

Brookline High School
2014-2015

2014-2015 Course Catalog



BROOKLINE HIGH SCHOOL

Deborah Holman, Headmaster
Harold Mason, Assistant Headmaster

Anthony Meyer, Dean of Students
Scott Butchart, Interim Dean of Students

Melanee Alexander, Associate Dean
Lisa Redding, Associate Dean
Alexia Thomas, Associate Dean
Brian Poon, Interim Associate Dean

SCHOOL WITHIN A SCHOOL

Dan Bresman, Coordinator

BROOKLINE OPPORTUNITY FOR CHANGE

Bartlett Walker, Coordinator

WINTHROP HOUSE

Owen Minott, Coordinator

METCO PROGRAM

Keith Lezama, Coordinator

* * * * *

SCHOOL COMMITTEE

Alan Morse, Jr., Chair
Susan Wolf Ditkoff, Vice Chair
P.H. Benjamin Chang Helen Charlupski
Abby Cox Amy Kershaw
David Pollack Barbara Scotto
Rebecca Stone

* * * * *

CENTRAL ADMINISTRATION

Dr. William H. Lupini, Superintendent of Schools
Dr. Jennifer Fischer-Mueller, Deputy Superintendent for Teaching & Learning
Peter C. Rowe, Deputy Superintendent for Administration and Finance
Karen Shmukler, Assistant Superintendent for Student Services
Dr. Angela Allen, Director of Human Resources



BROOKLINE HIGH SCHOOL

DEBORAH HOLMAN, HEADMASTER

OFFICE OF THE HEADMASTER

February 2014

Dear BHS Students and Parents,

At Brookline High School there is a depth and richness to the BHS curriculum, to say nothing of the outstanding faculty that has designed it and teaches it each day.

The BHS Course Catalogue represents the menu of course and program offerings, which constitute one of the most comprehensive educational programs offered at any high school anywhere. There are hundreds of courses -- in the traditional academic disciplines, and in our valued elective programs. There are courses at different levels of intellectual challenge, including Advanced Placement programs in 18 subjects. In addition, there are three alternative programs -- School-Within-A-School (SWS), Opportunity for Change (OFC), and Winthrop House -- that enable Brookline High to address the needs of all of our students.

Your responsibility is to choose the most appropriate and challenging program for you. I encourage you to read the catalogue carefully, and discuss it with your teachers, your counselor, and your parents—all to insure that you make the best selections you can. We have eight “blocks” in our schedule. With our demanding graduation requirements as reminders, I encourage you to take at least six courses. Please remember that students are responsible for knowing and meeting all our graduation requirements. If you have questions, please work with your counselor.

Also, please know that the course selections you make this spring determine how we staff the high school. Assigning the right number of teachers to the specific courses that students select will become even more crucial this spring as the district works to prepare the best and most fair budget for all Brookline schools. What this means for students and families is that we will need you to choose courses very carefully this spring and commit to those courses as the ones you will take for 2014-2015.

Good luck in the second half of the 2013-14 school year, and, again, make sure that you make thoughtful and intentional decisions. Please let me know if I can help or advise you in any way.

Sincerely

Deborah Holman



115 GREENOUGH STREET
BROOKLINE, MA 02445
617.713.5003

DEBORAH_HOLMAN@BROOKLINE.K12.MA.US

TABLE OF CONTENTS

<u>The Core Values of the Brookline Public Schools</u>	I
<u>Mission Statement</u>	I
<u>Institutional Goals</u>	I
<u>Expectations for Student Performance</u>	II
<u>Planning Your High School Program</u>	II
<u>Graduation Requirements</u>	III
<u>Preparation for College/ Technical School/ Work</u>	IV
<u>Grading System</u>	V
<u>Grade Point Average</u>	V
<u>Course Offerings</u>	V
<u>The 21st Century Fund</u>	VI
<u>The Courses</u>	2
<u>Career and Technology Education</u>	1
<u>English Department</u>	15
<u>English as a Second Language</u>	23
<u>Health and Fitness</u>	25
<u>Mathematics</u>	25
<u>Sylvia K. Burack Library/Media Center</u>	34
<u>Opportunity for Change Program</u>	35
<u>Performing Arts</u>	36
<u>School Within a School</u>	41
<u>Science</u>	48
<u>Social Studies</u>	55
<u>Special Education</u>	62
<u>Visual Arts</u>	69
<u>World Language</u>	76
<u>Winthrop House</u>	88
<u>African-American & Latino Scholars Program</u>	94
<u>Community Service</u>	94
<u>Metco</u>	94
<u>Substance Abuse/Violence Prevention</u>	95
<u>BHS Tutorial</u>	95

THE CORE VALUES OF THE BROOKLINE PUBLIC SCHOOLS

HIGH ACADEMIC ACHIEVEMENT FOR ALL STUDENTS

EXCELLENCE IN TEACHING

UNDERSTANDING AND RESPECT FOR HUMAN DIFFERENCES

COLLABORATIVE RELATIONSHIPS

EDUCATIONAL EQUITY

MISSION STATEMENT

The mission of Brookline High School is to develop capable, confident life-long learners who contribute to their community, participate thoughtfully in democracy, and succeed in a diverse and evolving global society.

INSTITUTIONAL GOALS

- To provide intellectual and personal challenge with support for all students
- To deliver instruction which blends the traditional with the innovative, emphasizing both the acquisition of knowledge and its application
- To encourage in students the curiosity to ask questions and the resourcefulness to find answers
- To develop clear communication and creative expression in a variety of media
- To celebrate diversity so that our students gain an understanding of differences and an appreciation of our essential kinship

To these ends, the administration, faculty, staff and students work together to provide a safe setting in which all can flourish as members of this community.



EXPECTATIONS FOR STUDENT PERFORMANCE

I. CONTENT KNOWLEDGE AND UNDERSTANDING

Brookline High School students:

- develop the skills and knowledge described in the BHS course syllabi.
- develop the skills and knowledge to succeed on a variety of mandated internal and external assessments.
- meet Graduation Requirements as defined by the Brookline School Committee.

II. COGNITIVE POWERS/CRITICAL THINKING

Brookline High School students:

- analyze, synthesize, and draw reasonable conclusions.

