

**MOUNT ABRAHAM
UNION HIGH SCHOOL**



**2012 - 2013
COURSE SELECTION GUIDE**

MOUNT ABRAHAM UNION HIGH SCHOOL

MISSION STATEMENT

The mission of the Mount Abraham Union High School community is to create and maintain a stimulating and respectful environment in which all are engaged, all pursue and promote learning, and all participate as active, responsible citizens.

PRIORITY LEARNING EXPECTATIONS

GOAL 1: All students will demonstrate competence in the areas of communication (speaking, listening, reading, writing, and information technology), computation, problem solving, research and the scientific process, Students will demonstrate ability *to think critically* throughout all areas of the curriculum.

Performance Targets:

All students will achieve selected "Vital Results" and "Field of Knowledge" standards in all required subject areas.

Students will demonstrate learning that synthesizes knowledge.

GOAL 2: All students will demonstrate awareness, knowledge and respect for the connections and differences among world cultures, natural environments, and economic and political systems.

Performance Target:

Students will incorporate knowledge of local and global systems—cultural, natural resources, economic and political—into the design and implementation of culminating projects.

GOAL 3: All students will demonstrate individual social responsibility through collaborating in solving *community problems*, accepting responsibility for their actions, and participating in the democratic process.

Performance Targets:

Students will engage in community and school service learning experiences that will apply knowledge and appreciation for the duties and responsibilities of citizenship, and the need to work cooperatively with others to resolve conflicts and set and achieve goals.

Each student will demonstrate, through a vehicle of his or her choice, an awareness and understanding of basic human equality regardless of racial, religious, gender, physical, intellectual, socio-economic and ethnic differences.

GOAL 4: All students will acquire the skills and attitudes necessary to develop and maintain a high quality of life through application of employment skills, nurturing skills, physical fitness and wellness; understanding, appreciating and participation in the arts, and planning for post-secondary training.

Performance Targets:

Students will develop a personalized learning plan.

Students will demonstrate the ability to make healthy choices.

Students will create or perform visual, musical or dramatic pieces.

STUDENT SERVICES DIRECTORY 2010-2011

Administration

Andrew Kepes - High School Principal
Kristine Evarts - Dean of Students (Grades 7 – 9)
Leon Wheeler - Middle School Principal
Nancy Yannett - Dean of Students (Grades 10 – 12)
Jeffrey & Mary Stetson - Athletic Directors

Teacher Leaders

Elise Cleary - Arts
Richard Desorda - Social Studies
Maureen Deppman - Personal Learning/Horizons
Michael Ferland - Science, Driver Education
Teri Fitz-Gerald - Computer Programs, Media Services
Ellen Repstad - Literacy Coordinator
Julie St. Martin - Math
Simone Skerritt - Foreign Language
Mary Stetson - Physical Education, Health, and Family and Consumer Science
Paul Stetson - Technology Education, Living Arts
Melanie Stulz-Backus - English

School Counseling Staff

Mary Barnett - School Counselor (Grades 9 – 12)
Alan Kamman - School Counselor (Grades 10 – 12; G-S)
Yvette LaPete - Registrar
Jayne Miller - Social Worker
Gary Unger - School Counselor (Grades 9 – 12)
Debbie Van Schaack - School Counselor (Grades 10 – 12; A – F, T – Z)

INTRODUCTION TO THE COURSE SELECTION GUIDE

The Course Selection Guide contains all the information you will need to plan your education and select the courses to meet your goals. The CSG is organized into four parts.

PART 1 contains information about how to use this guide including: (1) preparing a 4-year plan, (2) graduation requirements, (3) on-line resources, (4) a summary spreadsheet of all courses.

PART 2 contains specific information about programs, policies and procedures at Mt. Abraham Union High School.

PART 3 contains descriptions of all the numbered courses offered at Mt. Abraham Union High School. Courses are grouped by department and arranged alphabetically.

For more detailed information about individual course content, standards, assessment, and expectations, see the course syllabus at the Mt. Abraham website, www.mtabe.k12.vt.us, and click on Course Selection Guide.

PART 4 contains the entire course catalog for Patricia A. Hannaford Career Center, which is located adjacent to Middlebury Union High School. Generally the courses at Hannaford are available only to 11th and 12th graders.

PART 1

COURSE PLANNING AND SELECTION

COURSE SELECTION GUIDELINES

As a student, you are required to take specific courses to fulfill graduation requirements, but many others may be selected to meet your personal goals. In selecting next year's classes, we encourage you to take those classes that will make you a better person as well as a better student. We recommend that you talk over your course selections with your parents, teachers and school counselor. These discussions will help you to establish, evaluate, and fine-tune your academic plans. In addition, all students are encouraged to become involved in personalized learning courses, Advanced Placement courses, and Mt. Abe's extracurricular offerings. These are great opportunities to develop or strengthen existing interests and skills.

MT. ABRAHAM UNION HIGH SCHOOL 4 Year Plan Worksheet

On the following page is a 4 Year Plan worksheet, which you may use to plan courses, activities and personal learning. Students are given the opportunity to develop a four year plan using the Vermont Guidance Central website. This electronic document can be updated annually. Students create their own account which can be accessed online. Parents are encouraged to review this plan with their students as they choose courses and make post-secondary plans. Vermont Guidance Central can be accessed through the guidance web page.

Minimum Graduation Requirements

4 Credits of English	3 Credits of Science including:
3.5 Credits of Social Studies including:	1.0 Credit of Life Science
1.0 Credit of Global Studies	1.0 Credit of Physical Science
2.0 Credits of US History	3 Credits of Math
0.5 Credits of Age of Legality	1 Credit Fine Art
0.5 Credit of Human Development	1.5 Credits of Physical Education
	7.5 Elective Credits

Total Minimum Credits to Earn a Diploma: 24

Challenge Diploma: 28

GRADUATION REQUIREMENTS

Students in grades 9 – 12 are required to be enrolled in a minimum of six classes (three credits) per semester. A total of 24 credits are required. **Students are not eligible to participate in extra-curricular activities or be on the Honor Roll unless they are enrolled in three credits per semester or two credits with a work release.** See Parent-Student Handbook for eligibility requirements.

Student:	Mt. Abraham Union High School 4 Year Plan Worksheet	Counselor: Van Schaack Kamman
YOG:		Advisor:

	9th Grade	Cr	10th Grade	Cr	11th Grade	Cr	12th Grade	Cr	Min. Credits Required
English									4 Credits
Math									3 Credits
Science									3 1 Natural Science (Biology) 1 Physical Science
Social Studies									3 Credits 1 Global Studies 2 US History .5 Age of Legality
Phys Ed									1.5 Credits
Human Development									.5 Credits
Fine Arts									1 Credit
Second Language									
Technical Education									
Electives									7.5 Credits
Electives									
Credit Total									
24 Total Minimum Credits to Earn a Diploma 28 Credits Needed for Challenge Diploma									

WEB RESOURCES FOR STUDENTS AND PARENTS

Mt. Abraham maintains a comprehensive website with many resources. The guidance webpage can be found under the High School heading of the Mt. Abraham home page. Here you will find announcements for upcoming events and reminders for high school students. There are numerous links to pages and websites that address college selection, college admission testing, career awareness, job search, foreign exchange programs, and information on branches of the US military. Academic planning information can be found in the online version of the Course Selection Guide. Parents, students and graduates can also view our current School Profile, review graduation requirements, request transcripts, and find contact information at the guidance home page. Please feel free to use this online resource often. It can be found at www.mtabe.k12.vt.us

COURSE SUMMARY FOR 2012 – 2013

New courses will be in bold print

Course Number	Department and Course Description	Grade	Credit	Prerequisite and Comments
	ARTS (Courses for Fine Arts)			
11202	Introductory Art	9 – 12	.50	
13301	Theater Arts	9 – 12	.50	
11201	Realistic Drawing	10 – 12	.50	Introductory Art
11203	Painting and Illustration	10 – 12	.50	Introductory Art
11301	Graphic Design and Communication	9 – 12	.50	Introductory Art or approval from the teacher
11211	Ceramics 1	9 – 12	.50	
11213	Ceramics 2	10 – 12	.50	Ceramics 1
11221	Art Media and Crafts	9 – 12	.50	
11215	Calligraphy	9 – 12	.50	
11350	Art, Power & Politics	10 – 12	.50	Introductory Art or approval from the teacher
11410	AP Studio Art A	11 – 12	.50	Recommendation of the art department and completion of at least three visual art classes
11411	AP Studio Art B	11 – 12	.50	Recommendation of the art department and completion of at least three visual art classes
11302	Sculpture	10- 12	.50	Introductory Art, Art Media or Ceramics 1
11217	Jewelry I / Metalsmithing	9 – 12	.50	
11219	Jewelry Design II / Metalsmithing	10 – 12	.50	Jewelry I
56201	Applied Architecture 1	9 – 12	.50	
56203	Applied Architecture 2	10 – 12	.50	Applied Architecture 1
	COMPUTER PROGRAMS			
20103	Programming Logic 1	9 – 12	.50	Integrated Math 1
20104	Programming Logic 2	9 – 12	.50	Introduction to Programming Logic 1
20110	Tech Adventures	9 – 12	.50	
20301	Web Design 1	9 – 12	.50	
20311	Web Design 2	9 – 12	.50	Web Design 1
20203	Video Production	9 – 12	.50	
20213	Advanced Video Production	9 – 12	.50	Video Production
56104	CAD - Mechanical	9 – 12	.50	Technical Drawing I

Course Number	Department and Course Description	Grade	Credit	Prerequisite and Comments
	COMPUTER PROGRAMS (Cont'd)			
56401	CAD – Architectural	10 – 12	.50	Technical Drawing I
	DESIGN AND TECHNOLOGY EDUCATION			
25321	School Yearbook (S1)	10 – 12	.50	
25322	School Yearbook (S2)	10 – 12	.50	Teacher recommendation and B average or better from first semester
57104	Industrial Technology 1 – 4	9 – 12	.50	
57201	Digital Photography 1 & 2	9 – 12	.50	
56101	Technical Drawing I, II, & III	9 – 12	.50	
56201	Applied Architecture 1	9 – 12	.50	
56203	Applied Architecture 2	9 – 12	.50	Applied Architecture 1
56205	Architectural Drawing 1 – 4	10 – 12	.50	Technical Drawing I or Applied Architecture
56104	CAD – Mechanical	9 – 12	.50	Technical Drawing I
56114	From Concept to Creation 1 – 4	10 – 12	.50	Technical Drawing I, CAD or Industrial Technology with emphasis on CAD/CAM or permission from instructor
56401	CAD – Architectural	10 – 12	.50	Technical Drawing I
57101	Woodworking 1 – 5	9 – 12	.50	
57301	Essentials of Fire Fighting – Class	11 – 12	.50	Fall
57302	Essentials of Fire Fighting – Class	11 – 12	.50	Spring
57303	Essentials of Fire Fighting – Elective	11 – 12	.50	Fall
57304	Essentials of Fire Fighting – Elective	11 – 12	.50	Spring
57305	Essentials of Fire Fighting – Math	11 – 12	.50	Fall
57306	Essentials of Fire Fighting – Math	11 – 12	.50	Spring
57307	Essentials of Fire Fighting – English	11 – 12	.50	Fall
57308	Essentials of Fire Fighting – English	11 – 12	.50	Spring
	DRIVER EDUCATION			
59201/ 59202	Driver Education	10 – 12	.50	Students must be at least 15 years old and have a valid learner's permit on the first day of the class
	ENGLISH			
25101	English 9 A	9	.50	
25102	English 9 B	9	.50	
25201	English 10 A	10	.50	

Course Number	Department and Course Description	Grade	Credit	Prerequisite and Comments
	ENGLISH (Cont'd)			
25202	English 10 B	10	.50	
25301	Composition 1	10 – 12	.50	
25302	Composition 2 – Advanced Composition	10 – 12	.50	Composition 1
25303	Creative Writing	10 – 12	.50	
25304	Journalism	10 – 12	.50	
25401	American Literature: 19 th Century	11 – 12	.50	
25402	American Literature: 20 th Century	11 – 12	.50	
25306	Shakespeare	10 – 12	.50	
25405	Short Story	11 – 12	.50	
25406	Philosophy: An Introduction	11 – 12	.50	
25403	World Literature	11 – 12	.50	
25408	Media Literacy	11 – 12	.50	
25421	AP English A	12	.50	
25422	AP English B	12	.50	
25411	American Studies A	11	.50	
25412	American Studies B	11	.50	
25415	Page to Screen	10 – 12	.50	
25409	Turn the Page	10 – 12	.50	Instructor permission required
	FAMILY & CONSUMER SCIENCES			
58104	Basic Concepts of Food & Nutrition I	9 – 12	.50	
58105	Basic Concepts of Food & Nutrition II	9 – 12	.50	Basic Concepts of Food and Nutrition I
58101	Foods of the USA	10 – 12	.50	Basic Concepts of Food and Nutrition I
58106	Experiences in Child Care	9 – 12	.50	
58110	Independent Living	11 – 12	.50	
	MATHEMATICS			
30103	Bridge to Integrated Math A	9	.50	
30104	Bridge to Integrated Math B	9	.50	
30105	Integrated Math 1 A	9 – 10	.50	
30106	Integrated Math 1 B	9 – 10	.50	

Course Number	Department and Course Description	Grade	Credit	Prerequisite and Comments
	MATHEMATICS (Cont'd)			
30201	Integrated Math 2 A	9 – 12	.50	
30202	Integrated Math 2 B	9 – 12	.50	
30301	Integrated Math 3 A	9 – 12	.50	
30302	Integrated Math 3 B	9 – 12	.50	
30101	Money Matters A	11 – 12	.50	
30102	Money matters B	11 – 12	.50	
30407	Statistical Reasoning (S1)	12	.50	Integrated Math 3
30406	Advanced Math Seminar (S2)	12	.50	Integrated Math 3
30305	Pre-Calculus A	10 – 12	.50	C- or better in IM 3
30306	Pre-Calculus B	10 – 12	.50	C- or better in IM 3
30401	AP Calculus A	11 – 12	.50	Completion of Pre-Calculus
30402	AP Calculus B	11 – 12	.50	Completion of Pre-Calculus
30001	Math Lab (Semester 1)	9 – 12	0	
30002	Math Lab (Semester 2)	9 – 12	0	
	MUSIC			
12201	Performing Group Chorus A	9 – 12	.50	
12202	Performing Group Chorus B	9 – 12	.50	
12203	Chorus A – Minor	9 – 12	.25	With director permission
12204	Chorus B – Minor	9 – 12	.25	With director permission
12211	A Cappella A	9 – 12	.25	Must be in Performing Chorus for at least one year or have permission from the director
12212	A Cappella B	9 – 12	.25	Must be in Performing Chorus for at least one year or have permission from the director
12249	Piano Class A	9 – 12	.50	
12250	Piano Class B	9 – 12	.50	
12251	Piano Accompanist	9 – 12	.50	
12241	HS Band A – Major	9 – 12	.50	2 years of MS Band or permission of instructor
12242	HS Band B – Major	9 – 12	.50	2 years of MS Band or permission of instructor
12245	HS Band A – Minor	9 – 12	.25	Permission from instructor
12246	HS Band B – Minor	9 – 12	.25	Permission from instructor

Course Number	Department and Course Description	Grade	Credit	Prerequisite and Comments
	MUSIC (Cont'd)			
12243	Jazz Ensemble A	9 – 12	.25	HS Band or permission from instructor
12244	Jazz Ensemble B	9 – 12	.25	HS Band or permission from instructor
12141	The Age of Jazz	9 – 12	.50	
12143	Rock Band! A	9 – 12	.50	
12144	Rock Band! B	9 – 12	.50	
	Music Department Leadership Development	9 – 12	.50	
	PERSONALIZED LEARNING			
	Independent Learning Opportunity (ILO)	8 – 12	.50	
60401	Pathways Elective (Fall)	10 – 12	.50	9 th Grade with permission
60402	Pathways Elective (Spring)	10 – 12	.50	9 th Grade with permission
70000	Independent Study Courses	9 – 12	.50	
74021	DUO (Do Unto Others...)	9 – 12	.25	
76001	Summer CCV Course	12	.50	
76021	Middlebury College Course	12	.50	
76030	CCV – Introduction to College Studies	11 – 12	.50	
76031	Community College of Vermont (CCV)	12	.50	
50450	Service Learning/Sustainable Communities	10 – 12	.50	9 th Grade with permission
60175	Virtual High School	9 – 12	.50	
	PHYSICAL EDUCATION & HEALTH			
36101	Physical Education 9 A	9	.50	Required for all 9 th graders
36102	Physical Education 9 B	9	.50	Required for all 9 th graders
36201	Senior High Elective PE	10 – 12	.50	Physical Education 9 A and 9 B
37201	Human Development	10	.50	Required for graduation
36202	Personal Fitness	10 – 12	.50	Classes may meet outside of the school day
36204	Healthy Choices	9 – 12	.50	
37205	Teen Issues	10 – 12	.50	Successful completion of Human Development
Course Number	Department and Course Description	Grade	Credit	Prerequisite and Comments
	SCIENCE			
40101	Foundational Science A	9	.50	

Course Number	Department and Course Description	Grade	Credit	Prerequisite and Comments
	SCIENCE (Cont'd)			
40102	Foundational Science B	9	.50	
41201	Biology A: Basic Themes	10	.50	
41202	Biology B: Secrets of Life	10	.50	
41203	Biology of Foods: From Farm to Plate A	10 – 12	.50	
41204	Biology of Foods: From Farm to Plate B	10 – 12	.50	
40160	Climate Change	10 – 12	.50	
43401	Physics 1 A	10 – 12	.50	Completion of Foundational Science and IM 1
43402	Physics 1 B	10 – 12	.50	Completion of Physics 1 A and IM 1
43411	Modern Physics: Physics 2 Strand A	11 – 12	.50	Completion of Physics 1A & 1B & IM 2
43412	Electromagnetics and Robotics: Physics 2 Strand B	11 – 12	.50	Completion of Physics 1A & 1B & IM 2
43413	Engineering Design: Physics 2 Strand C	11 – 12	.50	Completion of Physics 1A & 1B & IM 2
43414	Independent Physics Research: Physics 2 Strand D	11 – 12	.50	Completion of Physics 1A & 1B & IM 2
43201	Chemistry 1 A: Our Chemical World	9 – 12	.50	Integrated 1 or permission of instructor
43202	Chemistry 1 B: A Closer Look At Atoms	9 – 12	.50	Chemistry 1 A or permission of instructor
43211	ZAP! Electricity and Magnetism	10 – 12	.50	Completion of Chemistry 1A & 1B
43212	Doing Chemistry Experiments!	10 – 12	.50	Completion of Chemistry 1A & 1B
41403	Anthropology	11 – 12	.50	Biology A & B or permission of instructor
40151	Astronomy	10 – 12	.50	Foundational Science A & B
40210	Forensic Science	11 – 12	.50	
40170	Geology, The Earth Beneath Our Feet	11 – 12	.50	
41401	AP Biology A	11 – 12	.50	Biology A & B or Biology of Foods A & B, Chemistry 1 with grades of B or higher and permission of instructor
41402	AP Biology B	11 – 12	.50	Biology A & B or Biology of Foods A & B, Chemistry 1 with grades of B or higher and permission of instructor
41404	AP Biology Lab A	11 – 12	.50	
41405	AP Biology Lab B	11 – 12	.50	
40401	Advanced Environmental Science A	11 – 12	.50	Completion of Foundational Science, Biology, IM 2, Chemistry is recommended
40402	Advanced Environmental Science B	11 – 12	.50	Completion of Foundational Science, Biology, IM 2, Chemistry is recommended
40110	Science In The Field	10 – 12	.50	Successful completion of Foundational Science, Biology and be concurrently enrolled in IM 2

