The Seniors will continue with blueprint reading and will, by this time, be able to design and rough the plumbing system for residences and commercial installations. The finer points of

plumbing design will be covered such as different manufacturers and style. The student will learn many principles of business such as estimating jobs, labor costs, pricing material and figuring overhead costs. Heat loss and BTU use related to heating system design will also be covered. A Senior class project will involve the complete design of the student's dream house complete with all plumbing and heating properly sized and installed.

POWER EQUIPMENT TECHNOLOGY SHOP

POWER EQUIPMENT TECHNOLOGY SHOP I

Grade 9 Course #0961

Q.P. 1.00

4.50 Credits

The freshmen will learn the basics of outdoor power equipment service with the emphasis on safety and proper use of tools. They will learn and understand the safe use and introduction to power and machine tools along with safety in a shop environment. Students will be familiarized with component names and the fundamentals of a two (2) and 4 (4) cycle engine operation.

Freshmen will disassemble and assemble both 2 and 4 cycle engines. They will learn minor troubleshooting of engines, which in turn will lead to minor tune-ups. Students will be taught the proper use and maintenance of outdoor power equipment.

POWER EQUIPMENT TECHNOLOGY RELATED SCIENCE I

Grade 9 Course #1961

Q.P. 1.00

1.00 Credit

The Freshmen will learn the function of working safely in the shop environment. We will be certain that all students understand and recognize all designs of four stroke engines. We will demonstrate to the student simple diagnosis and tune-up on single cylinder engines. Freshmen will also learn about hand and power shop equipment, fire control, and use of extinguisher equipment.

Students will learn how to identify various engine makes and models, how to utilize parts, books, microfiche as well as repair manuals and the use of computers to research information. Students will become proficient in the dismantling and re-assembly of single cylinder four stroke engines.

POWER EQUIPMENT TECHNOLOGY SHOP II

Grade 10 Course #0962

Q.P. 1.00

4.50 Credits

The Sophomores should be able to rebuild any four or two cycle engine. We will familiarize the student in the reading of measuring tools, such as simple and precision will be introduced. They will learn about valve work, engine cylinder reconditioning, complete engine rebuilding and the use of special tools. The basic theory of all designs of two-stroke cycle engine will be taught.

Carburetor principles and design, plus the repair and rebuilding of all will be introduced.

They will also learn about governor assemblies and adjustment.

POWER EQUIPMENT TECHNOLOGY RELATED SCIENCE II

Grade 10 Course #1962 Q.P. 1.00 1.00 Credit

The sophomores will be instructed in how to properly read measuring instruments, micrometers, inside calipers, etc. Basic engine rebuilding will be introduced with hands on training in the classroom. As the student progresses into the second year, the principles of design of carburetion will be offered. Students will repair carburetors, governor assemblies and adjustments. Basic theory of all two-cycle engines and engine valve work will be presented to all students. Chainsaw service and chain sharpening will also be covered.

POWER EQUIPMENT TECHNOLOGY SHOP III

Grade 11 Course #0963 Q.P. 1.00 4.50 Credits

The Juniors will learn basic electrical theory and understand and be able to adjust all types of ignition systems, basic electrical instruments, and electrical trouble shooting.

Students will learn basic welding skills, soldering, brazing and some arc welding. The introduction of power transmission systems, gears, belts, and chain will be given.

The students will also learn to work on motorcycles, ATV's, snowmobiles and other recreational vehicles two and four cycle.

POWER EQUIPMENT TECHNOLOGY RELATED SCIENCE III

Grade 11 Course #1963 Q.P. 1.00 1.00 Credit

The Juniors will be required to learn basic electrical theory, including and understanding all types of ignition systems, electrical instruments, and trouble shooting. Power transmission systems have been donated by area businesses, and the Juniors will have the opportunity to have hands on training on dismantling and re-assembling power trains.

During the third quarter students will learn about repairing generators and recreation vehicles. Computers will be used for parts inventory and work order simulation and how to fill out warrantee paper work.

POWER EQUIPMENT TECHNOLOGY SHOP IV

Grade 12 Course #0964 Q.P. 1.00 4.50 Credits

The Seniors will learn about Marine Engines using our Mercruiser stern drive unit, also marine cooling systems checking and rebuilding. Lower unit dismantling and repair will also be taught. We will also introduce the students to marine outboard both single and multi-cylinder and test running them in our test tank. Basic Diesel theory and design and complete tune-ups and adjustments are also taught. The advanced student will also be able to bore cylinders and rebuild crankshafts.

POWER EQUIPMENT TECHNOLOGY RELATED SCIENCE IV
Grade 12 Course #1964 Q.P. 1.00 1.00 Credit

This year, marine engines are introduced to the students to diagnose and repair. Water pump systems, lower unit gear assemblies, and shifting are all part of the marine course.

Midway through the year, students will begin learning about basic diesel theory and design.

Seniors will continue to completely rebuild hone, measure four cycle and two cycle engines. Small engine students compete yearly in statewide and nation wide competition in our school's V.I.C.A. Program.