III. COMMUNICATION

Brookline High School students:

- develop skills to communicate clearly and persuasively through writing, speaking, technology, and the arts.
- develop skills in listening and reading.

IV. CITIZENSHIP/SOCIAL VALUES

Brookline High School students:

- adhere to community standards as defined by the Code of Conduct in the BHS Handbook.
- demonstrate proficiency in collaborating and negotiating with individuals of varied backgrounds.
- behave in a respectful and ethical manner.
- demonstrate understanding of multiple perspectives and respect for human differences.

V. LIFE SKILLS

Brookline High School students:

- develop organizational and time management skills.
- set goals and work to achieve them.

PLANNING YOUR HIGH SCHOOL PROGRAM

Whether you are planning to go on to college, a technical school, or a job, it is important to build your high school program carefully. You want to be sure that you will first meet Brookline High School's graduation requirements in addition to those for a college and/or job, and also take advantage of the wide range of course offerings at The High School.



GRADUATION REQUIREMENTS

In order to graduate from Brookline High, students must satisfy the following Graduation Requirements:

English: (4 credits) # %	four years
World Languages: (2 credits) %	two years in one language
Mathematics: (3 credits)	three years
Science: (3 credits)	three years
Social Studies: (3 credits)	three years (World History I and II, U. S. History) #
Career and Technology Education, Community Service, Performing Arts and Visual Arts: (3 credits)	three years distributed across at least three of these program areas
Health and Fitness (1 credit)	Health and Fitness must be taken each year
Massachusetts MCAS exams	Exams passed in 3 areas: ELA, Mathematics, and Science & Technology

Minimum Course Requirements (22 total credits, including the following 19 required credits)

- # These course requirements are mandated by the State and cannot be modified.
 % Some students will achieve some of these credits by studying English as a Second Language

Exceptions:

We have a responsibility to provide a challenging program for every student which reflects the particular strengths and weaknesses of the student. Alternative programs and/or some modification of the Graduation Requirements are available. The alternatives below offer reasonable flexibility to satisfy Graduation Requirements and enable all students to experience academic success. In appropriate circumstances, the student's administrator may recommend a modification to the Graduation Requirements for approval by the Headmaster and Superintendent of Schools.

1. **Elective Pathway Alternative** –
 A “pathway” of three progressively advanced credits in either Performing Arts, Visual Arts, or Career and Technology Education may substitute for:
 - a. the distribution requirement in electives
 - or
 - b. two credits in World Languages, Mathematics, Science, or Social Studies, except that only one credit may be substituted in any of the four disciplines cited above.
2. **Academic Support Alternative** - Students enrolled in Learning Center or another academic support program (like the BHS Tutorial) may substitute two Learning Center credits for two credits in World Languages, Mathematics, Science, or Social Studies, except that only one credit may be substituted in any of the four disciplines cited above. This exception may not be combined with 1 (b). However, students in the Learning Center are eligible for the “pathway” exception in 1 (a).
3. A “**Waiver of Graduation Requirements**” may also be recommended, in writing, by the Headmaster for approval by the Superintendent of Schools. A waiver may be recommended for students who, because of extraordinary circumstances, have not satisfied all of the Graduation Requirements but, in the considered view of the Headmaster, have achieved the learning expectations of The High School.



PREPARATION FOR COLLEGE/ TECHNICAL SCHOOL/WORK

Most colleges suggest that you take a challenging and well-rounded academic program. Four-year colleges generally require (less than the BHS Graduation Requirements):

- four years of English
- at least two or three years of a foreign language
- three years of mathematics (Geometry, Algebra II, Advanced Algebra)
- two or three years of a laboratory Science (Physics, Biology, Chemistry)
- two years of social studies (including U. S. History)

Students should keep in mind the following minimum requirements for admission to Massachusetts state colleges and universities. Sixteen college preparatory courses distributed as follows are required. A course is equivalent to one full school year of study.

English	4 courses
World Languages	2 courses (in a single language)
Mathematics	3 courses
Science	3 courses
Social Studies	2 courses (including 1 course in U. S. History)
Electives	2 courses (taken from above subjects or from the Arts & Humanities or Computer Sciences)

This is a reliable guideline to follow for most colleges. If you are interested in a specialized field or a specific college, however, you should consult your counselor and check the college catalogue for any additional requirements. For example, engineering schools may require extra mathematics and science courses. Every college catalogue lists that college's requirements for admission.

It is helpful to draw up a tentative four-year program when you are entering the ninth grade. By doing so, you can ensure that you will have a balanced program each year. Many courses are sequential, so it is necessary to plan ahead. Of course, this will only be a "blueprint" and you may want to revise it as you progress and your interests change during your high school years.

Perhaps the most important rule to follow is: Keep all your options open. If you are uncertain about your long range goals (and most high school students are), follow a broad, general program of studies which will prepare you for almost any college major. Then you will have the freedom to choose among your options as a senior, and you will not find yourself missing important courses necessary to pursue your goals. You will also want to check the Career Center for information on colleges, technical schools, and the world of work.



GRADING SYSTEM

A HONOR	B+	C+	D+	E FAILING
A-	B GOOD	C AVERAGE	D PASS	
	B-	C-	D-	

N = Failure due to lack of attendance.

I = Incomplete: Incomplete grades must be made up by the end of the next marking period if credit is to be received. The Dean's Office will determine eligibility for issuance of an "incomplete" mark.

P/F = Pass/Fail: If a student selects a course to be marked with pass/fail option, a contract needs to be negotiated IN ADVANCE. See your counselor.

GRADE POINT AVERAGE

Grade Point Averages are computed at the close of the junior year. All marks earned for grades 10 and 11 are averaged on a 4 point scale:

A	=	4.0	C	=	2.0
A-	=	3.7	C-	=	1.7
B+	=	3.3	D+	=	1.3
B	=	3.0	D	=	1.0
B-	=	2.7	D-	=	0.7
C+	=	2.3	E	=	0

N, I, P, F = Not computed into GPA

COURSE OFFERINGS

ALL COURSES IN ALL DEPARTMENTS ARE COEDUCATIONAL. In most instances, courses at Brookline High School will not be offered when there are fewer than 15 students registered. The Headmaster will recommend exceptions to the Superintendent when the elimination of a course would (1) interrupt a sequential course, e.g., second year of a language sequence, (2) affect specific courses which are a vital part of an academic high school program, e.g., advanced placement courses, (3) affect courses for seniors which are an integral part of career pursuits or post-secondary educational plans; or other good cause.