Course Number	Department and Course Description	Grade	Credit	Prerequisite and Comments
	SCIENCE (Cont'd)			
40115	Wetlands For All	10 – 12	.50	Successful completion of Foundational Science, Biology and be concurrently enrolled in IM 2
43301	Second Year Chemistry A	10 – 12	.50	Chemistry 1
43302	Second Year Chemistry B	10 – 12	.50	Chemistry 1
	SECOND LANGUAGE			
46101	French 1 A	9 – 12	.50	
46102	French 1 B	9 – 12	.50	
46103	French 2 A	9 – 12	.50	C or better in French 1
46104	French 2 B	9 – 12	.50	C or better in French 1
46301	French 3 A	10 – 12	.50	C or better in French 2
46302	French 3 B	10 – 12	.50	C or better in French 2
46401	French 4 A	11 – 12	.50	C or better in French 3
46402	French 4 B	11 – 12	.50	C or better in French 3
46403	French 5 A	11 – 12	.50	C or better in French 4
46404	French 5 B	11 – 12	.50	C or better in French 4
47101	Latin 1 A	9 – 12	.50	
47102	Latin 1 B	9 – 12	.50	
47103	Latin 2 A	9 – 12	.50	C or better in Latin 1
47104	Latin 2 B	9 – 12	.50	C or better in Latin 1
47301	Latin 3 A	10 – 12	.50	C or better in Latin 2
47302	Latin 3 B	10 – 12	.50	C or better in Latin 2
47401	Latin 4 A	11 – 12	.50	C or better in Latin 3
47402	Latin 4 B	11 – 12	.50	C or better in Latin 3
47403	Latin 5 A	12	.50	C or better in Latin 4
47404	Latin 5 B	12	.50	C or better in Latin 4
48101	Spanish 1 A	9 – 12	.50	
48102	Spanish 1 B	9 – 12	.50	
48103	Spanish 2 A	9 – 12	.50	C or better in Spanish 1
48302	Spanish 2 B	9 – 12	.50	C or better in Spanish 1
48301	Spanish 3 A	10 – 12	.50	C or better in Spanish 2

Course Number	Department and Course Description	Grade	Credit	Prerequisite and Comments
	SECOND LANGUAGE (Cont'd)			
48302	Spanish 3 B	10 – 12	.50	C or better in Spanish 2
48401	Spanish 4 A	11 – 12	.50	C or better in Spanish 3
48402	Spanish 4 B	11 – 12	.50	C or better in Spanish 3
48403	Spanish 5 A	11 – 12	.50	A/B average in Spanish 4 or A+ in Spanish 3. See course guide.
48404	Spanish 5 B	11 – 12	.50	A/B average in Spanish 4 or A+ in Spanish 3. See course guide.
47500	Ancient and Modern Mythologies: From Greeks to Geeks	11 – 12	.50	
	SOCIAL STUDIES			
50101	Global Studies	9	.50	
50102	Global Studies	9	.50	
50301	US History A	10	.50	US History is required for all 10 th graders and is a graduation requirement
50302	US History B	10	.50	US History is required for all 10 th graders and is a graduation requirement
50440	World Issues	10 – 12	.50	
50411	American Studies A	11	.50	
50412	American Studies B	11	.50	
50403	Age of Legality	12	.50	Required for all seniors for graduation
50404	We The People	12	.50	
50413	20 th Century American History A	11 – 12	.50	This course of American Studies is required for graduation
50414	20 th Century American History B	11 – 12	.50	This course of American Studies is required for graduation
50421	Psychology	12	.50	Grade 12 or special permission of teacher
50422	Sociology	12	.50	Grade 12 or special permission of teacher
50401	AP US History A	12	.50	See course for more information
50402	AP US History B	12	.50	See course for more information

PART 2

LEARNING OPPORTUNITIES, COURSES, PROGRAMS, POLICIES, AND EXTRA-CURRICULAR ACTIVITIES

PERSONALIZED LEARNING

HIGH SCHOOL ADVISORIES

Research indicates that a positive adult relationship contributes to student success in school and a stronger connection to school and community. The purpose of the Mt. Abraham Union High School Advisory Program is to provide a structure to support each student in achieving his/her goals (advocacy) and to foster a personal connection to the community. Each advisory is arranged by grade and level and supports 10—12 students. Advisories meet daily.

CHALLENGE DIPLOMA

Note: A student must declare his or her intent to complete a Challenge Diploma before the end of 9th Grade. Students that transfer to Mt. Abraham as a sophomore must have approval from the Personalized Learning Teacher Leader.

Available to students entering grade 9 with completion by graduation
Provides opportunity for students to extend learning beyond school day
Students must maintain a minimum GPA of 3.0
Completion of 5 challenge assignments freshman year
Completion of 5 challenge assignments sophomore year
Completion of personal learning planning
Completion of 2 years of the same second language
Completion of 28 credits for graduation
Completion of any 2 advanced (AP) courses, college courses, or Virtual High School courses
Completion of 1 Independent Study, Senior Project, Pathways Elective or Pathways program course

PERSONAL LEARNING PLAN (PLP)

Available to students grades 7—12
Create a four year academic plan
Create a personal learning plan
Explore academic and social strengths, interests, aspirations and challenges
Explore opportunities and post-secondary options
Create a post-secondary plan

ELECTRONIC PORTFOLIO

Build an electronic portfolio of best work from academics and extra-curricular, which may be used in job or college application process.

JOBS PROGRAM

Available to students grades 9—12
Pay determined by grade level
Jobs available in the five town community
Maximum 10 hours per week
Contact the Horizons' office for more information

DUAL ENROLLMENT

Earning High School and College credits at the same time.

What is dual enrollment? Anytime a Mt. Abraham student is able to enroll at a college while still a high school student, credits may be earned at both institutions. Students must see Mrs. Deppman in the Personalized Learning department prior to the course start to receive high school credit.

Community College of Vermont. Mt. Abraham purchases vouchers from CCV each year, which will pay for grade 12 high school student's tuition for one semester in any course at any CCV campus. Books and other fees are your responsibility. There is an application process including a computer-based skills assessment. You may attend CCV in the fall, spring or summer. Interested? See Mrs. Deppman.

Middlebury College. Mt. Abraham along with all the other high schools in the immediate area is granted a certain number of openings for Grade 12 students to attend classes at Middlebury College. Courses are free, except for text books. You would earn credit at Mt. Abraham but you do not receive Middlebury College credits. See Mrs. Deppman.

VAST (Vermont Academy of Science and Technology). This dual-enrollment program sponsored by VTC permits a high school student to be enrolled full time at Vermont Technical College, at the Williston or Randolph campus. If you are accepted into this program, you may be able to finish your high school diploma requirements while completing your freshman year in college. See your counselor to learn about admission requirements.

University of Vermont. Statewide program for high school students to access **one** UVM course with tuition fully reimbursed by Next Generation Funds, a Vermont State Legislative funded program. Funds are available on a year to year basis. Students are entitled to one voucher under the Next Generation Funds to be used at one of the participating colleges. Interested students need only contact Nichole Hathaway, High School Student Advisor, to begin the process by calling 802.656.2085. Students must see Mrs. Deppman in the Personalized Learning department prior to the course start to earn high school credit.

Other Colleges. Over the years many Mt. Abraham students have attended colleges mainly in the summer between junior and senior year. If you are thinking of applying to a summer college program and would like to receive elective high school credit for it, see Mrs. Deppman before school ends in June to complete a contract.

Important Notes about College. Elective credit is awarded at the rate of 0.5 credits per semester of college course work regardless how many college credits are earned for the course. Students have the option of taking the letter grade assigned by the college or a pass/fail grade.

ENRICHMENT PROGRAM

The Personalized Learning department offers enrichment programs, which are open to all students. Many of these programs involve students from several grades. Some of the activities supported include

Scholars Bowl

New England Young Writers Conference

Governor's Institutes in Asian Cultures, Arts, Current Issues and Youth Activism, Engineering, Math, Science, Information Technology

Governor's Institute Winter Weekend

HOBY (Hugh O'Brien Youth Leadership) for sophomores only

Johns Hopkins Center for Talented Youth

INDEPENDENT LEARNING OPPORTUNITY (ILO)

An ILO is an interest based, independent project developed and supported by a mentor and advisor. ILO's may be used to fulfill graduation requirements in Social Studies, Science and English. A student must complete an independent readiness survey on independent learning and meet with a personalized learning advisor to develop a contract prior to enrolling in an ILO.

- Available to students in grades 8-12
- Earn core credit in Social Studies, Science or English
- Earn a letter grade
- Flexible start and end points (work not necessarily completed within the semester)
- Credit earned when standards are met
- Formal and public exhibition of work
- Mentor matching and support
- Regular advising
- Can be used to recover credit
- Assessed on content standards and skill standards

PATHWAYS

Pathways is a Mount Abraham independent learning program where you meet graduation requirements in a student-centered learning environment. Project-based learning and a variety of other learning modalities are used to meet Mt. Abraham's standards. A Pathways advisor works with you to create individualized projects or take courses from a menu of choices. Pathways students also work with a mentor or community partner to support their project learning. Learning is assessed and demonstrated at the end of each semester through public Exhibitions.

Pathways could be for you if you:

- Want to **pursue your own interests** and develop your own talents
- Can learn to **work independently**
- Want **hands-on** learning
- Can work with an advisor to design and complete **individual and group projects**

SCHOOL COUNSELING PROGRAMS

The Mt. Abraham Counseling Programs focus on three related student areas:

1. Academic support
2. Career/post-secondary planning
3. Personal and social development

Counselors serve students through individual, small-group, and large-group meetings. There are four professionally licensed counselors at Mt. Abraham, serving the middle school and high school.

POLICIES AND PRACTICES

COURSE REGISTRATION

Each year in February and March, all students in the 8th through 11th grades are required to register for the next year's courses. This is a process which should involve the student, counselor, advisor and parents. The 4-year plan worksheet in this booklet will be useful in planning ahead. Students complete a course registration form and turn it into their counselor who checks it for completeness and accuracy. Students are encouraged to meet with their school counselor to review course selections.

ADDING AND DROPPING COURSES

Students, parents and counselors devote a great deal of energy to course selection. Students will have four days from the first day of each semester in which to ADD or DROP a course. Dropping a core course is a serious decision which requires written parent permission.

After a four (4) day grace period, a student who drops a course will be assigned a grade of WP (withdrawn-passing) or WF (withdrawn-failing) for the marking period in that course. A grade of WF or WP will appear on the student's official transcript.

Note:

- WF will be included in the honor roll computation.
- WP will not be included in the honor roll computation. A WP or WF is assigned for one marking period. WF counts as an F for that semester and is used in GPA computation. WP does not affect GPA. Withdrawal grades will be reflected on a student's permanent transcript.

PASS-FAIL

Students may elect to be graded on a pass-fail basis for one credit per year. Once the student has decided on the PASS-FAIL evaluation, letter grades will not be issued. PASS grades are not considered in computation of grade point averages. FAIL grades count as an F and will be factored into cumulative GPA. Students must signify their intent for PASS-FAIL grades within one week of the start of the course. Full credit will be awarded toward graduation upon successful completion of the course. Pass/Fail grading will be listed on the student's permanent record.

GRADE POINT AVERAGE (GPA) AND CLASS RANK

Class rank will be calculated at the end of each school year and for seniors, at the end of the seventh semester. To receive a class rank, seniors must have completed at least two semesters at Mt. Abraham. For transfer students, the GPA provided by the sending school will be used, provided it is based on a 0—4 point system. If it is based on a different system (for example, 5 points for an "Honors" A), transfer student grades will be used to calculate a Mt. Abraham GPA and class rank.

Courses taken by Mt. Abraham exchange students in other countries will not be considered in a student's GPA or class rank, unless other arrangements are made beforehand. Academic experiences at other programs, such as dual enrollment programs, for which Mt. Abraham credit is granted will count in the GPA and rank. All these arrangements should be reviewed and confirmed with the student's school counselor.

EXTRA – CURRICULAR ACTIVITIES

As per school board policy, students must carry at least 3 credits per semester (or 2 credits and an approved work release) in order to participate in extra curricular activities and receive honor roll recognition. Students who are Home-Schooled need to contact the Principal for updated policies.

Students participating in extra-curricular activities will be required to sign a contract that holds participants to a level of behavioral expectations that exceeds the behavioral expectations set forth in the parent-student handbook.

ATHLETIC TEAMS

The Mt. Abraham interscholastic athletic program offers the following variety of individual team sports:

FALL

Boys Soccer
Girls Soccer
Field Hockey
Cross Country
Football

WINTER

Winter Track
Girls Basketball
Boys Basketball
Cheerleading
Wrestling

SPRING

Track and Field
Softball
Baseball
Golf
Lacrosse

ENVIRONMENTAL ACTION GROUP

Focuses on improving the sustainability and environmental consciousness of the Mt. Abe community.

FALL MUSICAL

Open to all students in grades 7-12. The fall musical highlights the talents of many of Mt. Abe's students.

FUTURE FARMERS of AMERICA

Future Farmers of America is open to student's grades 9-12 who have an interest in agriculture.

GAY-STRAIGHT ALLIANCE

This is a group for students grades 9-12 who are interested in civil rights, acceptance and tolerance.

MATH COUNTS

This activity is open to Middle School students who enjoy math. It meets once a week.

MATH LEAGUE

Mt. Abe is one of nine schools in the greater Burlington math league. Individual events at each meet cover topics in the categories of Arithmetic, Geometry, Algebra, and Advanced Math. The team test consists of questions from all categories. Five meets are scheduled during the school year.

NEW ENGLAND YOUNG WRITERS CONFERENCE

This is an opportunity for students in grades 10-12 to go to Breadloaf Conference Center for a long weekend and work with a published author and other young writers from throughout New England and New York.

ONE-ACT PLAY - THIN BUDGET PRODUCTION

This is an after school group that writes, directs and designs all aspects of their one-act plays. A competition takes place in the spring of the year.

PEER HELPERS

This is open to students 9-12 who are interested in community service, peer tutoring or leadership opportunities.

PROJECT GRADUATION STEERING COMMITTEE

Project Graduation is the school sponsored, drug and alcohol free party for Mt. Abe's graduating class. The steering committee is a volunteer group of seniors who meet regularly to do planning and fundraising for the annual Project Graduation celebration.

SCHOLAR'S BOWL

This group meets every Tuesday and Thursday for students who like trivia and academic competitions.

STARs

STARs is an acronym for Students Taking Action Responsibly. It is open to any middle school student interested in community service, leadership and tobacco use prevention. This group meets weekly.

STATE and DISTRICT MUSIC FESTIVALS

The Vermont Allstate Music Festival and Green Mountain Music District Festival are opportunities for band and choral students to audition and possibly perform with other students from around Vermont.

VERMONT YOUNG PLAYWRIGHTS

This is a group for student's grades 9-12 who love to write. Work done within this group can also qualify for challenge diploma credits.

VTLSP/SADD

Vermont Teen Leadership Safety Program/Students Against Destructive Decisions – A student leadership group dedicated to raising awareness and helping their peers and others in the school community make healthy and safe life choices.

VT HISTORY DAY

This group is for Middle School Students who are interested in History.

WORLD OF DIFFERENCE

This group focuses on anti-bias and diversity education, leading activities in advisories and classes. New members participate in three days of training in the fall.

PART 3

COURSE DESCRIPTIONS

FLOW CHART FOR SENIOR HIGH FINE ART CREDIT

Working in 2 Dimensions (2D):

Entry-level courses: **Introductory Art, Calligraphy**

2nd level courses: **Graphic Design & Communication, Painting & Illustration, Realistic Drawing, Art, Power and Politics** (Introductory Art is the prerequisite for all of these 2nd level courses)

Advanced course: **AP Studio Art A & B** (*Full year course- In order to take AP Studio Art a student must have completed at least three visual art classes and have the recommendation of an art teacher*)

Working in 3 dimensions (3-D):

Entry-level courses: **Applied Architecture I, Art Media, Ceramics I, Jewelry Design & Exploration**

2nd level courses:

Applied Architecture II (prerequisite: Applied Architecture I)

Ceramics II (prerequisite: Ceramics I)

Jewelry Design II/Metalsmithing (prerequisite: Jewelry Design & Exploration)

Sculpture (prerequisite: Introductory Art, Art Media or Ceramics I)

Advanced course: **AP Studio Art A & B** (*Full year course- In order to take AP Studio Art a student must have completed at least three visual art classes and have the recommendation of an art teacher*)

Performing Arts:

Piano

Choral Music

Instrumental Music

Theater Arts

Please check prerequisites for each course before signing up.

Each course is .5 credit hours with the exception of AP Studio Art, which is 1 credit. Students need 1 Fine Art credit for graduation.

ARTS – Courses for Fine Arts Credit

11202 INTRODUCTORY ART (Grades 9 – 12)

.50 Credit

Introductory Art is meant to be a first high school visual art class, introducing the other art classes through fun self-expressive projects that include color, design, drawing, painting, and sculpture. The only prerequisites are an open mind and a willingness to try. Elements and principles of design will be used as well as a variety of art media. Students will be encouraged to solve visual problems creatively, deepen awareness of aesthetics, develop an appreciation of cultural and historical art, learn the terminology to talk about what has been created, and become more visually aware so as to make informed choices for future art offerings.

This is a prerequisite for many art courses.

11301 THEATER ARTS (Grades 9 – 12)

.50 Credit

Theatre Arts is a hands-on fine art offering for students who want to explore drama. Students will rehearse, memorize and perform scenes from plays around the world. They will use improvisation and studio acting techniques to better understand performance. They will analyze plays to develop a deeper understanding of themselves and society.

Emphasis will be on contemporary plays. Shakespeare will not be used in this class, as his work gets sufficient treatment elsewhere in the Mt. Abe curriculum. Many students enroll in this course before going to A.R.T. but it is not a prerequisite.

11201 REALISTIC DRAWING (Grades 10 – 12)

.50 Credit

Have you ever wished that you could be one of those people who can draw things just the way they look in real life? In this class students will learn to work from life and observation to draw objects, people, animals, landscapes, interior and exterior spaces, etc. in a realistic manner. Through a series of drawing exercises designed to develop a new way of seeing, students will tap into the special functions of the right side of their brain in order to make drawing from observation easier. Give it a try – you'll be amazed at what you're able to create!

Prerequisite: Introductory Art or permission from instructor

11203 PAINTING AND ILLUSTRATION (Grades 10 – 12)

.50 Credit

In this course students will address both the technical and expressive aspects of working with paint as well as its application to the art of illustration. The lessons will emphasize composition and technique through the elements and principles of design. Students will have the opportunity to work with a variety of paint types, from watercolor to oils. Both realistic and abstract work will be assigned. This course is helpful for building an art portfolio and follows naturally from the course "Realistic Drawing".

Prerequisite: Introductory Art

11301 GRAPHIC DESIGN & COMMUNICATION (Grades 9 – 12)

.50 Credit

This course is an exploration of the visual culture we are all a part of. Graphic designers use text and images to communicate in the areas of advertising, visual identity, typography, package and poster design. Students will analyze and critique existing design examples and apply the elements and principles of design to specific design problems, which may include CD covers, brochures, posters, logo design and product packaging. Students will participate in classroom critiques. Students will acquire software skills (Photoshop, scanners, printers, and digital cameras) to complete projects. Selected work will be shown at the Fine Arts Festival.

Prerequisite: Introductory Art or approval from the teacher.

11211 CERAMICS 1 (Grades 9 – 12)

.50 Credit

Ceramics 1 is an introduction to basic methods of clay construction (coil, pinch, and slab) with some use of the potter's wheel. Through the construction of three-dimensional projects, students will develop knowledge of the properties of clay, hand-building methods, sculpture, beginning wheel skills, kiln stacking, firing methods and glaze application. Students will demonstrate ability in each of these areas by completion of individual projects and portfolio presentation.

No prerequisite – this is an entry level course.

11213 CERAMICS 2 (Grades 10 – 12)

.50 Credit

Ceramics 2 is an exploration of the craft and art of clay. This class is intended for students committed to gaining independence, skill and knowledge in the field. Students will apply glazes and alternative surface treatments and assist in the loading, firing and unloading of the kiln. Projects will include construction of various vessels and expressive sculptural forms. Hand building projects and the potter's wheel will be explored. A journal will be maintained and a portfolio of work will be presented.

Prerequisite: Ceramics 1

11221 ART MEDIA AND CRAFTS (Grades 9 – 12)

.50 Credit

Students will use the elements and principles of design to create works of art in a variety of craft related media that may include collage, relief printing, felting, handmade paper and books, batik, leather and wire sculpture, etc., in order to understand the distinct qualities of each medium.

No prerequisite - this is an entry level course.

11215 CALLIGRAPHY (Grades 9 – 12)

.50 Credit

Calligraphy is the art of beautiful handwriting. Five historic styles will be studied and practiced. Practice and patience are keys for success in this class and it appeals most to people who generally enjoy the written word. Students will acquire a basic understanding and appreciation of a variety of lettering styles and the necessity of consistent shape, size, slant, spacing, and particular layout and application for each. Real jobs will be sought such as posters, banners, poetry, monograms, letterheads, logos, yearbook, and advertising.

No prerequisite – this is an entry level class. This class does not serve as a prerequisite for any advanced art classes.

11350 ART, POWER & POLITICS (Grades 10 – 12)

.50 Credit

This is a studio art class focused on how artists use images and type to influence public opinion and motivate people's behavior. Students will research and discuss various artists, both current and historical who have created artwork with civic or social messages.

Students will respond visually through their own works of art that have social reform as subject matter.

This is primarily a studio art class with the focus on making art using the elements and principles of art and design.

Various media and subjects will be explored including:

- Relief Printing
- Drawing
- Painting
- Cartooning
- Propaganda Art

Prerequisite: Introductory Art or permission of the teacher

11410 AP STUDIO ART A (Grades 11 – 12) .50 Credit
11411 AP STUDIO ART B (Grades 11 – 12) .50 Credit

(Full year course)

AP Studio Art is an intensive course that addresses advanced concepts in drawing, painting and beyond. It is designed for students who want to continue their study of art at an advanced college level and who may be considering a career in art. The AP Studio Art program offers a choice of three different portfolios: Drawing, 2-D Design, and 3-D Design. In this course students are expected to perform at an advanced skill level while taking the initiative to develop their own commitments to content and personal voice. Each student designs a concentration focused on a particular visual concern in which he or she has a compelling interest, and explores and develops a body of work. A substantial amount of work is required outside of class. At the conclusion of the course students are expected to submit an extensive portfolio for evaluation.

Prerequisite: Recommendation of an art teacher and completion of at least three visual art classes

11302 SCULPTURE (Grades 10 – 12) .50 Credit

This course introduces students to the materials, techniques, and ideas that comprise the three-dimensional world of sculpture. Through individual assignments, students will explore the magic of three-dimensional space, scale, line, plane, mass, and materials. Their work will express the concepts of stillness and motion, formality and playfulness, predictability and surprise, illusion and integrity, in abstract and representational sculpture. Materials will include but not be limited to: wire, wood, cloth, stone, plaster, paper, cardboard, styrofoam, metal, foil, clay, new and recycled materials.

Prerequisite: Introductory Art, Art Media or Ceramics 1 or permission from instructor

56201 APPLIED ARCHITECTURE 1 (Grades 9 – 12) .50 Credit

Applied Architecture 1 is the first of two project-based courses that are designed to help students develop an understanding of Architecture through a hands-on-approach. Students will participate in a number of different learning experiences to explore the field of Architecture. Topics to be covered include: the history of Architecture and the study of famous architects; basic geometric shapes; steps to design a house; structural designs; roller coasters; interior design; and tree houses. For most projects, students will complete a set of drawings including floor plans, elevations, and perspective drawings. Students will also learn the related vocabulary and create a model. There are no prerequisites for this course although a background in technical drawing would be helpful. This course counts as .50 Fine Arts credit.

56203 APPLIED ARCHITECTURE 2 (Grades 10 – 12) .50 Credit

Applied Architecture 2 is a continuation of the Applied Architecture 1 course. This course also uses a "hands-on" approach to study the field of Architecture. Topics to be covered in this course include: How buildings relate to the human body; Covered Bridges or Barns; Historical Buildings in Addison County; Landscape and contour drawings; Miniature Golf course designs. With each experience, students will learn the related vocabulary and work on a project. This course counts as .50 Fine Arts credit.

Prerequisite: Applied Architecture 1

11217 JEWELRY I/METALSMITHING (Grades 9 – 12) .50 Credit

Jewelry design is an exciting way for students to show their creativity. In this course, students will be introduced to the arts and traditions of other cultures. Students will learn techniques used by various cultures to make jewelry. They will produce hand made jewelry using brass, copper, and sterling silver. The students will create pieces of jewelry that may include earrings, a series of rings, bracelets, necklaces, pendants and belt buckles. The students will become proficient in using hand tools and soldering techniques. Sterling silver and semi precious stones are available at cost.

No prerequisite - this is an entry level course.

11219 JEWELRY DESIGN II/METALSMITHING (Grades 10 – 12)

.50 Credit

The techniques used by today's jewelry makers have changed little since ancient times. It is a fascinating craft and can be pursued as a lifelong career. Students will continue using basic sawing, filing, soldering and stone setting skills and be introduced to enameling, metal etching, and small-scale metal sculpture. By adapting these techniques and their own designs, students will produce professional looking jewelry and art using metal as the primary medium. A lab fee is charged based on the cost of precious metals.

Prerequisite: Jewelry I

COMPUTER PROGRAMS

The "4C's" of 21st Century essential skills complement the traditional "3R's" of education. They are: Critical thinking and problem solving, Communication, Collaboration, and Creativity and innovation. When students understand when and how to use computers they can apply these skills to experiences across all disciplines. Many courses integrate technology tasks into their curriculum and the technology courses listed here offer students additional opportunities to interact with computer applications and to control computers through programming. Design courses such as CAD, Web Design, Video Production, and Digital Photo offer students real-world experiences using professional level applications. Introduction to Computer Programming and Web Design both involve coding to control what a computer does and displays. Tech Adventures is designed to help students explore and apply 21st Century technology to enhance their learning experiences throughout their educational and personal experiences. This collection of courses offers students a variety of experiences that will assist them in the digital world.

20103 PROGRAMMING LOGIC 1 (Grades 9 – 12)

.50 Credit

Programming Logic is an entry-level course designed to teach basic programming concepts such as variables, input/output procedures, loops, and decision-making structures. Students will work individually on computers using Scratch and Java. Logical thinking, using hands-on program development, is the focus of the course. Anyone planning a career in software design, engineering or business should take this course.

Prerequisite: Integrated Math 1

20104 PROGRAMMING LOGIC 2 (Grades 9 – 12)

.50 Credit

This course is a continuation of Programming Logic I. Students will learn and apply object oriented design structures. The primary learning language is currently in Java. Other languages may also be explored. Students will write original programs using these programming concepts.

Prerequisite: Introduction to Programming Logic 1

20110 TECH ADVENTURES (Grades 9 – 12)

.50 Credit

Use digital tools to enhance your school projects and your personal life. Learn and share about current applications, many of which are available for free! Work at your own pace to complete a palette of projects selected from a multitude of options. Tasks will be accessed and shared via a class wiki. Some examples of tasks to choose from are: create an avatar to represent you on social networking sites, create a website using Google Sites, make a Prezi to create a class presentation, use Skype to communicate long distance, create an interactive electronic poster using Glogster, or tons of other possibilities.

20301 WEB DESIGN 1 (Grades 9 – 12)

.50 Credit

Design and create attractive, usable web sites. HTML for a web language, Dreamweaver for web page design, and Fireworks for image editing are all introduced in this course. After practicing on assigned web sites, students will design an original site.

20311 WEB DESIGN 2 (Grades 9 – 12)

.50 Credit

Create dynamic, interactive web sites by learning advanced techniques. HTML, CSS, and javascript will be used to create professional looking web sites. This course will allow students to explore the programs which were introduced in Web Design 1 in greater depth.

Prerequisite: Web Design 1

20203 VIDEO PRODUCTION (Grades 9 – 12)

.50 Credit

Produce exciting movies using digital camcorders! Students will shoot footage with the camcorders, capture it into a video editing program on the computer, and export it in a variety of formats. The editing program, Adobe Premier Pro, is a professional level program that is used to teach students editing techniques. All students will be expected to produce a variety of video productions assigned by the teacher as well as a personal choice movie.

20213 ADVANCED VIDEO PRODUCTION (Grades 9 – 12)

.50 Credit

You liked Video Production, and now you're ready to push the envelop? In this course, we'll produce longer, more polished videos that are intended for public viewing, either on local cable access TV, the web, or video contests and festivals. You will expand your camera techniques, film vocabulary, and editing ability. We will experiment with special effects, and learn basic audio recording and editing skills as well. You will finish this course with a demo reel suitable for presentation to college admissions officers or potential employers. A personal video camera is recommended, but not required.

Prerequisite: Video Production

DESIGN & TECHNOLOGY EDUCATION

25321 SCHOOL YEARBOOK (Grades 10 – 12)

.50 Credit

25322 SCHOOL YEARBOOK (Grades 10 – 12)

.50 Credit

This class will produce the Mt. Abraham school yearbook, Aerie, using Josten's Yeartech. Students will learn basic techniques for journalism, photography, advertising, marketing, desktop publishing, and layout. Students electing this course are expected to spend time after school, weekends, and during vacations in order to meet deadlines for publication. A Yearbook Independent Study or DUO may be designed with approval from Maureen Deppman, Independent Study Supervisor and Kevin Masse, Yearbook Advisor. **THIS IS AN ELECTIVE CREDIT, NOT AN ENGLISH CREDIT.**

Prerequisite for continuation to semester 2: Yearbook advisor recommendation and "B" average or better from the first semester

57104 INDUSTRIAL TECHNOLOGY 1 - 4 (Grades 9 – 12)

.50 Credit

This course may include introduction to sheet metal, welding, and machining metal. Students will learn sheet metal layout and fabrication skills, as well as welding, brazing, soldering, bending and forming of mild steel. They will also be introduced to the art of machining metal. Students will complete a series of predetermined projects, allowing them to apply the skills learned in each lesson. Goals of this course include learning valuable hands-on life skills, and exploring possible careers in industry.

Advanced students will improve, and build on, skills from prior classes through self-directed project-based learning, and may also be introduced to various power systems, including: small internal combustion engines, hydraulics, pneumatics, wind power, hydropower, and electrical power, as well as Computer Numeric Control, Computer Assisted Manufacturing, and Computer Assisted Drafting, as time and resources allow. Students will utilize skills and knowledge acquired in this course, to design, plan, and construct a culminating project.

PHOTOGRAPHY

57201 DIGITAL PHOTOGRAPHY 1 & 2 (Grades 9 – 12)

.50 Credit

This course will explore roles of photography in society. A version of Adobe PhotoShop® will be taught at a beginner's level. However, students are encouraged to explore advanced features of the software. Students will complete weekly assignments involving digital manipulation. A comprehensive photo report will be required of each student. Students will use digital photography, image enhancement, and presentation software to produce and present their final photo report to the class.

Advanced students will experiment with the advanced features of the software, and apply creative adjustments to pictures they take. Students will complete weekly assignments involving digital manipulation. A self-directed comprehensive photo portfolio, complete with journal records, will be required of each student. Student will use digital photography, image enhancement, and presentation software to produce and present their final photo report to the class.

Students should supply their own digital camera, as few are available for use, and only during school hours.

TECHNICAL DRAWING

56101 TECHNICAL DRAWING I, II, & III (Grades 9 – 12)

.50 Credit

Technical Drawing may be taken three different semesters for elective credit. There is no prerequisite.

Technical Drawing I is an introduction to the career areas of drafting and design. Drawings completed in this course include: lettering, three view drawings, geometric constructions, isometric and oblique drawings, dimensioning, sectional drawings, auxiliary drawings, and threads. In this course, students will also be required to complete some drawings using CAD (Computer Aided Drafting).

Technical Drawing II is a continuation of Technical Drawing I. More advanced drawings are covered in this course. They include three view drawings with dimensions, sectional drawings, auxiliary drawings, threads, pattern layout and development, perspective drawings, and contour drawings. Students will use the CAD software for some of the drawings.

Technical Drawing III is a continuation of Technical Drawing II. Areas covered in this course include assembly drawings and models. Students draw top and front sectional views of the individual parts of a simple machine. They then complete the assembly drawing of the machine. Drawings are completed with dimensions and are labeled correctly. During the second nine weeks, students develop drawings and a model of something they have a specific interest in. Examples of past projects include: golf courses; ski area designs; and other sports complex. Students will use the CAD software for some of their drawings.

56201 APPLIED ARCHITECTURE 1 (Grades 9 – 12) (Fine Arts Credit)

.50 Credit

Applied Architecture 1 is the first of two project-based courses that were designed to help students develop an understanding of Architecture through a hands-on approach. Students will participate in a number of different learning experiences to explore the field of Architecture. Topics to be covered include: the history of Architecture and the study of famous architects; basic geometric shapes; steps to design a house; structural designs; roller coasters; interior design; and tree houses. For most projects, students will complete a set of drawings including floor plans, elevations, and perspective drawings. Students will also learn the related vocabulary and create a model. There are no prerequisites for this course although a background in technical drawing would be helpful. This course counts as .50 Fine Art credit.

56203 APPLIED ARCHITECTURE 2 (Grades 9 – 12)
(Fine Arts Credit)

.50 Credit

Applied Architecture 2 is a continuation of the Applied Architecture 1 course. This course also uses a “hands-on” approach to study the field of Architecture. Topics to be covered in this course include: How buildings relate to the human body; Covered Bridges or Barns; Historical Buildings in Addison County; Landscape and contour drawings; Miniature Golf course designs. With each experience, students will learn the related vocabulary and work on a project. This course counts as .50 Fine Art credit.

Prerequisite: Applied Architecture 1

56205 ARCHITECTURAL DRAWING 1 – 4 Grades (10 – 12)

.50 Credit

Architectural Drawing 1 – 4 is a drafting course offered to advanced drafting students. Students may take this course multiple times for elective credit. Students will develop an appreciation of the professional work of an Architect through the study of the history and styles of Architecture. Students will develop plans for a house of their own design. The following types of drawings will be completed: floor plans, elevations, wall sections, framing plans, perspective drawings, and plot plans. Students will also build scale models of their houses. With each level of this course, students will further develop skills in design and model construction. Projects will be based on student interest and there will be higher expectations at each level.

Prerequisite: Technical Drawing level 1 or Applied Architecture

56104 CAD - MECHANICAL (Grades 9 – 12)

.50 Credit

This course provides an introduction to the **Key Creator 6.5.2 mechanical software**. Using the software, students will create 2D and 3D drawings of objects. Students are able to create solids, drill holes or cut chamfers, and then spin the object to look at it from all sides. Students will use a Project Book to learn the program. If students complete the book before the end of the semester, they are welcome to use this program to work on independent projects. It is my hope that students will learn a skill that they can use in other classes that require design work.

Prerequisite: Technical Drawing level I

56114 FROM CONCEPT TO CREATION 1-4 (Grades 10 – 12)

.50 Credit

This course is designed to challenge students for creative thinking, concept design, research and development, engineering, and critical thinking for the 21st century. Students will identify a need, and then design a product to be developed or improved upon. Students will work individually or in a group to create a solution to the problem. The curriculum will be individualized to the student’s product. Students will be given the opportunity to have more control over their own learning.

Prerequisite: Technical Drawing 1, CAD, or Industrial Technology with emphasis on CAD/CAM or permission from instructor

56401 CAD - ARCHITECTURAL (Grades 10 – 12)

.50 Credit

This course provides an introduction to the **DataCAD, Envisioneer, and Chief Architect** CAD software programs. Using this software, the student will create 3D drawings of buildings and cities. With the use of templates which are included in the software, furniture, plumbing, electric, and landscaping can be easily added to the drawings. Students will be able to walk through their house as they design it. Students will follow several workbooks with required drawings to become familiar with the software. Drawings will include floorplans, elevations, inside and outside perspective drawings, framing plans and plot plans. **This course is taken as an independent study but will meet on a regular basis.**

Prerequisite: Technical Drawing level I

WOODWORKING

57101 WOODWORKING 1 – 5 (Grades 9 – 12)

.50 Credit

The Woodworking Program at Mt. Abraham is set up to accommodate students throughout their senior high career. The students will earn one-half credit per semester completed. These credits will satisfy the elective credits needed toward graduation. The student will learn skills necessary to operate safely in a shop environment. Each semester will be divided into three separate units. One unit will involve learning the rough carpentry skills necessary to enter the carpentry field. A second unit will introduce the students to small business and mass production. A third unit will involve student building a piece of furniture.

With each level of this course, students will further develop skills in woodworking. Projects will be based on student interest and there will be higher expectations at each level.

57301 ESSENTIALS OF FIRE FIGHTING CLASS Fall Semester .50 Credit

57302 ESSENTIALS OF FIRE FIGHTING CLASS Spring Semester .50 Credit

57303 ESSENTIALS OF FIRE FIGHTING ELECTIVE Fall Semester .50 Credit

57304 ESSENTIALS OF FIRE FIGHTING ELECTIVE Spring Semester .50 Credit

57305 ESSENTIALS OF FIRE FIGHTING MATH Fall Semester .50 Credit

57306 ESSENTIALS OF FIRE FIGHTING MATH Spring Semester .50 Credit

57307 ESSENTIALS OF FIRE FIGHTING ENGLISH Fall Semester .50 Credit

57308 ESSENTIALS OF FIRE FIGHTING ENGLISH Spring Semester .50 Credit

(Grades 11 – 12)

This is a four block full year commitment for students who want to work towards their Firefighter 1 certification. During two blocks students will be introduced to the many skills that are required by volunteer and career fire fighters. During this course students will learn about fire behavior, fire attack, hose streams, the science of fire, search and rescue, and much more. Not only will students learn in the classroom, they will have the opportunity to practice these skills in practical training situations, and learn from experts in this field. One block will be an English class where students will work with their fire fighting manual and related readings, read books about fires and fire fighting, and practice writing related to the content area. The last block will be a math class which will include content around fire fighting and other emergency services as well as other math topics.

Upon successful completion of this course, students will earn one Math credit, one English credit, two elective credits and a Firefighter One certification. Students will be eligible to take the written and practical exam, but they must be 18 to complete the live fire training.

DRIVER EDUCATION

59201 DRIVER EDUCATION	Semester 1 (Grades 10 – 12)	.50 Credit
59202 DRIVER EDUCATION	Semester 2 (Grades 10 – 12)	.50 Credit

Each student will participate in a state certified program that meets the current Graduated License law standards. During enrollment each student will need to complete a minimum of 30 clock hours of classroom instruction, six clock hours of documented behind the wheel instruction and six clock hours of documented observation in a dual controlled vehicle. They are also required to complete 20 clock hours of documented driving with their parents or alternate licensed adult as explained in the Graduated License law using the Partnership: Student, Parent, Teacher book. The majority of the driving sessions will be completed within the five-town area, specifically in Bristol. There will also be sessions to and from and within the Middlebury and Burlington areas. The culminating requirement for every student is to complete an individual final driving exam.

Prerequisite: Driver Education is intended for regularly enrolled students who are at least 15 years of age and who hold a valid learner's permit on the first day of class. Students will need to have a driving lab in their schedule. Eligibility will follow the Mt. Abraham Driver's Education enrollment procedure. Students with a valid learner's permit at the time of course selection will be eligible for 1st semester enrollment. The remaining available spots for enrollment will be based on a student's grade and birth date.

SCHEDULING PROCESS FOR DRIVER'S EDUCATION

Goals:

- Enable students to become safe and efficient drivers based on Vermont Graduated Driving Law, Vermont Motor Vehicle Laws and State Standards.
- Support the students that are making healthy choices.

Scheduling process:

- Enable every student the opportunity to take drivers education at Mt. Abraham.
- Students with Learners Permits at time of registration will be given the opportunity for first semester enrollment.
- 12th grade gets first priority
- 11th grade then follows (students will be placed by birth date)
- 10th grade is last to schedule (students will be placed by birth date)
- No 9th grade students will be enrolled
- Follow Act 51 process
- Follow course selection process

Students who breach contract or fail course:

- Students may be enrolled in class the next semester but will be put at the end of the waiting list. They may not bump other students out of enrollment in class
- If the student is not enrolled the next semester, they will be enrolled the following semester using the original scheduling process.

Students who do not complete all the requirements in one semester:

- At the end of the semester, if a student has completed all of the Grading Policy requirements, except successful completion of the final road test, the School will not issue the Driver Education Completion "yellow" Card until the student passes a final road test successfully.
- It is the student's responsibility to complete additional driving with Parent/Guardian, to improve their knowledge and skills based on the Driving Lab Teachers final road test evaluation. The driving needs to be recorded on a State Driving Log. After completing the additional practice with the Parent/Guardian, the student will make arrangements with the Driving Lab Teacher for a review session/final road test. This will take place during the next semester. The Mount Abraham final road test is similar to the State of Vermont Department of Motor Vehicles Driving Exam, which the student will need to pass to earn a Junior Operators License.

ENGLISH

Four credits (eight semesters) of high school English are required for graduation. A minimum of one course each semester is recommended.

The department seeks to increase equitable access for all students to the full spectrum of educational programs and provide programs that will reflect the needs of each student.

The English curriculum stresses skills in reading, understanding and evaluating literature and speaking, listening, and writing. The department is prepared to offer courses that will enable students to acquire aesthetic, vocational, academic and technological experiences that will best meet the challenges of an ever-changing world.