Unless otherwise noted, all courses meet 4 periods/blocks per week and have no prerequisites.



THE 21ST CENTURY FUND

The Brookline High School 21st Century Fund (BHS21, or The Fund) is a non-profit organization whose mission is to create *local solutions to national challenges in public education*. Through its programs, BHS21 helps us successfully launch every young person at Brookline High toward a dignified next step. BHS21 was founded in 1998 by a dedicated and generous group of parents, alumni/ae, and citizens of Brookline. In the tradition of innovation at BHS, the Fund allows educators to think hard about formidable educational challenges, design programs that address them, and conduct research to validate the results. If successful, these programs are incorporated into the school's budget, whenever possible. Our successes are shared nationally. To serve as an engine of innovation is a unique and inspiring role for a public high school. The Fund's mission focuses on four core objectives:

- Foster academic success for all students;
- Support the development of a world-class faculty;
- Educate students to be leaders and citizens in a changing world;
- Enhance the science, technology, engineering, and math (STEM) curricula.

Since its inception, the 21st Century Fund has invested approximately \$9 million to launch and support nineteen programs.

Over its twelve-year history, BHS21 has demonstrated a remarkably consistent and successful track record. We developed nineteen programs; eight have been fully absorbed into the school system's budget; and another five are currently being funded. A number of these programs – such as *The BHS Tutorial*, *Teachers Mentoring Teachers*, and *The African-American Latino Scholars Program* – are regional and national models.

In the **November, 2010, 25th anniversary edition of the *Harvard Education Letter***, Harvard professor Jal Mehta writes a provocative article criticizing the century-old paradigm of school reform. Mehta writes, "The usual way to think about these elements is that university researchers will conduct research on good practices and turn their findings over to policymakers; policymakers will enact laws and regulations to achieve change at scale; and teachers and schools will implement these policies to achieve better outcomes." Mehta continues, "I've come to think that this implementation chain is fundamentally flawed at every link." Later in the article, in a section sub-headed, "Putting Practice First," Mehta writes,

After a century of meager results, we are now seeing increasing efforts to revisit these assumptions. ... Some leading schools and districts are beginning to develop funds for which faculty can apply to work collectively on problems of practice. At Brookline (Mass.) High School, for example, the 21st Century Fund provides funding for pilot programs or initiatives. (The more successful of these initiatives are then eligible for ongoing district funding.)

Mehta concludes, "What we want in the long run is a spiral that goes the other direction—where we make schools attractive places to work for talented and thoughtful people, whom we trust to drive improvements in practice, which leads to success of students, which in turn leads to more trust and less control."

Brookline High School is a living example of Mehta's ideal. We are a school-based engine of education reform. We embody Mehta's new pyramid of school reform; we are driven by reflective practice at the schoolhouse.

Courses and programs that have been launched & supported by the 21st Century Fund are designated in this catalogue by the 21st Century Fund logo:



CE9100 BHS School Store & Cafe Laboratory

This laboratory, one of the student based enterprises at Brookline High School, focuses on the operation of a small entrepreneurial business and how it develops and operates. Students are involved in all aspects of operating a small business including: management, merchandising, customer service, bookkeeping, product design, inventory control, product ordering, cash management, marketing and maintenance of the store fixtures and equipment. This cooperative work experience may be taken by students who have completed or who are taking concurrently Introduction to Business Management, World of Money, or Business, Finance and Information Technology. Students who have had practical experience in any aspect of the marketing and merchandising field may sign up for this course with the approval of the instructor. Credits are pro-rated based upon the number of periods the student is enrolled.

Level: N

Grade: 9-12

Prerequisite: Permission of Instructor and Curriculum Coordinator

Credit: .5

CE4100 Computer Science Engineering/ Exploring Computer Science

This is a survey course which introduces students to a variety of areas in computer science through classroom discussions, demonstrations, and hands-on activities. Topics include computer architecture, networking, software (application and system), programming languages and related career exploration. Ethical issues such as copyrights and fair use, current trends, and responsible use of computers in society will be discussed. Multimedia technologies such as 3D graphics, DVD/CD-RW, surround sound, web animation and streaming will be explored.

Level: N

Grade: 9-12

Credit: .5

CE4200 Computer Programming in Visual Basic

BASIC is the language used with most microcomputers. This is a hands-on class in which you will learn to write, document, debug, and run BASIC programs on the Macintosh and/or PC. Topics include graphic and non-graphic applications using subroutines, inputs, conditionals, and different loop structures. A structured approach will be emphasized.

Level: N

Grade: 9-12

Prerequisite: Computer Science I

Credit: .5

CE4600 Computer Programming In C++

This course is comparable to a freshman college course in computer programming. The purpose of this course is to teach the student how to write software using generic programming concepts and categories. Translating these concepts into practical software technology is the challenge of this course. A case study method will be utilized. C++ is the language of instruction. Students will analyze problems and will participate in the design, implementation, and testing of software. The prerequisites listed below may be waived with permission of instructor and curriculum coordinator.

Level: N

Grade: 10-12

Prerequisite: Computer Science I, a programming language, and Math 2H

Credit: .5

CE4700 Advanced Placement Computer Science/Computer Science Principles

This course follows the AB Level College Entrance Examination Board AP Computer Science course outline. Students will learn how to write logically structured, well documented programs with an emphasis on programming methodology, data structures and algorithms. Students will develop abstract data types from stacks, queues, linked lists and trees. Various algorithms will be implemented, including search strategies, sorting techniques and numerical approximations. Applications programs will be written for text processing, simulations, data analysis, systems software, and games and puzzles. Students will be expected to spend a minimum of 45 minutes a day outside of class to complete assignments. A home computer is a must for this course.