To enhance and further these goals and beliefs, the department offers a variety of complementary courses in a variety of contexts. The core of the traditional grade level courses is enhanced by a range of multi-aged, non-tracked course offerings in the upper grades.

The English teachers and school counselors will work with students to develop a sequence of courses appropriate to individual students based on the needs and interests of each student. These guidelines and the personal advisement process are intended to help each student select a course sequence most appropriate to each individual. They are intended to ensure that all students receive a common core of essential skills and concepts.

Students are reminded that:

- a. Only one writing course per semester is allowed.
- b. Students taking Creative Writing and Composition must want to write.
- c. Students need to map out their program with counselors, teachers, and parents to make choices that will be in their best academic interests.
- d. Students eligible for special CT services have their schedule reviewed by their caseworker and have their IEP on file in guidance.

To ensure that students develop a common core of skills and knowledge in English, all ninth graders must select and pass Grade 9 English before going on to English 10. All tenth graders must select and pass Grade 10 English. Other elective courses may be selected with permission of instructors and counselor.

25101 ENGLISH 9 A .50 Credit
25102 ENGLISH 9 B .50 Credit

English 9 is a complementary study of literature, writing, grammar, and reading. Writing is a major component of this course, and includes narrative, essay, research, and journaling. Literature is chosen to represent a broad variety of themes and literary forms (plays, poems, novels, short stories). Students work in groups and individually on projects and presentations, which enhance each unit. Reading for English 9 is frequently linked to Global Studies and occasionally to Earth Science.

25201 ENGLISH 10 A .50 Credit
25202 ENGLISH 10 B .50 Credit

In this class we look at story in its various forms and explore its role and impact through time and cultures. Using both text analysis and discussion we examine how stories reflect experiences, patterns, and meanings in our own lives. Through these explorations we begin to discover and give voice to our own stories. We also study and develop the power of effective communication in speech and writing. The ability to communicate empowers us to gain and share information about self, others, and the world. The reading list for this course includes classic and contemporary literature, both from the British and American traditions. Vocabulary study, four-way thinking and writing skills are emphasized.

Eleventh and twelfth grade students will choose their English courses from the following courses, keeping in mind that four credits of English are required after grade eight for graduation. These are one-semester courses unless otherwise

noted. The English teachers and school counselors will work with students to develop sequences of courses appropriate to individual students based on needs and the interests of each student. This process is intended to ensure that all students receive a common core of essential skills and concepts.

The following courses are grouped by the predominant characteristic of the courses in that group. Most courses also contain parts of the broader English curriculum, which stresses skills in reading, understanding, and evaluating literature and speaking, listening, and writing. Also, the courses are designed to enable students to acquire aesthetic, vocational, academic and technological experiences that will best meet the challenge of an ever-changing world.

GROUP 1: WRITING

25301 COMPOSITION 1 (Grades 10 – 12) .50 Credit

This course is designed to improve logical thinking and organized writing skills and to acquaint the students with various essay forms. Extensive practice in planning, writing, revising, and editing will assist students in all high school courses. Each student will write at least six finished essays. Advanced grammatical concepts will be stressed. Priority will be given to upper classmen for placement into classes.

25302 COMPOSITION 2 – ADVANCED COMPOSITION (Grades 10 – 12) .50 Credit

This course continues and expands the concepts of expository writing begun in Composition 1. Techniques for refining and extending formal essays and a more in-depth study of grammatical forms will be emphasized. Reading of varied, sophisticated prose models is expected.

Prerequisite: Composition 1

25303 CREATIVE WRITING (Grades 10 – 12) .50 Credit

Creative Writing is a one-semester workshop designed to develop the expressive writing abilities of students. The course will focus on exposing students to many forms of excellent literature, both contemporary and classic, and derived from many cultural traditions, as models for their own work. The focus is on poetry and short fiction. All genres will be read during the entire semester, apropos to any theme under discussion. The Writing Process is the format for this class. Priority will be given to 11th and 12th grade students.

25304 JOURNALISM (Grades 10 – 12) .50 Credit

In this English course, students will learn to be articulate, informed, and responsible journalists. They will report on news that affects our school, as well as the broader local, state, national, and global communities in which they live. They will learn to define and adhere to standards of accuracy, style, and quality within the constraints of a deadline. Each student will contribute 3 – 4 articles per quarter, LEARN HOW TO USE publishing software, and work as a team to produce the school newspaper. The paper version of the newspaper will come out quarterly.

English credit will only be awarded the first time a student enrolls in this course. Students achieving a grade of 85% or higher and with permission from the instructor may re-enroll for elective credit.

Maximum enrollment for this course is 17 students.

GROUP 2: LITERATURE

25401 AMERICAN LITERATURE: THE 19TH CENTURY (Grades 11 – 12) .50 Credit

What makes American Literature American? During the 1800s this question was answered by a fantastic group of powerful writers, from Hawthorne to Dickinson, to Whitman, Melville and Crane. Ranging in style from gothic to transcendental to the early naturalism and realism that shaped 20th century fiction and poetry, the American literature of the 19th century is a rich banquet for readers. This elective is a great companion for any American history course at the junior and senior levels. Reading, writing and discussion are primary features of this course.

25402 AMERICAN LITERATURE: 20th CENTURY (Grades 11 – 12)

.50 Credit

American Literature of the 20th century has stimulated readers all around the globe with its innovative subjects, bold rhythms and far flung voices that reflect the scope of the American Dream. Its expansive, groundbreaking style, from naturalism to modernism, to realism, magic realism and surrealism, epitomizes the creative spirit of authors in the United States during a century when the USA made its mark on the world. The literature of this century perpetuates the pioneering spirit in all its forms: it exposes the dark underbelly of our diverse culture even as it sheds light on its highest virtues. This elective pairs up well with the history you study in 11th and 12th grade. Reading, writing and discussion are primary features of this course.

25306 SHAKESPEARE (Grades 10 – 12)

.50 Credit

Shakespeare is recognized by many as the greatest writer in the English language. Shakespeare's language may be difficult, but his plays have stood the test of time because the characters and themes are as relevant today as when they were first performed. This course will primarily approach his plays from the perspective of actors. Students will work as a small ensemble theater to produce scenes of Shakespeare's plays, paying particular attention to comparisons between different film versions of the same play or scene. No author, living or dead, has had as many works transformed into film as Shakespeare has. Students will have an opportunity to act nearly every day, progressing from staged readings to memorized scenes by the end of the semester. Additional opportunities to perform stage combat, film short scenes and/or create voice-overs for animated film versions will be offered.

25405 SHORT STORY (Grades 11 – 12)

.50 Credit

Short stories offer exciting glimpses into human nature and human experience. This course provides opportunities for students to read, discuss, and respond in writing to short stories from many cultures, including our regional culture. The themes and the literary structure of stories will be emphasized. Students will respond creatively to stories as well as have the opportunity to write a short story of their own.

25406 PHILOSOPHY: AN INTRODUCTION (Grades 11 – 12)

.50 Credit

This course is an introduction to the nature of philosophy through reading and discussion of various philosophical problems and comparisons of different philosophical viewpoints. We will explore Greek, Eastern and European Philosophies that have shaped our culture of today.

25403 WORLD LITERATURE (Grades 11 – 12)

.50 Credit

Though geography, forms of government, culture and social structure differ around the world, and time creates change and evolution in all these features, core human emotions and values are common across the globe. Great literature reveals these universal themes. This course will examine the struggle for positive qualities in life, as well as conflicts and triumphs faced by humans, through the reading of both classic and contemporary literature from Europe, Asia, the Middle East, and the Americas. Central to the course is the essential question: How would you live your life knowing how people in other cultures live theirs?

25408 MEDIA LITERACY (Grades 11 – 12)

.50 Credit

"At the heart of media literacy is the principle of inquiry. To be literate is to raise the right questions." Elizabeth Thoman

In this class you will practice asking questions. Every day we take in hundreds to thousands of verbal and visual symbols through television, radio, computers, newspapers, magazines and advertising. This class provides a working knowledge of the media (its economic, political, organizational, social and cultural factors) so you may challenge, choose and select, and be conscious about what is going on around you. The major goal for this course is to learn how to be a more responsible viewer of media and to engage in critical thinking that promotes active citizenship rather than complacent consumerism.

25421 <u>ADVANCED PLACEMENT ENGLISH A</u> (Grade 12*)	.50 Credit
25422 <u>ADVANCED PLACEMENT ENGLISH B</u> (Grade 12*)	.50 Credit

AP English Literature is for the prepared, not the elite, for students who are willing to work hard and challenge themselves. You will be asked to read and write more, to analyze writing, to synthesize your own ideas, and to evaluate those of others. These skills, which are called for in most English courses, will be exercised at a higher level of complexity in AP English. Remember that AP English is an introductory college course, so it won't be easy, but neither will it be impossibly difficult. Because your ability to read, write, and analyze is so important to your future, meeting the demands of an AP English course is an investment of effort that will be amply repaid. The reading will be primarily grounded in American and British literature. Preparation for the Advanced Placement exam will be ongoing throughout the year.

AP ENGLISH – Requirements for Admission:

Recommendation from your eleventh grade literature teacher.
Successful completion of summer work.

**Exceptional underclassman will be enrolled with teacher's permission*

25411 <u>AMERICAN STUDIES</u> (Grade 11)	.50 Credit
25412 <u>AMERICAN STUDIES</u> (Grade 11)	.50 Credit

This course is an interdisciplinary study of twentieth century history, literature and culture. The course utilizes a variety of educational methods, including open classroom, collaborative groups and traditional approaches, to present an integrated view of the American experience in the twentieth century. Students read novels, plays, poems and narrative accounts of each time period in the century, use primary sources for historic study, listen to music and look at examples in the visual arts from each era. **Students are expected to take on much responsibility for their learning. Students will be expected to read and write extensively in both English and History.** A project is required for each thematic unit. Students are required to write a formal research paper on a topic of their choice within the scheme of the course. The history and literature for the course begin around 1900. The course examines the century both past and present, emphasizing recurrent trends and themes within its span. Current history is examined through the use of periodicals and discussion. Students receive one-half credit per semester in both Social Studies and English for successful completion of the course. Readings listed represent a possible range to be selected at the instructor's discretion according to student needs and preferences; additions or changes to the reading list are ongoing.

25415 <u>PAGE TO SCREEN</u> (Grades 10 – 12)	.50 Credit
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Page to Screen offers students the opportunity to read literature independently and at a quick pace so it can be discussed in detail in seminar format, in preparation for viewing a film version. After viewing the film, discussion will focus on interpretations that are made when transforming from text to film. **Students will be expected to read extensively for this course.** "Seminar format" suggests that class discussion will be the major way that students are graded, but complementary projects and short writing assignments will also be assigned.

25409 <u>TURN THE PAGE</u> (Grades 10 –12)	.50 Credit
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Are you a reader (at any level) who would like to read better? Do you want to read faster? Do you want to remember what you just read? Do you want to stay awake when you read? Does the amount and difficulty of reading expected in the upper grades and in college worry you?

This course might be just what you have been looking for. Through strategies proven to improve reading skills we will help you become a stronger reader and increase your enjoyment of reading. Examples of strategies include making connections, exploring inferences, and asking questions. You will be able to choose what you read from a selection of books. You will read a minimum of four books. Class time will be used for discussing readings, using new skills, and talking about the reading process. You will use a journal to collect your responses to the readings. This course is about reading, so you will be expected to do the reading.

Prerequisite: Instructor permission required. Desire to read and to improve your reading skills

FAMILY & CONSUMER SCIENCE

The following courses offer you a chance to learn life skills. They will help you become more self-sufficient and can help you choose a career. Some of the classes teach many details about one topic. Other classes teach details about many topics. You decide which courses best fit your needs.

Family and Consumer Sciences training is useful in many careers. Restaurant work, nutritional meal and menu planning for schools and hospitals, work in food packing factories and bakeries are some other areas of employment in the foods industry. State government offers work with the extension service and human services that require Family and Consumer Sciences training. Some of the courses offered will help develop skills used in small businesses. The clothing industry employs those people with Family and Consumer Sciences training in design, manufacture, and selling of clothing.

58104 BASIC CONCEPTS OF FOOD AND NUTRITION I (Grades 9 – 12) .50 Credit

Over the last fifty years, a family's experience with foods has changed dramatically. A half-century ago, stay-at-home moms traditionally spent hours cooking and cleaning up for meals. The dinner hour was the focal point for families to come together to discuss the day's events. Today, in many families both parents work or children live in one parent households. Lifestyles are fast-paced. Families eat instant foods from cans, boxes, or the freezer, often in shifts. More importantly, the obesity epidemic in America is rising. In Basic Concepts of Food and Nutrition I, students learn the fundamental concepts of food and nutrition, cooking equipment and techniques, as well as the art of home style cooking – how to prepare healthy dishes quickly and easily. This class offers students an opportunity to learn and improve the skills involved with food preparation. Lab work is incorporated into the lesson, so students have first hand experiences in food preparation.

Prerequisite: This class is a prerequisite for both Basic Concepts of Food and Nutrition II, and Foods of the USA

58105 BASIC CONCEPTS OF FOOD AND NUTRITION II (Grades 9 – 12) .50 Credit

Basic Concepts of Food and Nutrition II, is a continuation of Basic Concepts of Food and Nutrition I. Students will become more involved in both the science and creativity of preparing nutritious meals and snacks. Students will learn and prepare foods that include fruits, vegetables, salads, dairy, protein foods, and desserts. Students will also explore careers in the food industry. This class offers students an opportunity to learn and improve the skills involved with food preparation. Lab work is incorporated into the lesson, so students have first-hand experiences in food preparation.

Prerequisite: Students should be scheduled for this class after taking Basic Concepts of Food and Nutrition I

58101 FOODS OF THE USA (Grades 10 – 12) .50 Credit

Food provides more than nutrients. It also symbolizes cultural values and is central to many ethnic and other social traditions. It strengthens bonds between people who share food. Each ethnic region has its own special food. Foods of the USA offer students a chance to better understand where some of our own eating choices have come from and to appreciate other cultures. Students sample and prepare foods from different sections of our country. Students are encouraged to analyze their own taste in food and to learn to prepare and appreciate unfamiliar food. Each region is explored using a variety of research skills. A key component includes map reading and state identification.

Prerequisite: Students should be scheduled for this class after taking Basic Concepts of Food and Nutrition I

58106 EXPERIENCES IN CHILD CARE (Grades 9 – 12) .50 Credit

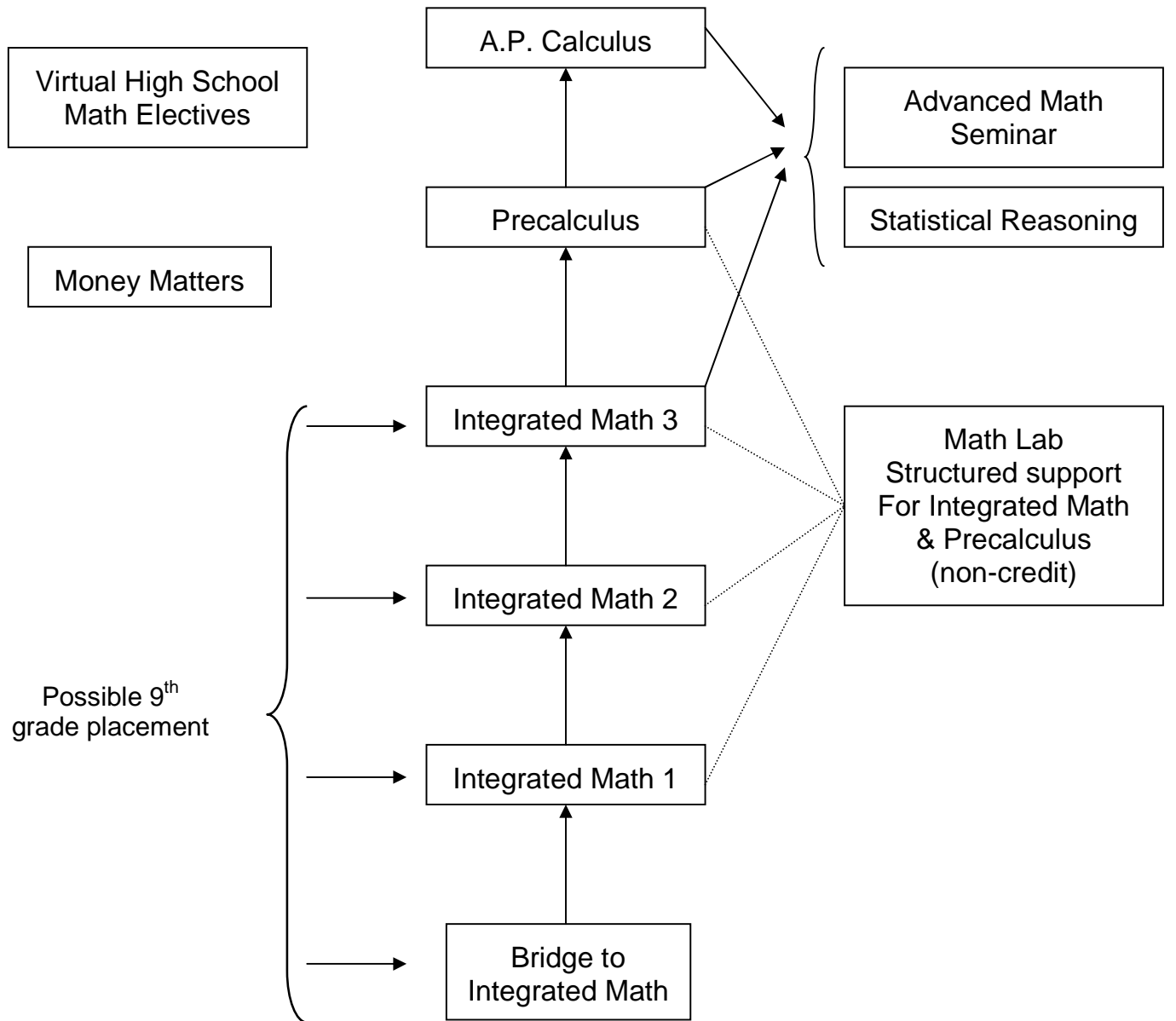
Whether thinking about being a parent, working in a child related field, or just spending time with children occasionally, this course will help students understand Child Development and Parenting Skills. Students will learn how children change as they grow physically, emotionally, socially, and intellectually as well as learn parenting techniques. Topics will include growth and development, health and safety, and play activities for each developmental level. This course will offer students an opportunity to actually work with children through observations and participation in play group (day care) programs.

58110 INDEPENDENT LIVING (Grades 11 – 12)

.50 Credit

Where are you going in your life? Are you headed to college or into the working world? Do you know what responsibilities are involved in living on your own? This course will help you prepare for the real world by learning how to find a job, rent an apartment, cook on a shoe-string budget, and co-exist with roommates.

Major Pathways through Mt. Abe Math Courses



MATHEMATICS

Your math skills are very important. More and more jobs call for some knowledge of algebra and geometry as well as strong problem solving skills. One recent study of American workers found that the "strongest (academic) predictor of earnings nine years after graduation from high school is the number of mathematics courses taken."

All Mt. Abe students are required to earn three (3) credits of mathematics in order to graduate. We encourage parents and students to seek challenge in their math courses. The following flowchart shows the course sequences that students can take through our math program. Integrated Math is the core of our high school mathematics program. We have designed our math curriculum around national and state math standards and have found that students who have successfully completed Integrated Math 3 are at or near these standards. Our goal is to continue to increase the number of students who achieve this level of performance. We invite everyone involved in making decisions about courses to aim high, recognizing that many students will need Math Lab or other support structures in order to realize their potential.

In order to help as many students as possible move on to a higher level of math, we require Math Lab enrollment for students who have passed their previous Integrated Math course with a grade less than C-. This allows students to progress into the next semester of Integrated Math with tutoring and homework support. Many students also enroll voluntarily. This program is an essential part of our program, helping students move ahead in their conceptual understanding of math while building up their basic math and study skills.

Students who are not ready for Integrated Math in 9th grade, should take Bridge to Integrated Math. This course will be their best preparation for success in the Integrated Math courses they will take over the years that follow.

Beyond Integrated Math we offer Precalculus, Calculus, Money Matters, Statistical Reasoning and Advanced Math Seminar. Please read carefully about the choices available and discuss your options for next year with your current math teacher.

30103 <u>BRIDGE TO INTEGRATED MATH</u> (Grade 9)	.50 Credit
30104 <u>BRIDGE TO INTEGRATED MATH</u> (Grade 9)	.50 Credit

Bridge to Integrated Math is designed to prepare students for the Integrated Math sequence. Students will explore topics in algebra, geometry, statistics, probability, logical reasoning, and mathematical computation. Topics of study include: geometric constructions, Mandalas, order of operations, problem solving, mathematical communication, algebra, operations with positive and negative integers, probability, angles, triangles, Pythagorean theorem, parallel and perpendicular lines, circles, polygons, area, perimeter, slope, surface area, volumes, ratio and proportions.

30105 <u>INTEGRATED MATH 1 A</u> (Grades 9 – 10)	.50 Credit
30106 <u>INTEGRATED MATH 1 B</u> (Grades 9 – 10)	.50 Credit

Integrated Math 1 is a first level course in a core curriculum of high school mathematics. Students will explore topics in algebra, geometry, trigonometry, statistics, and mathematical computation and problem solving. Topics of study in this course include: exploring and communicating mathematics; simplifying expressions, solving equations and systems of equations; problem solving; coordinates and functions; two dimensional and three dimensional geometry; proportional thinking and similarity; basic trigonometry; properties of linear functions; and representing data and finding measures of central tendency.

To proceed to the next higher level/semester of any Integrated Math course or Precalculus, passing the previous semester of the math sequence is required. For students passing, but with a grade less than C-, concurrent enrollment in Math Lab is required.

30201	<u>INTEGRATED MATH 2 A</u>	(Grades 9 – 12)	.50 Credit
30202	<u>INTEGRATED MATH 2 B</u>	(Grades 9 – 12)	.50 Credit

Integrated Math II is a second level course in a core curriculum of high school mathematics. Students will explore additional topics in algebra, geometry, probability, and mathematical computation. Topics of study in this course include: transformational geometry; models of change; linear systems; quadratic functions and graphs; coordinate geometry and quadrilaterals; counting strategies; probability; triangles; circles; special angle relationships.

To proceed to the next higher level/semester of any Integrated Math course or Precalculus, passing the previous semester of the math sequence is required. For students passing, but with a grade less than C-, concurrent enrollment in Math Lab is required.

30301	<u>INTEGRATED MATH 3 A</u>	(Grades 9 – 12)	.50 Credit
30302	<u>INTEGRATED MATH 3 B</u>	(Grades 9 – 12)	.50 Credit

Integrated Math III is a third level course in a core curriculum of high school mathematics. Students will explore topics in algebra, geometry, statistics and probability, logical reasoning, and mathematical computation. Topics of study in this course include: exploring and applying functions; polynomials, factoring and equation solving; geometric proofs involving parallel and perpendicular lines, quadrilaterals and other geometric figures; modeling problem situations; linear programming; sequences and series; solving cubic and rational equations; normal distribution, standard deviation and modeling data; transformations of graphs.

To proceed to the next higher level/semester of any Integrated Math course or Precalculus, passing the previous semester of the math sequence is required. For students passing, but with a grade less than C-, concurrent enrollment in Math Lab is required.

30101	<u>MONEY MATTERS A</u>	(Grades 11— 12)	.50 Credit
30102	<u>MONEY MATTERS B</u>	(Grades 11— 12)	.50 Credit

This course, for juniors and seniors, focuses on the math that helps us manage our personal finances and the economic context in which financial decisions are made. Instruction will link mathematical procedures to broader economic concepts in addition to maintaining and advancing math skills. The complexity of the material will be based on student ability. Activities will include student directed study. This course is appropriate for students who have successfully completed Integrated Math I through AP Calculus.

30407	<u>STATISTICAL REASONING - (S1)</u>	(Grade 12)	.50 Credit
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How can you use statistics to answer your questions about the world? How can statistics inform your reasoning and the ideas of those around you? In this course, students will learn skills essential for understanding and interpreting statistics. As a class we will interpret and critique statistics in the media and explore the major concepts and tools for gathering, analyzing and interpreting data. Students will also engage in self directed research. This course is a great introduction to statistics for students pursuing further education in psychology, business, education, or social sciences as well as math and science.

Prerequisite: Completion of Integrated Math 3

30406	<u>ADVANCED MATH SEMINAR - (S2)</u>	(Grade 12)	.50 Credit
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This course is designed to expand your mathematical perspective while keeping your math skills strong as you prepare for college. Advanced Math Seminar focuses on exploration and discussion of interesting and sometimes surprising mathematical ideas. Topics of study include game theory, number theory, logic, programming graphing calculators, computer modeling, number bases, and other similar advanced math topics. Time is built into the course for student directed study.

Prerequisite: Completion of Integrated Math 3

30305	<u>PRE-CALCULUS A</u> (Grades 10 – 12)	.50 Credit
30306	<u>PRE-CALCULUS B</u> (Grades 10 – 12)	.50 Credit

Pre-calculus blends the concepts and skills that must be mastered before enrollment in a college-level calculus course. The primary goal of this course is to expand and reinforce the ability to understand, manipulate, and apply mathematical concepts. Topics of study in this course include: functions and their graphs; polynomial and rational functions; exponential and logarithmic functions; trigonometric functions; analytic trigonometry; additional topics in trigonometry; linear systems; and topics in analytic geometry with conics.

To proceed to the next higher level/semester of any Integrated Math course or Precalculus, passing the previous semester of the math sequence is required. For students passing, but with a grade less than C-, concurrent enrollment in Math Lab is required.

30401	<u>AP CALCULUS A</u> (Grades 11 – 12)	.50 Credit
30402	<u>AP CALCULUS B</u> (Grades 11 – 12)	.50 Credit

This rigorous course is designed for seniors who want to continue their study of mathematics at an advanced level. Students considering a career in science, mathematics or engineering are encouraged to enroll in this course. Calculus focuses on limits and continuity as well as concepts and applications of derivatives and integrals. Students may receive college credit or advanced college placement for high scores on the AP exam given each May.

AP Calculus is intended for students who have a comfortable working knowledge of college preparatory mathematics, including algebra and trigonometry. In line with the calculus reform movement, conceptual understanding will be stressed throughout the course. The expectations are similar to those of a college-level course, therefore students are expected to devote at least as much time outside of class to the course as the time spent in class.

Prerequisite: Recommendation of the mathematics department and completion of Pre-calculus.

30001	<u>MATH LAB (S1)</u> (Grades 9 – 12)	No Credit
30002	<u>MATH LAB (S2)</u> (Grades 9 – 12)	No Credit

Math Lab provides support for any student who passed their previous semester of Integrated Math or Pre-calculus with a grade lower than C-. Other students are welcome to enroll in Math Lab for structured support on a space available basis. Students will receive support in the current level of Integrated Math or Pre-calculus. As much as possible, the instruction will be tailored to each student's individual needs. Upon completion of their math work students will use the remainder of their time as a structured academic study hall with teacher support available. Math Lab meets for 1/2 block and does not receive credit.

A student with a D+, D or D- in a semester of Integrated Math or Pre-calculus may only continue on to the next semester of Integrated Math or Pre-calculus if he/she concurrently enrolls in Math Lab for the entire semester.



FLOW CHART FOR SENIOR HIGH MUSIC

*All courses may be taken multiple times and are considered
Fine Art Credit*

Entry-level Courses

Advanced Courses

Piano —————> Piano Accompanist

Chorus: Major/Minor* —> A Cappella

Band: Major/Minor* —> Jazz Ensemble

Rock Band

Age of Jazz

Music Department Assistant: *may be taken as an independent
study or DUO credit*

***Chorus and Band should be taken as a Major.** However if a student has a half block class (i.e. driving lab) they may enroll as a Minor with permission of the instructor. The Minor should not be used in conjunction with a study hall or unassigned time.

Please check prerequisites for each course before signing up.

Courses offered in the regular school day are .5 credit hours. Jazz Ensemble and A Cappella classes meet before school and are .25 credit hours. Students need 1 Fine Art credit for graduation. **Art** and **Theater Arts** courses are also considered Fine Art credit.

MUSIC

The success of a school performing arts program is to a large extent dependent upon the competence of its individual members. The success of each individual in turn, is determined by three factors: maintaining a cooperative learning attitude, practicing to improve skills performance, and knowledge of fundamental music terms necessary to a particular performing group. Any student committed to these factors will be successful.

CHORAL MUSIC

12201	<u>PERFORMING GROUP CHORUS A</u>	(Grades 9 – 12)	.50 Credit
12202	<u>PERFORMING GROUP CHORUS B</u>	(Grades 9 – 12)	.50 Credit

Students will be exposed to a variety of genres in choral music literature including classical, spirituals, pop, show, folk, and contemporary selections. Through the learning of this repertoire, students will develop a basic understanding of the music language in order to describe and perform the music with the composer's intent. All students are expected to perform in all musical presentations. Vocal performance will be stressed; however, students will work to develop skills in music literacy, sight singing and historical background. Students in Chorus may audition for District and All State Music Festivals.

12203	<u>CHORUS A – MINOR</u>	(Grades 9 – 12)	.25 Credit
12204	<u>CHORUS B – MINOR</u>	(Grades 9 – 12)	.25 Credit

Chorus Minor is offered for those students who are wishing to fit chorus in, but only have one-half block to do so. These are typically students who have Drivers Education. Students are expected to learn all repertoires, and are required to perform in all musical presentations. Students must have director permission to take Chorus Minor. Chorus Minor may not be taken in conjunction with study hall/free block. See "Chorus A & B" for description of class.

12211	<u>A CAPPELLA A</u>	(Grades 9 – 12)	.25 Credit
12212	<u>A CAPPELLA B</u>	(Grades 9 – 12)	.25 Credit

Mount Abe's vocal ensemble Sweet Transition, is a co-ed auditioned group. Students will prepare a solo audition, and are expected to be able to attend all **before and after school rehearsals**, as well as participate in all music department events and concerts. Students must be in the Performing Chorus for at least one year, or have permission from the director. Students who are not able to fit chorus into their schedules by their senior year will not be accepted into the group.

Prerequisite: High School Chorus or permission from director

12249	<u>PIANO CLASS A</u>	(Grades 9 – 12)	.50 Credit
12250	<u>PIANO CLASS B</u>	(Grades 9 – 12)	.50 Credit

Students will learn the basic skills needed in order to read and play piano music. Students with previous knowledge will continue working to develop and maintaining musical skills. A variety of method and repertoire books will be used allowing students to work at their own level and pace. In conjunction with playing, students will also learn music theory and composition and are expected to complete daily homework assignments.

12251	<u>PIANO ACCOMPANIST</u>	(Grades 9 – 12)	.50 Credit
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Students must be proficient in reading music and have good command of the piano. Students will accompany the chorus in classroom and performance situations. Students must have approval of music director.

INSTRUMENTAL MUSIC

BAND (Grades 9 – 12)

High School Concert Band is actually a year long course that explores the different styles and compositions of concert band literature. There is school and community related performances that showcase the achievements of the class. All

members of the concert band are required to attend all of these school and community events. In addition to public performances the ensemble participates in competitions every other year. Not only is the Concert Band a great place to learn and appreciate music but also it's a great place to make friends.

Success in this course of study will be determined by how much a student is willing to put into learning to play an instrument better. Factors that determine success include facility, intonation, tempo, interpretation, technique, tone, dynamics, rhythmic accuracy, and pitch accuracy. The proficiency of these factors will be determined through written examinations and applied performances. Participation in this ensemble may lead to opportunities in the Green Mountain District Music Festival and the Vermont All State Music Festival.

12241 HIGH SCHOOL BAND A – MAJOR (Grades 9 – 12) .50 Credit
12242 HIGH SCHOOL BAND B – MAJOR (Grades 9 – 12) .50 Credit

Want to experience the action packed world of concert band? How about making some great friends and taking fun trips? Then band is where you want to be! Come join the fun!

Regular 80 minute class periods

Prerequisite: Two years of middle school band or permission from instructor

12245 HIGH SCHOOL BAND A – MINOR (Grades 9 – 12) .25 Credit
12246 HIGH SCHOOL BAND B – MINOR (Grades 9 – 12) .25 Credit

40 Minute class periods

Prerequisite: Permission from instructor

12243 JAZZ ENSEMBLE A (Grades 9 – 12) .25 Credit
12244 JAZZ ENSEMBLE B (Grades 9 – 12) .25 Credit

40 Minute class periods

Have you wanted to play some great music and take fun trips? The members of the jazz ensemble have the opportunity to play a variety of different jazz styles and attend some great festivals. There are limited positions so an audition process will be used to select players. You must be proficient on your instrument and able to read music. This class meets before school.

Prerequisite: High school band or permission from instructor

12141 THE AGE OF JAZZ (Grades 9 – 12) .50 Credit

Did you know that jazz is the only musical art form that was developed entirely in the United States? Have you wondered how jazz started and why it is what it is today? This class will look at the journey jazz has taken and the great players who helped to shape it. Knowing how to read music or play an instrument is not required to take this class.

12143 ROCK BAND! A (Grades 9 – 12) .50 Credit
12144 ROCK BAND! B (Grades 9 – 12) .50 Credit

Have you ever wondered what it might be like to play on stage in front of a crowd? Have you ever wanted to play "Old McDonald" in your own way? In Rock Band class you'll get an opportunity to work with others to perform covers of songs as well as original works. Find out how a band works together and how to write down your songs. If you're curious come and try it out!

Class limit: 10

MUSIC DEPARTMENT LEADERSHIP DEVELOPMENT (Grades 9 – 12)

.50 Credit

May be taken as an independent study

These students will help keep the music department running smoothly by providing assistance to both the vocal and instrumental directors. They will have the opportunity to learn administrative procedures and impact the course of the music department. Students will plan, organize, and execute Music Department events.

PERSONALIZED LEARNING

INDEPENDENT LEARNING OPPORTUNITY (ILO) (Grades 8 – 12)

.50 Credit

An ILO provides the opportunity to meet graduation requirements in science, social studies and English in a student-centered learning environment. Project-based learning and a variety of other learning modalities are used to meet content and skill standards. Simply put, an ILO is one block of a Pathways Program. (see Pathways for more information). A student that is interested in an ILO will meet with the Personalized Learning Department to assess independent learning skills.

- Available to students in grades 8-12
- Student earns core credit towards graduation requirements
- Flexible start and end points (work not necessarily completed within the semester)
- Student develops own deadlines with advisor
- Formal and public exhibition of work
- Student products created with advisor
- Student creates annotated bibliography
- Student and advisor determine essential questions
- Course can be used to recover credits
- Regular advising

60401 PATHWAYS ELECTIVE (Fall) (Grades 10 – 12, 9th Grade with permission)

.50 Credit

60402 PATHWAYS ELECTIVE (Spring) (Grades 10 – 12, 9th Grade with permission)

.50 Credit

What are you going to do after Mt. Abe? After graduation where will you go? Come join a learning community that helps you find the answers. Independently, you can research, explore, and engage your career and college interests. In Pathways Elective you will earn and practice 21st century skills for the workplace. You can choose to take skill seminars on topics like: buy/lease a car, college essays, making a budget, interview skills, and more.

Using one of Pathways Elective's bank of laptops you can work on:

- Academic and career development
- College search and application process
- Making community connections through shadowing and internships
- Visits to colleges, businesses, and professional offices
- Building an electronic portfolio; portfolios document your successes and help you prepare for future opportunities
- Building and implementing an action plan for post graduation

In Pathways Elective you can enjoy the privilege of having your own laptop so you can pursue your future anytime, anywhere!

*21st Century skills: decision making, problem-solving, risk-taking, communication, financial literacy, collaboration, innovation and creativity.

70000 (SERIES) INDEPENDENT STUDY COURSES (Grades 9 – 12) .50 Credit

Independent study courses may not be used to fulfill graduation course requirements. For example, a student must take 1.0 credits of art to meet the graduation requirements. The same is true for the graduation requirements in social studies, mathematics, English, physical education and human development.

- Available to students grades 9-12
- One half credit for one semester of work
- Completion of 45 – 60 hours of work
- Pass/fail course
- Independent Study contract must be completed and approved before work begins
- 3 Required check-ins with advisor at Progress Report and End of Quarter
- Required writing prompts (6)
- Oral presentation with visuals
- Students may elect one independent study per semester
- Also available in the summer if arrangements made the previous spring

74021 DUO (DO UNTO OTHERS...) (Grades 9 – 12) .25 Credit

- Available to students grades 9-12
- One quarter credit for a semester of work
- Completion of 25 – 30 hours of work
- Teacher's assistant in the classroom
- Pass/fail course
- DUO contract must be completed and approved before work begins
- 3 Required check-ins with advisor at Progress Report and End of Quarter
- Required writing prompts (4)
- Students may elect one DUO per semester

76001 SUMMER COMMUNITY COLLEGE OF VERMONT (CCV) (Grade 12) .50 Credit

- Dual-enrollment opportunity for students entering grade 12
- Student must complete an application with the Personalized Learning Department
- Student must successfully pass the Accuplacer Exam administered by CCV prior to enrolling in a course
- Ten students per academic year selected to attend on space available basis
- Student may attend any CCV site or elect an on-line course
- Student receives a letter grade from CCV
- Students who complete a contract prior to the course start receive credit with MAUHS
- Credit earned for CCV courses may be used towards core graduation requirements
- Student elects credit to be pass/fail or letter grade prior to course start
- Student receives a voucher to pay for a 3 credit course
- Student is responsible for payment of books, supplies and other fees
- Student receives transferable college credit for work

76021 MIDDLEBURY COLLEGE COURSE (Grade 12) .50 Credit

- Dual-enrollment opportunity for grade 12 students
- Student must complete an application with the Personalized Learning Department
- Five students per semester selected to attend on space available basis
- Student receives a letter grade from Middlebury College
- Students who complete a contract prior to the course start receive credit with MAUHS
- Credit earned for Middlebury courses may be used towards core graduation requirements
- Student elects credit to be pass/fail or letter grade prior to course start
- Student does not pay a fee for the course
- Student is responsible for payment of books, supplies and other fees

76030 COMMUNITY COLLEGE OF VERMONT (CCV) (Grades 11 – 12)
Introduction to College Studies

.50 Credit

Introduction to College Studies is a free course available each semester through CCV. This course provides an introduction to the college experience and the opportunity to explore the skills and expectations necessary at the college level. Students work on goal setting, time management, stress management, study skills, communications skills, and learning to seek and use informational resources. This course is also an opportunity to gain valuable information about career exploration, selecting and applying to colleges, financial aid and personal financial management. It is generally offered in a 13-week session with classes meeting once a week for two hours. Successful completion of this course makes Vermont students eligible to apply for a voucher for one free class at any of these colleges (pending available funding): CCV, Castleton, Johnson, Lyndon, Vermont Tech, UVM, Burlington College, Champlain College, College of St. Joseph, Green Mountain College, New England Culinary Institute and Southern Vermont College.

76031 COMMUNITY COLLEGE OF VERMONT (CCV) (Grade 12)

.50 Credit

- Dual-enrollment opportunity for grade 12 students
- Student must complete an application with the Personalized Learning Department
- Student must successfully pass the Accuplacer Exam administered by CCV prior to enrolling in a course
- Ten students per academic year selected to attend on space available basis
- Student may attend any CCV site or elect an on-line course
- Student receives a letter grade from CCV
- Students who complete a contract prior to the course start receive credit with MAUHS
- Credit earned for CCV courses may be used towards core graduation requirements
- Student elects credit to be pass/fail or letter grade prior to course start
- Student receives a voucher to pay for a 3 credit course
- Student is responsible for payment of books, supplies and other fees
- Student receives transferable college credit for work

50450 SERVICE LEARNING/SUSTAINABLE COMMUNITIES
(Grades 10 – 12, 9th Grade with permission)

.50 Credit

Service learning connects the school and community in new and positive ways. We believe that learning opportunities grounded in the local community are critical in promoting a connected, purposeful and positive school experience that contributes directly to the development of young people as healthy, caring, informed, and active citizens. Service Learning/Sustainable Communities is a teaching and learning course that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities. Service Learning is a method by which young people learn and develop leadership and communication skills through active participation in thoughtfully organized service experiences.