Level: AP

Grade: 11-12

Prerequisite: Computer Programming in C++ or Java and Math 4 H or permission of instructor and Curr. Coord. Credit: 1



CE4800 Computer Programming in Java

Java is a powerful, modern computer programming language especially suited to take advantage of networks and the Web. It enables developers to write software that will run, unaltered, on Windows, Linux, Macintosh, and several other platforms. This course will build on the student's previous knowledge of programming. It will review the basics, and then move quickly into the concepts of object-oriented programming. Modern design methods, such as UML and CRC cards, will be covered. The software creation process of design, coding, building, and testing will be a focal point. Our programs will run either as stand alone programs or as applets running within a browser.

Level: N

Grade: 10-12

Prerequisite: A programming language or permission of instructor and Curr. Coor.

Credit: .5

CE4900 Web Site Design

This course offers an introduction to the exciting field of website design. By first learning HTML coding basics, students are prepared to master common web design tools such as the Adobe Suite, DreamWeaver, Fireworks, Photoshop, etc. Students also learn the basics of JavaScript which permits the addition of many interesting functions to a web page. By learning standard principles of documentation, students ensure that their work can be passed on with confidence to others who might help maintain the web sites they have begun. This enables students in this course to take on projects of an internship nature. The prerequisites listed below may be waived with the permission of instructor and curriculum coordinator if student passes operating system, file management and word processing basics pretest.

Level: N

Grade: 9-12

Prerequisite: Advanced Computer Application or Computer Science I or permission of Instructor and Curr. Coor.

Credit: .5

CE4910 Web Site Management

This second semester course will be a sequel to WEB SITE DESIGN. Students will learn ongoing management of web sites with emphasis on correct forms of documentation for site longevity and security. Students will continue learning about JavaScript applications. Additional instruction in Adobe Suite will include Flash animation for the web, and ColdFusion database driven web site applications. On-site business and/or school related internships encouraged.

Level: N

Grade: 10-12

Prerequisite: Web Site Design (Spring only)

Credit: .5

MEDICAL CAREERS/HUMAN DEVELOPMENT COURSES

CE5200 Early Childhood Theory and Observation

This course was developed in collaboration with the Child Study Center to focus on the process of learning for preschoolers. The course will relate child development to appropriate classroom practice. Students will do weekly guided observations in the Child Study Center with an emphasis on the design of the physical environment; the role of play areas in the preschool curriculum; understanding behavior; and the roles of the early childhood team (teachers, social worker, physical, occupational, speech and language therapists). Goals and strategies to promote growth in cognitive, physical, social and emotional development will be explored.

Level: N

Grade: 10-12

Credit: .5

CE5600 Early Childhood Curriculum

The course enables students to acquire knowledge and skills necessary for planning inclusive and developmentally appropriate curriculum for young children. The class meetings will include lectures, films, and hands-on workshops focusing on a wide range of early literacy, social studies, art. Students will have weekly observations and participation in a pre-school setting. Theories about Child Development will be applied, children's learning styles, special needs and multiple intelligences will be addressed. *Students who successfully complete this course will be moving towards an EEC, (Early Education and Care) certificate.*

Level: N

Grade 9-12

Prerequisite: Early Childhood Theory & Observation

Credit: .5



FP5000 International Baking

This course focuses on the art of fine baking, featuring world famous specialties such as breads, Baklava, fruit tarts, cheese cakes, Danish pastries, torte and strudels, etc.

Level: N

Grade: 9-12

Credit: .5

FP3000 American Regional Cuisine

This course ventures into the many wonders of American Cookery from classical “Nouvelle Cuisine” of California and New York City, the hearty, robust flavors of Middle America, the “Rustic Creole” traditions of Louisiana to the home-style goodness of our own New England. This course will include appetizers, soups, salads, entrees, and desserts of each region.

Level: N

Grade: 9-12

Credit: .5

FP4000 Foods of Provincial France

This course is designed to introduce the student to the foods of Provincial France. This challenging course will incorporate various customs, cooking techniques, equipment and ingredients that are associated with the main regions of France. Students will be able to prepare various appetizers, soups, salads, entrees` and desserts of the French Provinces.

Level: N

Grade: 9-12

Credit: .5

ENGINEERING TECHNOLOGY PATHWAYS COURSES

TE4501 Engineering The Future I

Engineering the Future I is a semester long, **hands-on project based courses** that will introduce students to the skills and knowledge necessary to understand what engineering is and what engineers do. Projects are divided up into individual tasks and will include those that require group planning, research, design, prototype building, testing, evaluation and redesign. Students who take this course at BHS will be exposed to engineering and technology which will help them begin to make informed decisions regarding careers in various fields of engineering.

Level: N

Grade: 9-11

Credit: .5

TE4502 Engineering the Future II

Engineering the Future II is a semester long, **hands-on project based course** that continues building on the skills and knowledge taught in Engineering the Future I. Projects are divided up into individual tasks and will include those that require group planning, research, design, prototype building, testing, evaluation and redesign. Students who take this course at BHS will be exposed to engineering and technology which will help them begin to make informed decisions regarding careers in various fields of engineering.

Level: N

Grade: 9-11

Prerequisite: Engineering the Future I

Credit: .5

TE5530 Engineering By Design

Engineering by Design is a year-long, project-based course that will expose students to the fundamentals of engineering, and the design and fabrication process. Projects will be interdisciplinary in nature and will draw from the fields of Biomedical, Chemical, Electrical, Civil, Environmental, Mechanical, and Materials Science Engineering. Students will develop skills in research, modeling, project management, construction, programming, testing, and marketing. Teams of students will collaborate on projects, taking their ideas from abstraction, to working prototypes, to a finished product for a specific audience. This course is designed for a broad spectrum of students who have fulfilled their science requirements and have a solid math background (i.e., algebra / trigonometry). This capstone senior level course enables students to apply their creative talents and their prior science knowledge to practical problem solving.

Level: H

Grade: 12

Prerequisites: Physics I, Chemistry I, Biology I

Credit: 1



Integrated Construction Technology

The Integrated Construction Education program offers a wide range of technology options that are designed to meet the interests and abilities of all students. Students are encouraged to enroll in classes for a variety of educational and career-oriented purposes including:

- Gaining a better understanding of the mechanical things we use every day.
- Expanding your college bound high school schedule to include practical applications in the areas of science, engineering, and mathematics.
- Learning entry level employment competencies.
- Learning technical life skills.
- Through a series of classroom lectures and hands-on shop experiences, students learn the practical skills of the field as well as the underlying technical theory. Emphasis is placed on maintaining a balance between skills development, craftsmanship, and knowledge of science, mathematics, systems, tools, theories and concepts. All students are expected to learn and conform to business/workplace standards and practices.

TE3200 Introduction to Technical Drawing and CAD (Computer Aided Design)

Students will be allowed to develop the skills and understanding necessary to work efficiently with computers drafting techniques, and materials. Instruction will be adjusted to student's capabilities and interests. Instruction will include concepts used to visual acuity, to read drawings, and to execute technical drawings of ones own.

Level: N

Grade: 9-12

Credit: .5

TE3300 Architectural Design and Drafting with CAD (Computer Aided Design)

This course involves the planning and drawing of a residential house design including floor, foundation, and elevation views. Computer Aided Drafting (CAD) will introduce the student to computer graphics that will reflect the latest CAD drafting techniques.

Level: N

Grade: 10-12

Prerequisite: Technical Drawing I or junior/senior status

Credit: .5

TE1001 Creative Woodworking 1

Creative Woodworking is taught in collaboration with the Art Department. Historical, traditional and contemporary examples of fine woodworking will be presented, studied and discussed. Emphasis is placed on project design and construction. A variety of design, technical, and craftsmanship skills are taught and utilized. Students will also learn the proper techniques of hand and power tool utilization. Students will design and construct their own projects (furniture, toys, containers, household items). Students will document their work in progress in order to augment their art/tech ed. portfolio.

Level: N

Grade 9-12

Credit: .5

TE1002 Creative Woodworking 2

Creative Woodworking 2 is a continuation of the skills learned in Creative Woodworking 1. Continued emphasis on the safe and effective use of hand and power tools used in the fabrication of both sculptural and functional wooden objects is presented to students through a series of increasingly complex projects of their own choosing and design. An increased level of craftsmanship and attention to detail is expected through the use of a more refined design and engineering process. The use of multi-view and isometric drawings as illustration tools is emphasized as part of that process. Students are exposed to a wide variety of techniques and processes such as laminating, woodturning, carving, bending, wood joinery and finishing. Among the project possibilities are cabinets, furniture, toys, containers, household items, and sculptural objects.

Level: N

Grade: 9-12

Credit: .5

Prerequisite: Creative Woodworking I



TE1003 Furniture Design and Construction

Furniture Design and Construction is an advanced woodworking class that allows for the investigation of furniture making through the study of historical, traditional and contemporary trends in woodworking and furniture design. Students with a solid foundation in the woodworking processes introduced in Creative Woodworking 1 and 2 will be expected to design and build a piece of furniture that is inspired by a particular technique, style, period or piece of furniture that they have researched and studied. A serious design process, including isometric, orthographic, and perspective drawings as well as scale models will be adhered to before any fabrication begins.

Level: N

Grade 9-12

Credit: .5

Prerequisite: Creative Woodworking I and 2

TE1500 Construction Engineering

This course is an in-depth study of construction technology as well as related occupations both business and trade. Students will establish a virtual company that will study: finance (business and real estate), legal assets of real estate transactions, planning and cost estimations of a construction project. Students are introduced to the following professions and trades: laborer, electrician, plumber, carpenter, plasterer, mason, tile and stone installer, insulation installer, h. V. A. C., paint and finisher, floor finisher, and structural engineer. The course will stress the cooperation and successful work competencies and habits necessary to plan, implement and complete a job of this scope. This course should be taken for two consecutive periods. Students who have less than eight periods available for this course may earn partial credit. Credits are pro-rated based upon the number of periods the student is enrolled.

Level: N

Periods per week: 8

Elective 11-12

Prerequisite: None

Credit: 2-3

TE1101 Automotive Technology 1

This course is designed as a laboratory in which students investigate and discover how the principles of science and mechanics are integrated into the area of automotive technology. This integrated lab will enable the students to work with the systems, tools, and materials in the area of hydraulics, pneumatics, electricity, and mechanical design. Emphasis will be placed on standards and conventions of successful behavior in the workplace as well as on basic functions of the automobile.

Activities will include hands-on service and repair of automotive components, extensive use of in-house student produced videos, major automotive repair and replacement procedures, and off-site visits to automotive repair facilities. Students will demonstrate that they have the competencies to manage many of the mechanical and technological systems which affect their everyday lives as well as learn skills leading to a career in the automotive field. This course leads to certification by the National Institute for Automotive Service Excellence (ASE) and post-secondary education programs in automotive repair.

Level: N

Grade: 9-12

Credit: .5

TE1102 Automotive Technology 2

This full year course is recommended for a student who has completed Automotive Technology I and wishes to continue in an intermediate course in the laboratory shop. The student will develop further knowledge and understanding of the use of tools and equipment. The course content will be organized into competency-based units of instruction established by the National Automotive Technicians Educational Foundation (NATEF).

Level: N

Grade: 10-12

Prerequisite: Automotive Technology I or permission of instructor

Credit: 1



VA5001 Ceramics I

Ceramics students form clay to create functional forms and sculptural power, while developing insights about beauty, and the journey of the personal creative process in one of mankind's earliest artistic undertakings. This class provides a first encounter with clay, construction skills, fundamentals of craftsmanship, and an investigation of improvisation in building and firing ceramic objects. Students complete a series of assignments to develop technical, perceptual, and inventive competence. The knowledge they derive from these assignments culminates in gifts they create for themselves and their loved ones. This course has a lab fee of forty dollars. Financial assistance is available.

Level: N

Elective 9-12

Credits .5

VA 9400 Comic Books 101

Comic Book101 students engage in a wonderful, unique form of storytelling that combines multiple framed words and pictures. Subject matter can be serious, humorous, autobiographical, or completely fantastic. Students learn the stages of comic book production using both traditional and computer assisted methods. Initially, students work with ink, paper, and transition to digital forms of comic book production. Work includes hand drawn thumbnails, model sheets, dummy pages, and analysis of the fundamental elements of sequential art. Students invent original characters and scripts that have personal relevance and engage in critiques and discussions to discover optimum visual solutions.