Service Learning/Sustainable Communities (SLSC) provides a contemporary perspective on what it means to be a responsible participant in one's own community. Community is identified from the local to the global level. Sustainable communities meet the need of the present while ensuring that future generations will be able to meet their needs. The class focuses on citizenship and responsibility toward those resources that civilization share, including our ecology/environment, economy, and human rights. Through reading, reflection, discussion, and writing students will be immersed in the ideal and practice of service learning. Students will gain an understanding of their role in a democratic society that seeks to achieve the goals of a community. Student's research and study problems that exist or threaten the welfare of citizen's ability to participate in that democratic community. This course encourages students to be life long activists in their society. Service learning has many parts that include student inquiry, brainstorming, learning, serving, reflecting, and educating others. Some assignments involve: service-learning projects and participation in community.

60175 VIRTUAL HIGH SCHOOL (VHS) (Grades 9 – 12)

.50 Credit

Do you want to challenge yourself academically? Do you want to take on-line classes that engage you with content that is not taught here at Mt. Abe? Do you want to collaborate with classmates all over the United States and the Globe? Then Virtual High School may be the right fit for you. Virtual High School affords you access to hundreds of online courses. Whether you want to get a jumpstart on college, experiment with your intended major, learn more about a subject of interest or need to resolve a scheduling problem, VHS has classes for credit to suit your needs. Through Virtual High School, students all over the world, regardless of geographic location or socioeconomic background, have

access to over 240 credit bearing NetCourses, which occur anyplace, any time during the course of a regular semester, for enrichment or credit recovery purposes. VHS teachers are certified in their specific discipline, facilitate and continually monitor all courses. In addition, VHS students benefit from small classes and personalized one-on-one attention from active high school teachers, while mastering subject matter and 21st century and ICT (Information and Communication Technology) skills that will aid in the success of future work and higher education. Credit earned for VHS courses may be used towards core graduation requirements.

Benefits of VHS

- Available to students grades 9-12 (8th grade with permission)
- Independent thinking/problem solving skills
- Students better prepare for college and work-force learning.
- Practice and prepare for on-line college courses.
- Opportunity to collaborate with classmates from around the world
- Research skills
- Time management skills
- Opportunity to further explore a particular subject of interest
- Use of new technology

Note:

- Virtual High School is offered both fall and spring, and some AP courses may be all year.
- VHS courses cannot supplement courses taught by an instructor at Mt. Abe.
- There is an application process in the spring for Fall and Spring courses before being accepted.

PATHWAYS – A Personalized Learning Option

Students working with the community and teachers to shape their education.

Pathways is a Mount Abraham program where you meet graduation requirements in a student-centered learning environment. Project-based learning and a variety of other learning modalities are used to meet Mt. Abraham's competencies. All Mount Abraham students are eligible to apply. Interested? Find out more below!

A Pathways advisor works with you to create individualized projects or take courses from a menu of choices:

Mt. Abraham classes	Community mentors
Portfolio	College classes
Personal Learning Plan	Job shadowing
PHCC classes	Internships
Research	On-line classes

Your learning is demonstrated through semester Exhibitions. ***Pathways skill proficiencies are converted to Mt. Abe credits on a 1:1 ratio***, when requested or reported using narrative style evaluations. You can keep pace with your class toward graduation or design a time frame that best suits your needs.

Pathways students are eligible for all Mt. Abraham student support services, sports teams, driver's education classes, and other co-curricular and extracurricular activities.

Points of Interest

- Students choose their own topics of study.
- Each student has access to multiple Pathways advisors.
- Pathways is based out of the Personalized Learning classrooms at the high school, integrating learning with the wider community.
- Pathways students work on projects or attend classes daily.
- Students move toward graduation by completing projects that may or may not include Mt. Abraham, PHCC, college, or online courses.
- All students create a post-graduation plan in their final year.

Pathways could be for you if you:

- Want to **pursue your own interests** and develop your own talents
- Can learn to **work independently**
- Want **hands-on** learning and learning environments in the community
- Can work with an advisor to design and complete **individual and group projects**

For more details and an application, talk to your school counselor.

PHYSICAL EDUCATION & HEALTH

36101 <u>PHYSICAL EDUCATION 9A</u> (Grade 9)	.50 Credit
36102 <u>PHYSICAL EDUCATION 9B</u> (Grade 9)	.50 Credit

Physical Education 9A and 9B is a year-long course required of all freshmen. Upon successful completion of Physical Education 9A and 9B, a student will have earned 1.0 credit. Each student must have 1.5 credits of physical education in order to meet the graduation requirements. Physical education classes will meet every other day. Over the year students will participate in traditional sports as well as lifetime activities.

36201 <u>SENIOR HIGH ELECTIVE P.E.</u> (Grades 10 – 12)	.50 Credit
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Senior High Elective P.E. is a half-credit, semester long course and is open to students who have completed ninth grade P.E. Students need to take this class in order to fulfill their graduation requirement. Classes meet every other day. During the semester, students will participate in approximately eight activities, which include swimming, team, individual and lifetime sports. Students will focus on improving their individual fitness level throughout the semester.

Prerequisite: Successful completion of Physical Education 9A and 9B.

37201 <u>HUMAN DEVELOPMENT</u> (Grade 10)	.50 Credit
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GRADUATION REQUIREMENT

Human Development is a study of the physical, intellectual, and emotional changes we experience during adolescence. What makes personal behaviors safe or dangerous? How do personal choices impact self, family and community/social wellness? How do I make good choices? These are life-long questions, which we will begin to address in this class. Topics in this course include: alcohol and drugs; gender roles; media literacy; understanding relationships; reproduction.

36202 <u>PERSONAL FITNESS</u> (Grades 10 – 12)	.50 Credit
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Personal Fitness is a half-credit, semester long course and is open to students who have completed ninth grade P.E. Personal Fitness is a course based on exercise physiology principles. Topics of study are: energy balance, strength training, cardio-respiratory training, nutrition, body composition and fitness plan design. Students participate in and create individual and group workouts while studying various forms of fitness training and current trends in fitness.

Class may meet outside the school day. Students will join Bristol Health & Fitness.

Enrollment limit 12.

36204 <u>HEALTHY CHOICES</u> (Grades 9 – 12)	.50 Credit
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Healthy Choices is a half-credit, semester long course. This course is an effort to help students link their personal fitness and nutrition levels. When faced with choices that may impact your fitness level and overall health, it's important to remember that there are options and resources to help you make healthy decisions. You have choices and can learn how to avoid risky situations, break unhealthy habits, and improve your overall health. Students can take this course to help fulfill their physical education graduation credit.

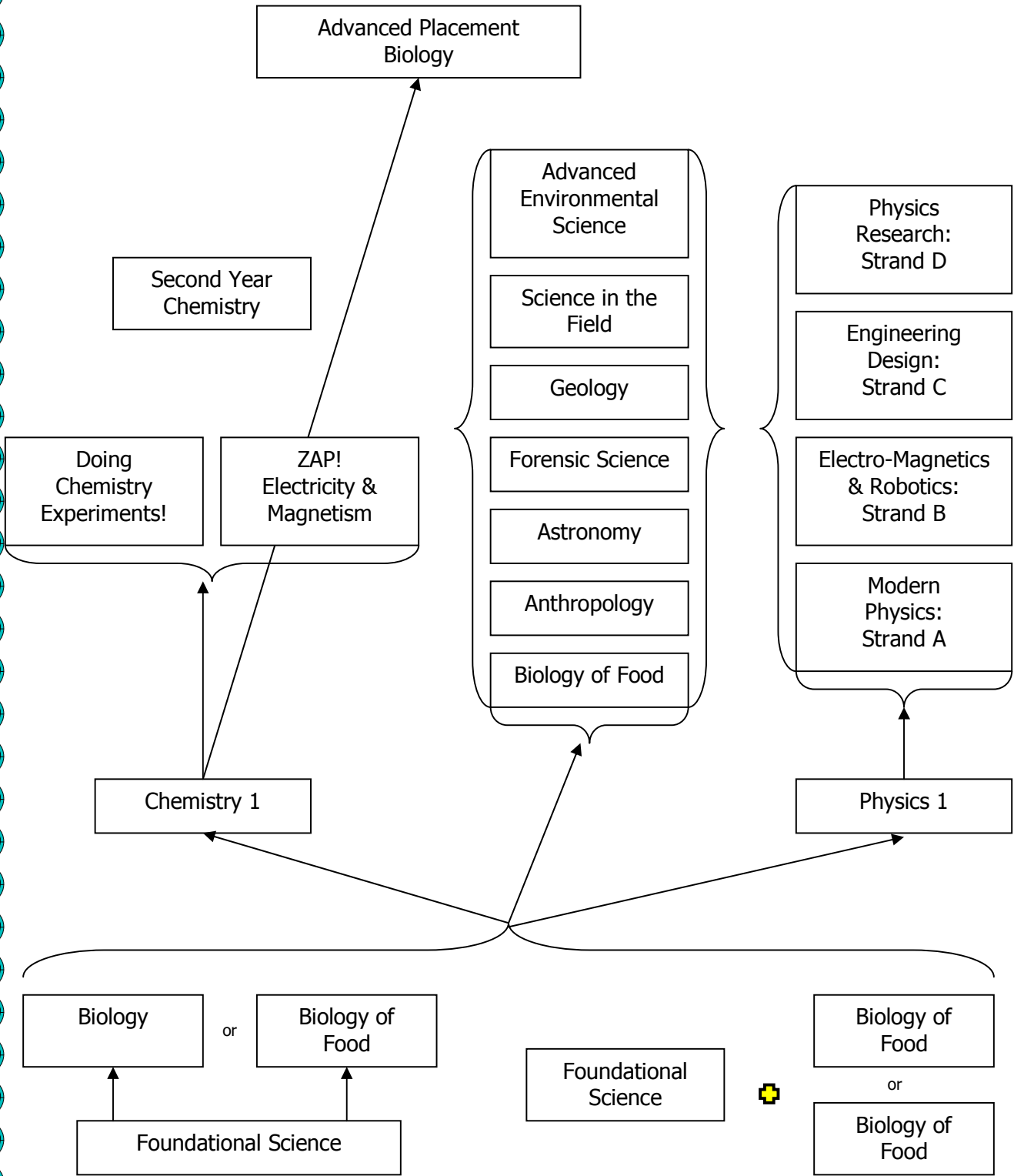
37205 TEEN ISSUES (Grades 10 – 12)

.50 Credit

In the course Teen Issues, students will look at a variety of issues that many adolescents face, whether personally or indirectly. Major areas covered will include mental health, nutrition, personal responsibility and choices, physical health, substance use/abuse and other current health issues. Much of this course will be student directed with students researching and presenting their new knowledge to the class. Guest speakers will also be used whenever possible.

Prerequisite: Successful completion of Human Development

Major Pathways through Mt. Abe Science Courses



For increased challenge or those students planning a science - connected career

SCIENCE

INTRODUCTION

Science is a way of learning by doing. Everyone can benefit by doing science, not just to gain knowledge, but also to learn problem-solving skills. It doesn't take a crystal ball to realize that many jobs in the near future will involve science. While most Mt. Abraham graduates take more than 3 science credits, all students are required to pass three credits (six semesters) of science. One of these credits must be a "Physical Science" and another credit must be a "Natural Science". It is important that students choose courses that match their abilities, interests, and career goals. Feel free to talk with any science teacher for advice. Your decisions are very important. Think them through carefully.

Ninth graders take two semesters of Foundational Science, which fulfills the "Physical Science" requirement. Tenth graders can take Biology or Biology of Foods to fulfill the "Life Science" requirement. Once students have completed the required Foundational Science and Biology courses, students have many other options for science elective courses. The flow chart provided can give you an idea of the many different options available to you and how the information taught in each course relates to other courses offered. You are encouraged to consider your future career and post-secondary interests and prepare accordingly. For example, students interested in a health career will want to consider taking both chemistry and AP biology; while students interested in a design technology/engineering career will want to consider taking chemistry and classical physics. Regardless of your post-secondary plans, all students are strongly recommended to take 4 years of science to prepare them for working, problem-solving and living in the 21st century.

FOUNDATIONAL SCIENCE INTRODUCTION

Foundational Science is a one-year course. It is divided into two parts. Foundational Science is a "Physical Science" that studies all aspects of the earth and universe.

40101 FOUNDATIONAL SCIENCE A (Grade 9)	.50 Credit
40102 FOUNDATIONAL SCIENCE B (Grade 9)	.50 Credit

The Foundational Science course provides 9th grade students opportunities to develop science skills, to practice the methods of science inquiry and to build a foundation of science concepts. The skills emphasized are mapping, graphing, summarizing & reading for meaning, lab and lab safety skills as well as computer technology and probeware skills. Practice of lab skills is through a variety of hands-on activities that culminate in the writing of lab reports or presentations to the class about the outcomes of the lab investigation. Students learn in a collaborative scientific environment where they continuously learn from their discoveries, failures and questions. Content areas focus on physical and chemical relationships that are used in upper level science courses, including, but not limited to, geology, climate and weather, natural resources and science exploration.

BIOLOGY INTRODUCTION

Biology 1 A & B is a one-year course divided into two semesters. Biology is a natural science.

41201 BIOLOGY A: BASIC THEMES (Grade 10)	.50 Credit
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Biology A begins with the question, "What is life, biologically speaking". We look at the types of questions that we can answer using a scientific process and how a scientist might carry out an experiment or study. We also explore the limitations of science.

Ecology is our next major unit of study. We will look at food chains and webs and how energy flows and nutrients cycle in ecosystems. Other topics include populations and patterns of population change, inter-relationships between and among the living and non-living components of an ecosystems, and how humans impact both.

We conclude Biology A with a look into the microscopic world of cells. We explore different types of cells and how their various component parts support what they do—either as a single-celled organism, or as part of a complex multi-celled organism. Students will apply what they know about cell structure and function to disease-causing organisms and how the human immune system works to cope with and remember the invasions of these pathogens.

41202 BIOLOGY B: SECRETS OF LIFE (Grade 10)

.50 Credit

In Biology B, we will explore the fundamentals of genetics. The structure and function of DNA and how proteins are made will be a major focus. We will make connections between the microscopic world of DNA and proteins, how they work to determine what you and I look like and how inheritance happens. We will also investigate how cells reproduce, with a special look at how meiosis cell division is the key to genetic variety.

Our last unit of study will be evolution. With a solid understanding of other key biology topics, we can now explore how the process of natural selection leads to both the unity and diversity of life. We will look at patterns of change over geologic time and explore the evidence for evolution. Students learn Darwin's theory plus some modern ideas that update Darwin's work.

41203 BIOLOGY OF FOODS: FROM FARM TO PLATE A (Grades 10 – 12)

.50 Credit

41204 BIOLOGY OF FOODS: FROM FARM TO PLATE B (Grades 10 – 12)

.50 Credit

This course will take a closer look at the biology of foods from your local farm all the way to your dinner plate. By looking at food from a scientific viewpoint, you will gain an appreciation of how the biology of plants and animals relates to agriculture and food production. Through the inquiry process and a variety of hands-on experiments, you will learn about bacterial, fungal, plant and animal reproduction, growth and development. You will also apply this knowledge to real-world applications in farming and agriculture, sustainable practices and local food issues as you explore the application of science and technology to food production systems. Projects could include anything from building greenhouses and growing vegetables to incubating eggs and raising chicks. Be prepared to get your hands dirty, eat some yummy local food and learn some fascinating science along the way!

40160 CLIMATE CHANGE (Grades 10 – 12)

.50 Credit

This course explores the science of climate change. Students will learn how the climate system works; what factors cause climate to change across different time scales and how those factors interact; how climate has changed in the past; how scientists use models, observations and theory to make predictions about future climate; and the possible consequences of climate change for our planet. Finally, the course looks at the connection between human activity and the current warming trend and considers some of the potential social, economic and environmental consequences of climate change. This course builds off of concepts and principles taught in Foundational Science.

43401 PHYSICS 1A (Grades 10 – 12)

.50 Credit

Physics is one of the oldest branches of science which helps us understand how the universe and our immediate world around us work. For example, with an understanding of Physics you begin to answer questions such as "Why is it dangerous to drop a quarter off of the Empire State building." Or "How do ice skates work." In this course you will conduct scientific investigations and build a framework of understanding to answer questions such as these. As you finish the semester you will begin to be able to describe how matter and energy interact in the universe. Our topics in Physics 1 will include a study of mechanics ranging from Newton's laws of motion to Energy and Universal Gravitation.

Prerequisite: Successful completion of 9th grade Foundational Science and Integrated 1 Math (or concurrent enrollment in IM 1)

43402 PHYSICS 1B (Grades 10 – 12)

Physics B takes up where Physics A leaves off. In this semester the types of questions you may answer include "What are the advantages and disadvantages in driving a bigger truck?" and "What is the lowest possible temperature?" As you complete your class work and investigations during the semester you will learn about topics of study ranging from properties of matter, energy transfer, heat and efficiency.

Prerequisite: Successful completion of Physics 1 A and Integrated 1Math (or concurrent enrollment in IM 1)

43411 MODERN PHYSICS: PHYSICS 2 STRAND A (Grades 11 – 12) .50 Credit

Physics 2A allows you to build on what you learned in Physics 1. Where Physics 1 covered the physics discovered before 1860, Physics 2 takes us from the understanding of the 1870's up to the current issues of Physics research. Mathematical modeling will be used to explore questions such as "What happens as you fall into a black hole?" and "How will the Universe end?" Relativity, String Theory, Quantum Teleportation and other really exciting topics will be researched in depth.

Prerequisite: Successful completion of Physics 1A and B and Integrated Math 2 (or concurrent enrollment in IM 2)

Please note: This course is only offered in the fall semester

43412 ELECTROMAGNETICS AND ROBOTICS: PHYSICS 2 STRAND B .50 Credit
(Grades 11 – 12)

Physics 2B is a semester long elective that delves into the Physics of Electromagnetic phenomena. You will study topics such as electrostatics, electric currents, circuits, magnetism, electromagnetic induction, and robotics. You will find the answers to questions like "Why is a car often the best place to be when lightning strikes?" (Hint: It's not because of the tires!) and "How do I-Phone wireless powermats work?"

Prerequisite: Successful completion of Physics 1A and B and Integrated Math 2 (or concurrent enrollment in IM2)

Please note: This course is only offered in the spring semester

43413 ENGINEERING DESIGN: PHYSICS 2 STRAND C (Grades 11 – 12) .50 Credit

Physics 2C is a semester long elective that allows you to challenge yourself by entering a local UVM Engineering competition. You and your team will compete against students from other schools and learn to work together as an engineering design group.

Prerequisite: Successful completion of Physics 1A and B and Integrated Math 2 (or concurrent enrollment in IM 2) and permission of the instructor

Please note: This course is only offered in the fall semester

43414 INDEPENDENT PHYSICS RESEARCH: PHYSICS 2 STRAND D (Grades 11 – 12) .50 Credit

Physics 2D is a semester long elective that allows you to challenge yourself by designing and carrying out your own experiments and research into topics relevant to physical science.

Prerequisite: Successful completion of Physics 1A and B and Integrated Math 2 (or concurrent enrollment in IM 2) and permission of the instructor

Please note: This course is only offered in the spring semester

CHEMISTRY INTRODUCTION

Most science-based careers need knowledge of chemistry. This includes careers in medicine, for example as a nurse, pharmacist, pediatrician, or large animal veterinarian; careers in engineering, for example as a chemical engineer, environmental engineer, or rocket scientist; and environmental careers, such as climatologist, forester or oceanographer. Chemistry is also very useful for a wide variety of other careers. Examples include lawyers, court stenographers, and politicians, to help them understand technical testimony; writers and photographers, so they have the expertise to write and illustrate science-based stories; and elementary teachers, who are expected to be able to teach everything. It also helps concerned citizens understand global warming, the effects of pollution, nutrition, and other important problems, and help them take appropriate action if needed.

43201 CHEMISTRY 1A: OUR CHEMICAL WORLD (Grades 9 – 12) .50 Credit

Chemistry is a study of the materials of the known universe, explaining their composition and behavior. Chemistry 1A starts with a study of water and the many materials that dissolve in it. Students learn how to write and interpret chemical formulas and equations. They study the relationship between atomic structure and the properties of materials, including the differing reactions of metals and non-metals. Students start lab work early in the course, as it is integrated throughout the program.

43202 CHEMISTRY 1B: A CLOSER LOOK AT ATOMS (Grades 9 – 12) .50 Credit

Chemistry 1 B includes a further study of the relationship between atoms and the properties of materials, including how the periodic table organizes information about atomic structure and the properties of elements. The study of common materials continues with a detailed study of air and other gases, radioactivity, and modern ideas of atomic structure.