Level: N

Elective 9-12

Credits .5

VA9101/CE9101 Digital Design Studio I

Digital Arts Design Studio students create original compositions within computer programs to striking images. The graphic designs convey a message, evoke a feeling, persuade, or ask the viewer to look beyond what is visible. Students integrate text and imagery into seamless, finished artwork creating book illustrations, company logos, advertising campaigns, visual illusions, and typographic imagery. Utilizing the tools of Adobe Illustrator and Photoshop, the students are challenged to be original, inventive, while meeting the constraints of client oriented work; the challenges mirror the real world expectations for designers/illustrators. Ideas, execution, satisfaction of client requests, competence with tools, critiques, self reflections, and inventiveness are emphasized.

Level: N

Elective 9-12

Credits .5 (VA or CTE)

VA9310/CE9310 Digital Video Production I

Digital Video Production provides students with the skills necessary to produce original videos using state-of-the-art technology. These skills include scriptwriting, storyboarding, basic film techniques and post-production editing. Students will critique and analyze historical and contemporary examples of film and television, including commercials and their own original videos. Students work to create original work that is inventive and within the constraints/demands of clients. Student generated productions are viewed and critiqued by a group of peers to reflect on the response of an audience.

Level: N

Grade: 9-12

Credit: .5 (VA or CTE)

VA1001 Drawing I

Students train the eye, brain, and hand to work in concert, using keen observation to create forms or objects on a surface by means of lines. Students examine the methods for creating strong compositions that illustrate objects, space and portraiture. Students make use of any number of drawing instruments including graphite pencils, pen and ink, inked brushes, color pencils, crayons, charcoals, chalk, pastels, markers. Students with limited experience will develop confidence in their abilities and students with broader experience expand their skills through continued practice.

Level: N

Elective 9-12

Credits .5

VA9600/CE9600 Documentary Filmmaking

Explore the world and engage in the process of creating compelling and educational documentary films in the new Brookline High School/Brookline Access Television media facility. Students study different types of documentary techniques, subgenres of documentary, and the formal elements of documentary filmmaking. Utilizing the tools available to the filmmaker such as sound, image, special effects and pacing, students create an entertaining film while generating an awareness of world issues for the student and the viewer. Students research and discover meaningful topics for films, create proposals and treatments, find a unique voice, and assemble a film that keeps its viewers engaged. Filmmaking skills are applicable to class projects in other curriculum areas such as history, performing arts, science, and senior papers/projects. Teamwork, competent use of equipment, research methods, good communication skills, and professionalism are emphasized.

Level: N

Elective 9-12

Credits .5 (VA or CTE)



VA6001 Jewelry/Metals I

Jewelry students explore the rich possibilities intrinsic to metals, manipulating and shaping metal and related materials. Students create dramatic forms that demand attention as sculptural objects or jewelry that adorn the wearer. Group and individual demonstrations will be given to introduce the safe and appropriate use of the metal studio, tools and materials. Students use observation skills, follow their intuition, tap into their imagination, and view outside sources to develop thoughtfully designed jewelry and small metal sculptures. Creating well-crafted work that reflects an understanding of and respect for the creative process, mirrors the artists' intentions, and resonates with the viewer are paramount objectives of this course. This course has a lab fee of forty dollars. Financial assistance is available.

Level: N Elective 9-12 Credits .5

VA2001 Painting I

Painting students create energy in purposeful strokes that express the emotional force of color, and a sense of space. Students in this class develop skill in utilizing a variety of wet media including tempera, watercolor, ink, gouache, and acrylic paints. Color has a deep and personal impact for the artist and the viewer. Students explore representational, abstract, and non-objective ways of working to express ideas. Exploration and experimentation with materials, journal work, group critiques, written self-reflection and exhibition of work for reflection are emphasized.

Level: N Elective 9-12 Credits .5

VA7001 Photography I

Photography students frame powerful images in camera and in printing capturing the world through the artist's personal point of view. Photo I students experience the full range of possibilities for working with photography. Beginning with a35 mm cameras, students develop film and use darkroom techniques to create black and white photography. Students print images in the traditional manner to gain a greater understanding of "painting with light".

Students switch to digital cameras and experience how technology has transformed this art form. . Students are challenged to consider all the elements of the frame; to include only what is necessary to turn a snapshot into a photograph. The course emphasizes composition, design, point of view, and student voice in the photography. Cameras are available for loan if necessary. Students are required to pay a lab fee of sixty dollars. Financial assistance is available

Level: N Elective 9-12 Credits .5

VA4001 Printmaking I

Students engaging in creating works of art on the flat surface of printing plates so the image can be recreated in great quantity. The images are transferable to paper with color, repetition, and applied layers. Prints can be made using found objects which are arranged, inked and printed in the same way as etched or engraved plates. Relief prints, intaglio prints, monoprints, and embossed prints. Students create mixed media prints using two or more printing processes. Combinations are endless, reflecting the creativity and skill of the artist. Students create imagery that reflects their interests, experiences, and understanding of the world around them.

Level: N Elective 9-12 Credits .5

VA3001 Sculpture I

Sculpture students transform materials from one thing into another; adding or removing parts, providing an armature to support materials, or assembling materials until the form makes people think about it in a completely new way. Students use a wide range of materials: paper, cardboard, wire, wood, plaster, plaster gauze, fabric, and found objects, work from observation, and their imagination, studying human, animal, and natural forms. Students work in a collaborative art studio, engaging in problem solving, exploration and reflection as they create a body of three-dimensional work. This class has a lab fee of twenty dollars. Financial assistance is available.

Level: N Elective 9-12 Credits .5

VA 9800/CE9800 Television Production 101

Television Production students experience real world television production in BATV studios, engaging in the full range of operations needed to create programs for viewing. Students focus on media production for television working collaboratively and learning the fundamental techniques of operating state - of - the art media production equipment. Emphasis is on teamwork, competent use of equipment, good communication skills, and professionalism. Students completing this course will be eligible to take future courses of Television Production, and Digital Video.

Level: N Elective 9-12 Credits .5 (VA or CTE)



LEVEL TWO COURSES

VA8201 Animation II

Students continue to depict art in motion in short films. Students create several short animations, each designed to focus on a particular challenge for animators. Students manipulate the program strengths to illustrate the elements of the assignments and highlight their personal styles as they create works that are more sophisticated. Competent use of software, strong compositions, original characters and story ideas, possible continuation of work created in Animation I, experimentation with new ideas, inventiveness and reflection are emphasized.

Level: N

Grade: 9-12

Prerequisite: Animation I

Credits .5

VA5101 Ceramics II

Ceramics students form clay to create functional forms and sculptural power, while developing insights about beauty, and the journey of the personal creative process in one of mankind's earliest artistic undertakings. Students build on learning and skills developed in Ceramics I. Students improve construction techniques, modeling, and wheel forming through exercises for understanding of proportion, gesture, and structure in basic form. The challenge of this course is to explore the theme of relationship in constructed form: proportions of part to whole, relating form to function, detail to idea, space to volume, and work within a series. To complete the course, students build a series of work based on a self-selected idea. This course has a lab fee of forty dollars. Financial assistance is available.

Level N

Grade: 9-12

Prerequisite: Ceramics I

Credits .5

VA1201 Drawing II

Drawing students continue to use keen observation of objects and space to create line, form, and space. Light, shadow, perspective, composition, line, form, and texture, are conveyed in both realistic renderings of the subjects and the artist perceptions and feelings about the image. Building on experiences in Drawing 1 students demonstrate strong composition, modeling of forms, linear perspective and working with the figure, convey ideas about the subjects beyond mere appearance, and develop a unique artistic signature. Journal work, group critics, self reflections, exhibition of work and competent use of tools are emphasized.

Level N

Grade: 9-12

Prerequisite: Drawing I

Credits .5

VA9201/CE9201 Digital Design Studio II

Digital Arts Design Studio II students create original compositions within the computer programs to create graphics that convey a message, evoke a feeling, persuade the viewer, or ask the viewer to look beyond what is visible. Students demonstrate competence and understanding of the dual purposes of the graphic artist through bold, eye catching illustrations, collages, advertisements, visual illusions, and typographic imagery. Students pursue the acquisition of new technical skills, inventiveness and a positive response from the intended audience; the challenges mirror the real world expectations for designers/illustrators. Competent use of software, originality, inventiveness, risk taking and reflection are emphasized.

Level: N

Grade: 10-12

Prerequisite: Digital Design Studio I

Credits .5 (VA or CTE)

VA7210 Digital Photography II

Students continue to explore how computer technology changes the way photographers and artists work with images. Students pursue acquisition of new techniques in the vast array of tools in the Photoshop software to illustrate strong use of the elements and principals of design in the images. Exploration, evaluation, and discussion of the implications of digital technology are emphasized as students build a portfolio of work. Group critiques, self reflection and exhibitions are avenues for feedback to the photographers.

Level: N

Grade: 9-12

Prerequisite: Photography I

Credit: .5



VA9320/CE9320 Digital Video Production II

Students continue to investigation of techniques, story ideas, creating scripts, scenes, music and appeal for an audience while filming, and editing digital videos. Students pursue individual productions as they incorporate new techniques and advance proficiency in creating compelling video. Students will conduct in-depth analyses of selected directors and their films. Class participation in brainstorming, critiques, and final viewing of the videos is used to provide feedback to the videographers.

Level: N

Grade: 9-12

Prerequisite: Digital Video Production I

Credits .5 (VA or CTE)

VA6101 Jewelry/Metals II

Jewelry students continue to explore the rich possibilities intrinsic to metals, engaging in the age old dilemma of manipulating and shaping metal and related materials Jewelry / Metals II students use observation skills, listen to and rely on their intuition, tap their imagination and view outside sources to develop thoughtfully designed jewelry and small metal sculptures. Students create work that demonstrates genuine understanding of the materials, strong manipulative skills, and more challenging combinations of processes. This course has a forty dollar lab fee. Financial assistance is available.

Level N

Grade: 9-12

Prerequisite: Jewelry/Metals I

Credits .5

VA2101 Painting II

Painting II students continue to develop strong expression and competence with the tools and materials to create compelling paintings that engage the viewer Students explore representational, abstract, and non-objective ways to express ideas and engage in critical analyze of works of art. Journal work and written self reflection are required components of this course. All students will participate in group critiques and have opportunity to exhibit their work in both the UAB and The Art Space gallery.

Level: N

Grade: 9-12

Prerequisite: Painting I

Credits .5

VA7101 Photography II

Photography students refine the skills introduced in Photography I. Students engage in artistic thinking; problem solving, exploring ideas, judging work critically and realistically and reflecting on their individual growth as a photographer. Students assemble a portfolio of strong images through regular shooting assignments exploring the visual elements, portraiture, landscape, and documentary photography. The power and use of photographic manipulation in modern society will be included. 35mm cameras are available for loan if necessary. Students are required to pay a lab fee of sixty dollars to cover the cost of the paper and film. Financial assistance is available.

Level: N

Grade: 10-12

Prerequisite: Photography I

Credits .5

VA4201 Printmaking II

Printmaking students create refined imagery for printing plates. Utilizing their previous experiences with the printmaking process, student focus their work on one or two printmaking processes. Students engage in an in depth exploration of the processes and use printmaking as a means for visually expressing the artist's ideas and perceptions. Emphasis is on personal work that demonstrates genuine understanding of the printmaking techniques, focused attention, persistent work habits, individual expression, and self-reflective learning.

Level: N

Grade: 10-12

Prerequisite: Printmaking I

Credits .5

VA3101 Sculpture II

Sculpture II students continue to transform materials from one thing into another by adding or removing parts, providing an armature to support materials, or assembling materials until the form makes people think about it in a completely new way. Students use a wide range of materials: paper, cardboard, wire, wood, plaster, plaster gauze, fabric, and found objects, work from observation, and their imagination, studying human, animal, and natural forms. Students work in a collaborative art studio, engaging in problem solving, exploration and reflection as they create a body of three-dimensional work. This class has a lab fee of twenty dollars. Financial assistance is available.

Level: N

Grade: 10-12

Prerequisite: Sculpture I

Credits .5



VA9900 Television Production 102

Television Production students continue to work in the BATV studios, engaging in the full range of operations needed to create programs for viewing. Students focus on media production for television working collaboratively while learning the fundamental techniques of operating state-of-the-art media production equipment. Emphasis is on teamwork, competent use of equipment, good communication skills, and professionalism.