Prerequisite: Chemistry 1 A or permission of the instructor

43211 ZAP! ELECTRICITY AND MAGNETISM (Grades 10 – 12) .50 Credit

ZAP! Is a one-semester course for students who have completed Chemistry 1, or who are presently taking Chemistry 1.

You use electricity every day for everything from lighting your home to running your electronic devices, but how much do you know about it? Sure you can usually find the ON switch, or recharge your phone battery, but can you explain why some devices use a whole bunch of little batteries instead of one large one or why your electric bill charges you for kilowatt hours instead of volts? Or why textbooks always mention magnetism and electricity together, or how nuclear fission can make electricity instead of exploding like a bomb?

ZAP! Builds on your knowledge of electricity (or your lack of it!) so that you understand the answers to the above questions, and much more! It is largely hands-on, though some theory is included to provide a more complete understanding of the topic.

If you take **ZAP!** You will learn about circuits and switches, batteries, generators and solar cells, electrolysis and electroplating, magnetic fields, static electricity and how electrical energy can be changed to light, heat, sound and motion.

Prerequisite: Completion of Chemistry 1 A & B. It may be taken concurrently with Chemistry 1 with the permission of the instructor.

43212 DOING CHEMISTRY EXPERIMENTS! (Grades 10 – 12) .50 Credit

Doing Chemistry Experiments! Is a one-semester course for students who have completed Chemistry 1.

Working in groups of 1, 2 or 3, students will investigate topics of their choice involving the physical and chemical properties of materials, as approved by the teacher.

Along with doing experiments, students will learn how to choose a good topic to investigate, where to research information on the Internet and in books to make the experiments more focused and understandable, and techniques for recording experiments and explaining observations.

Prerequisite: Completion of Chemistry 1 A & B or permission of the instructor. May be taken concurrently with Chemistry 1 A & B with permission of instructor.

41403 ANTHROPOLOGY (Grades 11 – 12) .50 Credit

Anthropology involves the study of human evolution from around seven million years ago to the beginning of civilization. Additional topics of study include early archeology, ethnology, folklore, and the evolution of the English language.

Prerequisite: Biology A & B or permission of instructor

40151 ASTRONOMY (Grades 10 – 12)

.50 Credit

Astronomy is a semester-long introductory course that will give students a general introduction to the mysteries of our universe. Students will gain a better understanding of the movement and origins of objects in space. Through labs, activities, readings and of course, the planetarium, we will explore the universe near and far while contemplating the questions "who are we?" and "how do we know?" Expect to be astonished!

Prerequisite: Foundational Science A & B or permission of instructor.

40210 FORENSIC SCIENCE (Grades 11 – 12)

.50 Credit

This is a one-semester course. Students will learn selected techniques used in forensic investigations. They will apply those techniques to crime scene and evidence analysis. The course will include the history of forensic science, laboratory exercises in evidence collection, analysis, and the application of forensic techniques in fiction. Junior standing or instructor permission is required.

40170 GEOLOGY, THE EARTH BENEATH OUR FEET (Grades 11 – 12)

.50 Credit

Geology is the study of the earth. We will seek to understand the local geology and answer the question, why does the landscape look the way it does and how do humans change the landscape. The class will make use of lab activities and field trips. Major geochemical and geophysical cycles will be applied to Vermont geology.

Prerequisites: 11th and 12th grade, 10th grade with instructor's permission.

THIS COURSE WILL BE OFFERED IN ALTERNATE SCHOOL YEARS.

UPPER LEVEL SCIENCE ELECTIVES

41401 AP BIOLOGY CLASS A (Grades 11 – 12)

.50 Credit

41402 AP BIOLOGY CLASS B (Grades 11 – 12)

.50 Credit

41404 AP BIOLOGY LAB A (Grades 11 – 12)

.50 Credit

41405 AP BIOLOGY LAB B (Grades 11 – 12)

.50 Credit

The purpose of this course is to give you a solid technical understanding of the major ideas in Biology. Near the end of the course, you may take a national exam that may qualify you for college credit or placement out of entry-level college courses.

We begin the course by analyzing and practicing how a scientist thinks about his or her scientific questions and process. Next, we will explore the topic of evolution, since it is the major organizing concept for every other topic that we study. Other topics will include ecology, the chemistry of life, cell structure and function and metabolism. As we explore how cells work on the molecular level we will concurrently study how the human body works on the macroscopic level. For example, we will study the function of mitochondria in cells and then explore how the digestive, circulatory and respiratory systems in vertebrates support that process on the cellular level. After the semester change, we will continue our study of how cells and metabolism work. The study of genetics, DNA, gene regulation and genetic engineering will likely be our first topics of study. Other topics will include photosynthesis, plant structure and function and explorations into the diversity of life.

Laboratory work is a major component of this course and we will complete the 12 labs required by the College Board. We will also complete many other supplemental labs, simulations and model-building exercises to round out our understanding of how biological processes work. Students in AP Biology should expect a summer assignment prior to the start of school. We will proceed through the course at a fast pace and students should expect at minimum one hour of independent reading and other work at home per night. AP Biology will help you hone the learning skills that will prepare you for success in college-level classes.

Prerequisite: Biology A & B or Biology of Foods A & B, Completion of Chemistry 1 with grades of B or higher and permission of instructor. NOTE: Students taking AP Biology need to sign up for both the class and lab. AP Biology is a "double block" class.

- 40401 ADVANCED ENVIRONMENTAL SCIENCE A** (Grades 11 – 12) .50 Credit
40402 ADVANCED ENVIRONMENTAL SCIENCE B (Grades 11 – 12) .50 Credit

Advanced Environmental Studies is a year long course designed to give students the opportunity to learn and apply concepts, principles, and methodologies required to understand the interrelationships of the natural world. The course will include science process, energy conversions, systems, human interactions with nature, environmental problems, and human survival. The content draws from a broad base in science including the advanced environmental science curriculum. Students should expect to do some outdoor labs. There will be considerable reading outside of class time.

Prerequisite: Students should have successfully completed the following classes as prerequisites: Foundational Science, Biology, Integrated Math 2. Chemistry is recommended.

Semester 1 is prerequisite for semester 2.

THIS COURSE WILL BE OFFERED IN ALTERNATE SCHOOL YEARS. **Not being offered in 2011 – 2012.** If there is enough interest, it will be offered again in the 2012 – 2013 school year.

- 40110 SCIENCE IN THE FIELD** (Grades 10 – 12) .50 Credit

This is a one semester. Students will develop field based research projects based on personal interests. The students will propose and carry out their field based research project. The semester will end with the presentation of student research in written and oral formats. Students should expect to spend considerable time outside.

Prerequisite: Students should have successfully completed Foundational Science, Biology, and be concurrently enrolled in Integrated Math 2. Chemistry is recommended.

THIS COURSE WILL BE OFFERED IN ALTERNATE SCHOOL YEARS.

- 40115 WETLANDS FOR ALL** (Grades 10 – 12) .50 Credit

Do you like mud? Do you like to be outside in the swamp? Would you like the chance to reclaim 25 acres of land to its natural wetland state? 'Wetlands for All' is a course that will be offered in the spring semester. This course will be an intensive study of wetlands, their delineation, characteristics, functions and reclamation. We will be working on a wetland in Monkton. This course is a good spring semester companion course for Science in the Field offered during the fall semester.

Prerequisite: Students should have successfully completed Foundational Science, Biology, and be concurrently enrolled in Integrated Math 2. Field Based Science class in the fall is suggested.

- 43301 SECOND YEAR CHEMISTRY A** (Grade 10 – 12) .50 Credit
43302 SECOND YEAR CHEMISTRY B (Grade 10 – 12) .50 Credit

Students take a second year of chemistry for a variety of reasons. Therefore the topics studied may vary. The usual course of study uses the first part of Chemistry and Chemical Reactivity by Krotz, Treichel and Weaver, a standard college textbook. The topics include a review of elements, compounds and the periodic table; an overview of the development of the Bohr-Rutherford model of the atom; qualitative and quantitative information from chemical equations; precipitation, redox, and acid-base reactions in solution, and energy changes during chemical reactions. There is a CD available to explain many topics interactively and standard experiments are included as appropriate.

Prerequisite: Chemistry 1

SECOND LANGUAGE

46101 FRENCH 1A	(Grades 9 – 12)	.50 Credit
46102 FRENCH 1B	(Grades 9 – 12)	.50 Credit

Studying a foreign language not only produces communicative competence, but also promotes cultural awareness and a broader world view. Second language study also provides deeper proficiency in one's native language. Spoken by more than 125 million people around the world, French is a practical language used in business, international affairs, and the arts. French I provides an overview of commonly-used French vocabulary, French verbs, and cultural insight into the French-speaking world. Students speak, read, write, and listen in the French language.

46103 FRENCH 2A	(Grades 9 – 12)	.50 Credit
46104 FRENCH 2B	(Grades 9 – 12)	.50 Credit

French 2 includes a review of and continuation of concepts established in the French 1 curriculum. Students continue to broaden their French vocabulary while learning past and future verb tenses. Students will read from authentic Francophone texts and will gain familiarity with subtle cultural issues.

Prerequisite: An average of C or better in French 1

46301 FRENCH 3A	(Grades 10 – 12)	.50 Credit
46302 FRENCH 3B	(Grades 10 – 12)	.50 Credit

French 3 builds upon the foundation established in the first two years. In level 3, students will expand both their vocabulary and grammar in all four areas of communication: listening, speaking, reading, and writing. Grammar lessons will focus on past tenses, reflexive verbs, and the imperative mood. Readings will include works from writers such as Sempé and poets such as Prévert. Students will gain a deeper cultural and linguistic awareness of the francophone world.

Prerequisite: An average of C or better in French 2

46401 FRENCH 4A	(Grades 11 – 12)	.50 Credit
46402 FRENCH 4B	(Grades 11 – 12)	.50 Credit

In French 4, students will solidify their ability to correctly use the various tenses in French with an emphasis on writing. Students will also continue to develop their skills in listening, speaking, and reading. This course provides an overview of French history and civilization using various sources including French music, film, Internet, current news articles, poetry, and literature. Students will observe similarities and differences between their own cultures and French-speaking cultures. French 4 is a combined class with level 5 and operates on a 2-year revolving curriculum.

Prerequisite: An average of C or better in French 3

46403 FRENCH 5A	(Grades 11 – 12)	.50 Credit
46404 FRENCH 5B	(Grades 11 – 12)	.50 Credit

In French 5, students will solidify their ability to correctly use the various tenses in French with an emphasis on writing. Students will also continue to develop their skills in listening, speaking, and reading. This course provides an overview of French history and civilization using various sources including French music, film, Internet, current news articles, poetry, and literature. Students will observe similarities and differences between their own cultures and French-speaking cultures. French 5 is a combined class with level 4 and operates on a 2-year revolving curriculum.

Prerequisite: An average of C or better in French 4

PLEASE NOTE: Help in preparing for the AP language exam is available for students who want a challenge independent of French 5. This option is only for seriously motivated students who are prepared to work independently at a very demanding level. It requires commitment and a considerable investment of time.

47101	<u>LATIN 1A</u>	(Grades 9 – 12)	.50 Credit
47102	<u>LATIN 1B</u>	(Grades 9 – 12)	.50 Credit

Latin 1 will cover the fundamental grammatical and syntactical rules, and Latin vocabulary. Students will not only translate basic Latin sentences and paragraphs, but also gain a solid review of English grammar while expanding their ability to analyze and understand English vocabulary. Along the way, students will study Greek and Roman mythology, deities, and culture.

47103	<u>LATIN 2A</u>	(Grades 9 – 12)	.50 Credit
47104	<u>LATIN 2B</u>	(Grades 9 – 12)	.50 Credit

Latin 2 continues an introduction to Classical Latin. Latin 2 covers the remainder of morphology and grammatical constructions not covered in Latin 1. Students translate more complex sentences and paragraphs. The emphasis shifts to the translation of non-textbook primary sources. Also, students study the history of Rome from its mythological founding to its expansion throughout the Mediterranean world during its Republican period.

Prerequisite: An average of C or better in Latin 1

47301	<u>LATIN 3A</u>	(Grades 10 – 12)	.50 Credit
47302	<u>LATIN 3B</u>	(Grades 10 – 12)	.50 Credit

In Latin 3, students thoroughly review and finish learning Latin grammar. Students make the transition from textbook passages to Latin written by real dead ancient Romans. The class explores both prose and poetry, sampling a variety of authors to gain knowledge of how Latin can differ from author to author. The students also study the transition of the Roman Republic to an imperial power.

Prerequisite: An average of C or better in Latin 2

47401	<u>LATIN 4A</u>	(Grades 11 – 12)	.50 Credit
47402	<u>LATIN 4B</u>	(Grades 11 – 12)	.50 Credit

Latin 4 is a year dedicated to exploring the masterpiece of Virgil, the *Aeneid*. Students will translate portions of the epic itself and explore how he was influenced by earlier epics. Also, students will study Virgil's contemporary history and how the Aeneid fits into the author's times. Finally, students will trace the influences of Greek and Roman epics up to the present day.

Prerequisite: An average of C or better in Latin 3

47403	<u>LATIN 5A</u>	(Grade 12)	.50 Credit
47404	<u>LATIN 5B</u>	(Grade 12)	.50 Credit

In Latin 5, students are offered a variety of authors writing both prose and poetry to translate and study. The course is predominantly driven by student interest, and the students choose cultural and historical topics to explore in depth.

Prerequisite: An average of C or better in Latin 4

48101	<u>SPANISH 1A</u>	(Grades 9 – 12)	.50 Credit
48102	<u>SPANISH 1B</u>	(Grades 9 – 12)	.50 Credit

Student in the level 1 course will learn to communicate in Spanish at a basic level. Emphasis will be placed on developing the four skills: listening, speaking, reading and writing. Within thematic units of study, students will learn to ask and answer simple questions, speak about themselves, their families and their town. Students will explore differences and similarities between Hispanic cultures and their own within these thematic contexts. There is strong emphasis on communicative skills, including pronunciation.

48103	<u>SPANISH 2A</u>	(Grades 9 – 12)	.50 Credit
48104	<u>SPANISH 2B</u>	(Grades 9 – 12)	.50 Credit

Spanish 2 is a spiraling continuum of the Spanish I curriculum. Students will review and refine the use of the present tense and basic grammatical structures within familiar thematic units, such as speaking about oneself and one's school, friends, family, and family celebrations. Students will have opportunities to compare and contrast different aspects of culture. Cultural practices and products will be explored, such as the *quinceañera* celebration and poetry. The two major grammatical concepts will be the reflexive verbs, necessary to be able to communicate in Spanish about daily routines, and the fairly complex preterit tense, to enable communication about past events.

Prerequisite: An average of C or better in Spanish 1

48301	<u>SPANISH 3A</u>	(Grades 10 – 12)	.50 Credit
48302	<u>SPANISH 3B</u>	(Grades 10 – 12)	.50 Credit

Spanish 3 is a spiraling continuum of Spanish 1 and 2. Vocabulary and grammar concepts from the previous levels will be reinforced throughout the thematic units. The themes include childhood, family celebrations, television and movies, cooking and food. More advanced grammatical structures will be introduced, such as the imperfect, future and conditional tenses, as well as a broader vocabulary. There will be continued emphasis on the four language skills; speaking, listening, reading and writing.

Prerequisite: An average of C or better in Spanish 2

48401	<u>SPANISH 4A</u>	(Grades 11 – 12)	.50 Credit
48402	<u>SPANISH 4B</u>	(Grades 11 – 12)	.50 Credit

Spanish 4 will continue to explore how we interact with the world around us, as well as the cultural practices and perspectives particular to Hispanic cultures, such as music and dance, myths and legends, archeological discoveries; and the interactions between cultures in the Hispanic world before and after the Europeans' arrival in the Americas. We will also explore the future through a technology lens and the rights and duties of being a citizen. Within these areas of study, we have the opportunity to compare and contrast different realities, perspectives and practices between the Hispanic world and the United States, and also within the ethnic diversity of the United States, with an aim to increasing our understanding and appreciation of our differences and similarities. The grammatical structures and vocabulary will complement the above thematic units as well as provide skills and tools for further study in other areas. There will be continued development on the four language skills, reading, writing, listening and speaking, with increasing emphasis on independent production. This is a combined Spanish 4/5 class and assessments and expectations will be modified to reflect the student's level.

Prerequisite: An average of C or better in Spanish 3 and teacher recommendation

48403	<u>SPANISH 5 A</u>	(Grades 11 – 12)	.50 Credit
48404	<u>SPANISH 5 B</u>	(Grades 11 – 12)	.50 Credit

Spanish 5 will continue to explore how we interact with the world around us, as well as the cultural practices and perspectives particular to Hispanic cultures, such as music and dance, myths and legends, archeological discoveries; and the interactions between cultures in the Hispanic world before and after the Europeans' arrival in the Americas. We will also explore the future through a technology lens and the rights and duties of being a citizen. Within these areas of study, we have the opportunity to compare and contrast different realities, perspectives and practices between the Hispanic world and the United States, and also within the ethnic diversity of the United States, with an aim to increasing our understanding and appreciation of our differences and similarities. The grammatical structures and vocabulary will complement the above thematic units as well as provide skills and tools for further study in other areas. There will be continued development on the four language skills, reading, writing, listening, and speaking, with increasing emphasis on independent production. This is a combined Spanish 4/5 class and assessments and expectations will be modified to reflect the student's level.

Prerequisite: An average of C or better in Spanish 3 and teacher recommendation

Please note: Help in preparing for the AP language exam is available for students who want a challenge beyond Spanish 5. This option is recommended only for highly motivated and self-directed students who are prepared to work independently at a very demanding level. It requires commitment and a considerable investment of time.

47500 ANCIENT AND MODERN MYTHOLOGIES: FROM GREEKS TO GEEKS (Grades 11 – 12) .50 Credit

In this course we will explore both ancient and modern mythologies - the stories we tell to ourselves and each other about the shape of the world and the place of humans within it. We'll mix ancient Greek and Roman ideas and the modern mythologies found in science fiction. We'll examine how humanity defined itself with gods, heroes, and monsters, and how we continue to define ourselves with mega-corporations, computers, and starships.

SOCIAL STUDIES

50101 GLOBAL STUDIES (Grade 9) .50 Credit
50102 GLOBAL STUDIES (Grade 9) .50 Credit

Global Studies is a required one-year course that focuses on the historical and cultural development of the modern world. The growth of states from the time of the fall of the Roman Empire and their expansion and interactions throughout the world will be the main areas of study. Global current events will be regularly examined and analyzed for their historical causes and possible consequences to our lives.

50301 UNITED STATES HISTORY A (Grade 10) .50 Credit
50302 UNITED STATES HISTORY B (Grade 10) .50 Credit

United States History is a required year course divided into two semesters. In the first quarter, students explore their global citizenship as they look at pivotal events in our world today. Then as they work in town groups, they will be asked to investigate a research question about their home community and develop the answer into a professional photostory. This student-centered inquiry based unit allows for the gaining and practice of communication and collaboration skills to be built upon the rest of the year. Second quarter develops these learning strategies as the colonial and revolutionary periods are explored. Students will learn about resilience and perseverance as they study the clashing cultures of indigenous groups and the European settlers who forged the United States of America. A continuation of ideas from the photostory will frame the mid-term research paper. Second semester students will study the evolution of the U.S. Constitution and how it took the Civil War to come to a real decision about how the states and national government would interact with each other. As Americans moved west, claimed new territories and built new railroads, the continued clashing of cultures is examined. Finally, students will understand the racial and ethnic diversity of our nation of immigrants as they investigate their own ancestry and incorporate their year's learning into a final research paper. This course will offer students the opportunity to direct their learning as they collaborate using an electronic wiki. Students will engage in critical thinking and problem solving about their historic and contemporary world.

NOTE: History A & B are both semester courses. United States History is required for all tenth graders and is a graduation requirement.

50440 WORLD ISSUES (Grade 10-12) .50 Credit

Are you curious about your role in the world? Do you consider yourself a world citizen or do you want to become one? Do you wonder how a U.S. citizen or our nation prioritizes relations with the world? The MAUHS World Issues course provides the background you need to step confidently into the world. Contacts are made with other world citizens – from students to activists to armed services personnel to business leaders and government workers. In World Issues class, you work with others to research globalization issues, explore potential global experiences and take action to improve our world.