Level: N

Grade: 9-12

Prerequisite: Television Production 101

Credits .5 (VA or CTE)

LEVEL THREE COURSES

VA9300 Advanced Drawing and Painting

Advanced Drawing and Painting students engage in focused investigations of personal ideas and questions. Students are challenged to be skillful, intuitive, imaginative, and critical thinkers as they create bodies of work for breadth in their portfolios. Students focus on developing sophisticated visual solutions to traditional design problems. Students consider the qualities inherent in compelling visual expressions, to create sophisticated abstract and representational compositions. Students investigate how artists generate ideas and determine the appropriate approach to solving challenges. Through brainstorming exercises, each student artist makes critical choices regarding subject, media, style, and execution. Students develop a portfolio suitable for college and scholarship applications and serves as the foundation for an AP level portfolio for students that continue their artistic studies and undertake the AP Studio Art Exam.

Level N

Periods per week: Four

Grade: 11-12

Prerequisite: Drawing 2 and Painting 2 or department approved equivalent

Credit: 1

VA9000 AP Studio Art: Drawing, 2D, 3D

AP Portfolio students engage in create a series of pieces that explore a theme, emerging from personal inquiries that challenges students to be skillful, intuitive, imaginative, and critical thinkers. They create a strong portfolio of work for submission to the College Board for the AP Studio Art Exam. The AP artist needs to be able to work independently, to step up and create personal challenges that answer their curiosity, to be a problem solver, and to seek critique for reflection. Students need to develop a theme or concept of personal interest, devising challenges and posing visual problems to be explored creating a body of work with depth and breadth. Emphasis is on developing artistic vision, maintaining high personal expectations, meeting deadlines, and preparing work for public viewing. Weekly journal work, written self-reflection, group critique, and formal artistic statements are required components of this course. All AP students prepare a slide portfolio of work that meets the expectations for the College Board's AP Studio Art Portfolio Exam in one of the three portfolio areas: Drawing, 2D Design or 3D Design.

Level: AP

Grade: 11-12

Credit: 1

Prerequisite: Advanced Drawing and Painting or three years of work within Ceramics, Sculpture, Jewelry/Metals, Photography, or Graphic Design.

VA5200 Ceramics III

Ceramics students create functional forms and they explore sculptural power, while developing insights about beauty, and the journey of the personal creative process in one of mankind's earliest artistic undertakings. Students in Ceramics III expand skills, advance imaginative vision, and generating new ideas. Each student artist is asked to make critical choices regarding subject, media, style, and execution. Students will work in a mixed level grouping and engage in critiques, class discussions and exhibit work regularly.

Level: N

Grade: 10-12

Prerequisite: Ceramic I, II

Credits: .5



VA7300 Photography III

Photography III students focus on creating sophisticated, compelling images that illustrate their growing command of the tools and materials available to the photographer. Students are able to work in the analog and digital photography labs to construct strong portfolios of images that include landscapes, portraiture, documentary and invented images. Students engage in artistic thinking; problem solving, exploring ideas, judging work critically and realistically and reflecting on their individual growth as a photographer. Students will work in a mixed level grouping and engage in critiques, class discussions and exhibit work regularly. Cameras are available for loan if necessary. This class has a lab fee of sixty dollars. Financial assistance is available.

Level: N

Grade: 10-12

Prerequisite: Photography I, II

Credit .5

VA5300 Ceramics IV

Ceramics students form clay to create functional forms and sculptural power, while developing insights about beauty, and the journey of the personal creative process in one of mankind's earliest artistic undertakings. Students in Ceramics IV work on the development of a theme or concept of personal interest -- devising challenges and posing visual problems to be explored. They pursue this idea through a series or a body of works. Emphasis is placed on developing artistic vision, maintaining high personal expectations and preparing work for public viewing. Students will work in a mixed level grouping and engage in critiques, class discussions and exhibit work regularly. This class has a lab fee of forty dollars.

Level: N

Grades 10-12

Prerequisite: Ceramic I, II, III

Credits: .5

VA9600 Independent Study

Independent study requires a contract with the appropriate visual arts teacher. Students need to present a written proposal for their independent inquiry that will result in body of work prepared for exhibition. Credit determined by length of contract.

Prerequisite: Previous Visual Arts Course work and the permission of the instructor

Elective: 10-12

Credit: Minimum .5 Maximum 1

SO4700/VA4700 Film as History/History as Film (Course Pending Approval of School Committee)

The documentary filmmaker and the historian both make choices: What true story do I tell, and how do I tell it? In this Social Studies/Visual Arts collaborative course, students will explore how historians and documentary filmmakers make these choices, and therefore how history is documented in both written and visual form. Students will in develop their critical thinking skills as collaborative learners, approaching the task of documenting and communicating human reality from multiple disciplines, perspectives and understandings. Students will read and view accounts of historical events, watch classics in the canon of documentary filmmaking, and, as a culminating project, produce their own historical documentary. Decision-making and ethics will be a central theme in the course.

Periods per week: 4

Credits: 1 (Visual Art or Social Studies)

Prerequisite: None

Level: N

SC6100/VA6100 Drawing for Understanding in Field Science

In this cross-disciplinary course, students will build scientific knowledge about their immediate environment through observational drawing and field research. Using the principles of visual design and the scientific investigation, students will communicate their scientific knowledge to others through visually powerful images and forms. From the pre-historic drawings of bison in the caves of Lascaux, France to the anatomical studies of the 14th century Flemish physician, Andreas Vesalius to the incredible journals of Leonardo Da Vinci, people have used drawing to understand the natural world and to communicate that understanding to others.

In this course we will look at the natural world – the flora, fauna, history, and systems at play in real time field experiences. Student will engage in active discovery through observational drawing as the principal technique for recording data. Direct observation and construction of knowledge lies at the heart of what both scientists and artists do. Field trips and talks by visiting artists/scientists will supplement our studies. Students will build knowledge together through observation, drawing, discovery, discussion, and design. This course may be taken for .5 credit in the Visual Arts Department.

Level: N

Grade: 9-12

Credit: .5 (SC or VA)



the brookline high school 21st century fund