50411 AMERICAN STUDIES (Grade 11) .50 Credit
50412 AMERICAN STUDIES (Grade 11) .50 Credit

This course is an interdisciplinary study of twentieth century history, literature and culture. The course utilizes a variety of educational methods, including open classroom, collaborative groups and traditional approaches, to present an integrated view of the American experience in the twentieth century. Students read novels, plays, poems and narrative

accounts of each time period in the century, use primary sources for historic study, listen to music and look at examples in the visual arts from each era. **Students are expected to take on much responsibility for their learning. Students will be expected to read and write extensively in both English and History.** A project is required for each thematic unit. Students are required to write a formal research paper on a topic of their choice within the scheme of the course. The history and literature for the course begin around 1900. The course examines the century both past and present, emphasizing recurrent trends and themes within its span. Current history is examined through the use of periodicals and discussion. Students receive one-half credit per semester in both Social Studies and English for successful completion of the course. Readings listed represent a possible range to be selected at the instructor's discretion according to student needs and preferences; additions or changes to the reading list are ongoing.

50403 AGE OF LEGALITY (Grade 12) .50 Credit

Age of Legality is a one semester course required for seniors. Wide ranges of topics are explored around the themes of citizenship, citizen's rights and responsibilities, the criminal justice system, and national and personal economics. Students are encouraged to develop a perspective around the themes that allow them to become active, engaged, responsible and knowledgeable citizens. In addition to this course of study, every Age of Legality student will become engaged in a community, civic project. Finally, students are required to come to class prepared to discuss current local, state, national and world issues. Being engaged and informed is a fundamental component of this course.

50404 WE THE PEOPLE (Grade 12) .50 Credit

We the People is the study of constitutional and philosophical rights, relevant Supreme Court Cases, and United States citizenship responsibilities. This course meets the Age of Legality requirement for all seniors. Through relevant readings, critical analysis, discussion, debate, and activism students will better understand the rights and responsibilities of citizenship. The class works together as a team to compete against other Vermont schools. Students work in smaller teams to research, write, and respond to constitutional issues. At the completion of the course students will debate nationally established questions in a simulated congressional hearing held at the Vermont State House in Montpelier.

50413 20th CENTURY AMERICAN HISTORY A (Grade 11) .50 Credit

50414 20th CENTURY AMERICAN HISTORY B (Grade 11) .50 Credit

Twentieth Century American History is a full year course divided into two semester length segments. In this course, we examine the political, economic, technological and cultural events that shaped Twentieth Century American History. This course consists of four themes to help make clear connections among the major ideas, people, innovations and events that impacted the development of the United States. The themes are: 100 Years of Change, The Ongoing Search for Justice, Great Challenges and A Century of Conflict. Whenever possible, themes will be presented with illustrative vignettes on local, national, international and contemporary levels.

NOTE: This course or American Studies is required for graduation

50421 PSYCHOLOGY (Grade 12) .50 Credit

Psychology is a one-half credit one-semester course in introductory behavioral science. The course is designed to give the student the opportunity to investigate the major factors influencing human behavior. Specifically, we shall look at the roots of psychology as a science in the 19th century and trace its evolution into the 21st century. We shall look in detail upon the working of the human brain and review the most recent research available on what is being uncovered about its workings. We shall additionally study the topics of human learning theory, human intelligence and motivation. Beginning in November and proceeding into December we shall investigate Human personality development and the course will conclude with the areas of mental disturbance and therapy.

NOTE: Open to grade 12 students only or by special permission of instructor.

50422 SOCIOLOGY (Grade 12) .50 credit

Sociology is a one-half credit one-semester course in introductory behavioral science. The course is designed to give the student the opportunity to investigate the major factors influencing human group behavior. Specifically, we shall look at the roots of sociology as a science in the 19th century and trace its evolution into the 21st century. We shall look in

detail upon the workings of group behavior and review the most recent research available on what is being uncovered about Social interaction. We shall additionally study the topics of socialization, group organization, small group dynamics, deviance, marriage and the family and finally, race and ethnicity.

Considerable effort will be expended towards conducting active "hands on" research methods and experiences. We shall frequently use the class as a model group to experience and record both interaction and dynamics. Active participation in these activities is a key to the class being successful.

NOTE: Open to grade 12 students only or by special permission of instructor.

50401	<u>AP UNITED STATES HISTORY</u>	(Grade 12)	.50 Credit
50402	<u>AP UNITED STATES HISTORY</u>	(Grade 12)	.50 Credit

Advanced Placement United States History is a full year, one credit course that surveys American History from the Age of Exploration up through the 1970's. AP U.S. History will be an extremely rigorous and challenging course that will be taught on a college level. The course is structured so that the student can successfully prepare to take the AP U.S. History exam in May. Many colleges grant credit to students who score well on this examination.

Prerequisite: Completion of United States History – 10th grade. American Studies or 20th Century American History – 11th grade. If a student has below a B- average in these classes as a final grade he/she can still take AP history with a recommendation from his/her previous history teacher.

PART 4

HANNAFORD CAREER CENTER

BRIEF DESCRIPTIONS OF PROGRAMS AVAILABLE AT THE PATRICIA A. HANNAFORD CAREER CENTER for 2012-2013

**For more information on these programs and the
Hannaford Career Center, visit our website at:
<http://hannafordcareercenter.org>**

Career and Technical Programs (available to 11th and 12th grade students)

AGRICULTURE ACADEMY PROGRAMS

SUSTAINABLE AGRICULTURE - Livestock and dairy management, fruit and vegetable production are explored as part of Vermont's sustainable food system in this two-year revolving program. Students receive a challenging study of livestock anatomy and physiology, animal behavior, veterinarian terminology, livestock nutrition, and sustainable feeding practices. Students learn how entrepreneurship works as they create and develop their own business plans. Business elements covered include planning, financing, marketing and sales. Visits to locally owned agricultural businesses help develop student understanding of the depth and importance of this sector of the community to the local economy. Science-based inquiry will guide much of the learning.

Prerequisites: 10 credits on transcript. Credits: six credits (1 science, 5 elective) upon completion of the program. Students may be eligible for college credits from Vermont Technical College.

FORESTRY, CONSERVATION AND NATURAL RESOURCES - Units of study include: conservation practices; soil and water testing; land judging and surveying; computer applications; chainsaw/equipment operation and maintenance (backhoe, dozer, excavator, truck and trailer); wetland and waterfowl management; soils, aerial photo and topographical map interpretation; GIS; GPS; environmental laws, practices and permits; outdoor recreation and aquaculture. Sustainable use of our forest resources for timber, water, wildlife and recreation is the focus of this semester. A few of the areas covered are: maple sugaring; forest management; Christmas tree production; wildlife management including habitat requirements for deer, bear, grouse, turkey, and non-game species; aquaculture; timber harvesting; forest products; business management; contracts; record keeping; marketing; equipment operation and preventative maintenance.

Prerequisites: 10 credits on transcript. Credits: six credits (1 science, 1 math, 4 elective) upon completion of the program.

DIESEL POWER TECHNOLOGY - Covers engines and fuel systems, and power trains. Students will learn gas and diesel engine overhaul skills needed to enter the field as an agricultural, industrial, and consumer products mechanic. Other topics covered: equipment set-up, adjustment and maintenance, sales; customer relations; computerized electronic fuel systems; lubricating and cooling systems; valves; timing and micrometers. They will also learn mechanical skills for power transmission systems that prepare them to work on agriculture, industrial and consumer products equipment. Explore power transfer using clutches, gears, power shifts, torque converters, hydrostatic, final drives and power take off devices. Tractor trailer trucks and construction equipment maintenance are part of the course. Job placements may be available for qualified students. Leadership training through FFA is an integral part of the course.

Prerequisites: 10 credits on transcript. Credits: six credits (one science, 1 math, 4 elective) upon completion of the program. Students may be eligible for college credits from Vermont Technical College.

BUSINESS AND SERVICES ACADEMY PROGRAMS

CULINARY ARTS - This class is an introduction to the food service industry focusing on the operation of the Glass Onion Restaurant. Students learn basic cooking skills such as soups, sauces, entrees, breads and desserts. Experiences in dining room service, catering, cashiering and hosting are included. Emphasis is given to menu planning, costing, and kitchen management. Includes off-premise catering experiences. In-depth work experience in area businesses is available to qualified students. All students are given the opportunity to be certified in ServSafe, endorsed by the National Restaurant Association.

Prerequisites: 10 credits on transcript. Credits: six credits (one science, five elective) upon completion of the program. Students may be eligible for advanced standing at New England Culinary Institute through coursework taken in this program.

HUMAN SERVICES - Designed for students pursuing careers in education, health care and social services. Learn the fundamentals of human development, education, and caring for children, the elderly and disabled. This course combines study with action. Second year students receive intensive on-the-job training and classroom seminars building on the knowledge and skills gained in the first year. Students working in community service agencies gain a deeper understanding of the needs of the elderly, disabled, adolescents and young children.

Prerequisites: 10 credits on transcript. Credits: six credits (1 social studies, 5 elective) upon completion of the program. Students may be eligible for college credits from Community College of Vermont.

HEALTH CAREERS - This class provides high school students with a unique and important opportunity to explore a variety of health careers. Students will have extensive exposure to clinical areas such as emergency care, operating room, laboratory, respiratory therapy, medical/surgical nursing, cardiology and several other health occupations. Students receive training to prepare them for taking the State LNA licensing exam. They also receive First Aid/CPR for the Health Provider training. Student study a college-level curriculum in Medical Terminology and Human Biology.

Prerequisites: 10 credits on transcript and a B average or better in a college-prep biology-based science. Strong math skills are also recommended.

Credits: six credits (1 science, 5 elective) upon completion of this program. Students may be eligible college credit from Community College of Vermont for coursework taken in this program.

ARTS & HUMANITIES ACADEMY PROGRAMS

ADDISON REPERTORY THEATRE - This program offers students an opportunity to create and run a theatre company. Students are responsible for all aspects of production: technical, management, performance, research, and writing. Under the guidance of a theatre professional and an English teacher, visiting artists and special guests, students will produce a Fall and Spring season of shows for presentation in schools, theaters and public spaces throughout the county. The English portion of A.R.T. explores classical dramaturgical literature, as well as related fiction and non-fiction writings. Students will be required to write journals, plays, and non-fiction, researched pieces and to complete a portfolio which includes nine polished pieces. Two tracks: Technical (AM) and Performance (PM).

Prerequisites: 10 credits on transcript, two of which must be college-prep English. Credits: three credits per year (1 fine arts, 1 English, 1 elective).

DESIGN & ILLUSTRATION - Over the course of the year, students create both an electronic and physical art portfolio that can be used to apply to colleges, internships or entry-level graphic design and illustration positions. Students use traditional art materials in combination with a variety of computer programs and technology, including: Adobe Photoshop, InDesign, Illustrator, digital drawing tablets, digital cameras and scanners, to create portfolio-ready works of art. Students study art approaches and

then apply those approaches to real graphic design and illustration scenarios. Q1: Drawing. Q2: Printmaking & Color Q3: Type as Art Q4: Photography & Collage This is a one-year program.

Prerequisites: 10 credits on transcript. Credits: 3 credits (1 fine arts, 2 elective).

TECHNOLOGY ACADEMY PROGRAMS

AUTOMOTIVE TECHNOLOGY - The objective of this program is to provide the student with a broad range of skills and knowledge necessary for technician positions in the automotive field. The students receive state-of-the-art training through theory lectures and lab experience. The course of study includes Safety Procedures; Tools and Equipment; Fasteners and Welding; Mechanical and Electrical Systems; Steering Suspension; Brake Systems; and Engine Performance. Second year students who qualify may elect to do a cooperative work experience at a local business. The student organization SkillsUSA is open to interested students, as well as the AAA/Ford Trouble Shooting Competition.

Prerequisites: 10 credits on transcript. Credits: six credits (1 science, 1math, 4 elective) upon completion of the program.

RENEWABLE ENERGY AND GREEN BUILDING (STEM 220, 221) - The fall semester (STEM 220) will focus on green building techniques and wood framing. Buildings are responsible for 48% of the total energy used in the United States. To help lower this amount of energy used in building students will study how to design and build energy efficient structures which will incorporate advance framing and insulating techniques, and use natural materials. Through the building process students will learn about wood framing, insulating, windows, indoor air quality, and solar orientation. The spring semester (STEM 221) will focus on renewable energy. Students will study renewable energy systems such as photovoltaics, solar thermal, bio-mass, and geothermal. Students will learn about basic electricity and how solar cells work. This knowledge will then be applied to design and install a renewable energy system on the structure which they built the first semester.

Prerequisites: 10 credits on transcript. Credits: 1.5 credits per semester.

INDUSTRIAL DESIGN AND FABRICATION (STEM 230, 231) - The fall semester (STEM 230) will focus on precision measurements and CNC programming. In the spring (STEM 231), students will learn machining, welding, soldering and brazing. Students will learn the skills of fabrication by designing and building a variety of projects. Students will have input into each aspect of design, purchasing, machining, construction and vehicle testing. They will learn about electrical motors, solar cells and batteries. Design concepts such aerodynamics and ergonomics will be researched. Students will have the opportunity to specialize in areas of design, machining, electronics, computer programming while participating fully in all aspects of building the vehicle. Students will also have the opportunity to work on individual projects.

Prerequisites: 10 credits on transcript. Credits: 1.5 credits per semester.

ARCHITECTURE AND ENGINEERING SYSTEMS (STEM 210, 211) - This program is a fast-paced one-year innovation and design program. The fall semester (STEM 210) will focus on engineering and mechanical design. The spring semester (STEM 211) will focus on architectural design and construction management. Students learn college-level principles of architecture and engineering design. Students use life drawing skills in combination with a variety of computer programs and technology including: AutoDesk AutoCAD, KeyCreator AutoCADKey, and a 3-dimensional solid model printer. Emphasis is based on using scientific inquiry, learning and applying the design process, and becoming proficient with design tools. Classes will also focus on improving one's communication and innovative problem-solving skills by modeling confidence, professionalism, community service, and workplace standards.

Prerequisites: 10 credits on transcript, completion of Algebra I and Geometry, or its equivalent. Credits: 1.5 credits per semester.

STEM ACADEMY - STEM Academy is a collaboration between the Programs of Architecture & Engineering Systems, Industrial Design & Fabrication, and Renewable Energy and Green Building. STEM Academy is a new approach to providing students greater freedom in selecting classes they are interested in. STEM Academy offers a variety of student-selected pathways to achieving a Certificate of Completion. All STEM classes are project based. STEM students will learn how to use the Design Process and apply Scientific Inquiry to design projects using Computer Assisted Drafting (CAD) and then construct these projects using precision machining tools and hand and power tools. STEM students will design and print plans in 3D, and drill, mill, rip, weld and cross cut steel and wood as they build the parts of their project which they then assemble. Green Technology, Sustainable Design and Building are incorporated in the entire curriculum.

How it works: To be a STEM Academy Completer students have to complete 4 semesters in the STEM academy. Students can choose from 3 different FOCUS classes and 2 Mini classes. Anyone at any time can take any semester class that they choose. You do not have to be a completer to take a STEM class.

Credits: 1.5 credits per semester for this half-day program. Total credits accrued is based on the number of semesters a student takes,

FOUNDATIONAL PROGRAMS (Available to 10th grade students)

INTRO TO NATURAL RESOURCES - In this pre-tech foundational course, students will learn basic chainsaw safety and maintenance, basic urban arboriculture, tree identification and care, wildlife management practices and equipment safety and operation. There will be several inquiry-based units on topics such as soils and ecology. Careers such as tree farming and maple syrup production will be investigated. This is a year-long, 80-minute course, but students may elect to take one semester.

Credits: 2 credits (1 science, 1 elective).

PLANT AND ANIMAL SCIENCE - Students learn techniques for the care and production of domestic plants and animals. Reproduction, selection, grooming and feeding are topics studied. Experience hands-on learning opportunities with farm animals and greenhouse plants. Explore careers in the plant and animal industries. Learn the techniques for the care and production of horses, plants, trees and shrubs. Become a land judge and use soil science. Help in greenhouse production and sales. Study animal systems using sheep, poultry, and dairy models. Learn about dairy foods and meat processing. Test soil for nutrients, pH and water quality. Figure fertilizer needs for crops and measure land. Plan a garden and study organic gardening. Explore agriculture careers and set goals for your career. Work in the greenhouse sale area.

Credits: 1.5 credits per semester, 3 credits per year.

MECHANICAL SCIENCE TECHNOLOGY - Obtain a safe equipment operation certificate. Learn small engine preventive maintenance. Develop a business marketing plan/advertising campaign for a seasonal sale. Identification and care of hand tools and small power tools. Gain skills in heavy equipment operation and land surveying. Learn basic engine systems and how they work. Learn to gas and stick weld. Perform tractor preventive maintenance tasks. Develop basic electric wiring and plumbing skills. Service a chainsaw. Bring in a shop project to work on.

Credits: 1.5 credits per semester, 3 credits per year.

VISUAL COMMUNICATIONS - In this program, students learn the principles of design and how to communicate through the media arts. Students create original two- and three-dimensional designs using traditional art materials in combination with a variety of computer programs and technology., including: Adobe Photoshop, Adobe InDesign, Adobe Illustrator, digital cameras and scanners. Students learn the fundamentals of design including: space, tone, color, line, balance, composition and form through real

design projects. Emphasis is placed on learning the creative process and personal expression. Careers in the arts are explored.

Credits: 3 credits (1 fine arts, 2 elective).

INTRO TO TECHNOLOGY - This foundational course will offer students hands-on experience in automotive, construction and manufacturing fields. In the automotive portion, students will learn the theory of reciprocating engines, gas and diesel engines, and how to order spare parts for vehicles. Safety with power tools, blueprint reading and simple construction will be covered during the construction portion. CNC programming, tools and tooling will be covered during the manufacturing section of the course. Basic competencies in thinking critically and problem solving, communicating effectively, using computers, working effectively and responsibly and career exploration will be infused into the curriculum.

Credits: 3 credits (1 math, 2 elective).

STEM ACADEMY - This program is a collaboration between the programs of Architecture & Engineering Systems, Industrial Design & Fabrication, and Renewable Energy and Green Building. STEM Academy is a new approach to providing students greater freedom in selecting classes they are interested in. STEM Academy offers a variety of student-selected pathways to achieving a Certificate of Completion. All STEM classes are project based. STEM students will learn how to use the Design Process and apply Scientific Inquiry to design projects using Computer Assisted Drafting (CAD) and then construct these projects using precision machining tools and hand and power tools. STEM students will design and print plans in 3D, and drill, mill, rip, weld and cross cut steel and wood as they build the parts of their project which they then assemble. Green Technology, Sustainable Design and Building are incorporated in the entire curriculum.

Credits: 1 to 1.5 credits per semester.

How it works: To receive a completion certificate in the STEM ACADEMY, a student would take four semesters from among the following options: STEM 100, STEM 101, Foundations of Engineering/Architecture (STEM 110, 111), Industrial Design & Fabrication (STEM 230, 231), Architecture & Engineering Systems (STEM 210, 211), Renewable Energy & Green Building (STEM 220, 221).

Credits: 1 to 1.5 credits per semester. Total credits accrued is based on the number of semesters a student takes.

INTRODUCTION TO STEM (STEM 100) - 5-week rotation in Industrial Design, Precision Measurement & Metal Fabrication: Students will gain lathe, mill and surface grinder skills while producing parts in aluminum and steel using measuring tools and machinery. Measurements will be in the plus or minus five thousandths of an inch. 5-week rotation in Engineering & Mechanical Design: Students will develop proficiency in designing and interpreting working drawings on computer. Students will learn about material properties, principles of engineering mechanics and thermodynamics and principles of building design. 5-week rotation in Green Buildings & Wood Framing: Students will learn safe operation of hand and power tools while investigating sustainable construction techniques. Hands-on project involves designing a green/sustainable building. 3-week Capstone Project: working in teams creating a project that uses all of the aforementioned skills.

Credits: 1.5

INNOVATION OF STEM (STEM 101) - 5-week rotation in Industrial Design, Welding: Students will learn the basics of stick welding steel, producing parts with stringer beads, butt, lap and T welds. 5-week rotation in Architectural Design & Construction Management: Students will learn principles of residential design details, architectural theory, building enclosure, climate control, and construction management. 5-week rotation in Renewable Energy & Green Building: Sustainable construction techniques are investigated while students work in small groups to design a building. Students will learn safe operation of hand and power tools. 3-week Capstone Project: a collaborative group effort that relies

on an analytical understanding of the skills and design elements mentioned above. Successful students will finish with portfolio-ready work which displays an understanding of design and academic work experience.

Credits: 1.5

For more information on these programs and the Hannaford Career Center, visit our website at: <http://hannafordcareercenter.org>