



**Lowell High School**

**2017 - 2018**

**Course Catalog**



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# LOWELL HIGH SCHOOL

50 Fr. Morissette Boulevard  
Lowell, Massachusetts 01852



## MISSION STATEMENT

Commitment to excellence in everything we do: academics, activities, and citizenship.

Lowell High School provides a secure and cooperative environment where the emphasis is on mutual respect, curiosity, the free exchange of ideas, and the appreciation of education both as a process and a means of betterment.

We are a community...

- That values a curriculum incorporating the best practices of both traditional and contemporary instruction.
- That creates and supports an atmosphere promoting high expectations for student achievement.
- That strives to meet the needs of a variety of ethnic and language backgrounds, career interests, and learning capabilities and styles by providing a broad range of programmatic offerings.
- That believes student accomplishment is a shared responsibility of students, parents, staff, administration, school committee, and community.
- That provides all students the curriculum to meet school and state graduation requirements, and assesses learning continuously in a variety of ways including mandatory state testing.

# ADMINISTRATION

Brian J. Martin .....	Head of School
Amy McLeod .....	Director of Curriculum and Instruction
David Robinson .....	Coordinator of Student Support Services
Roxane Howe.....	Discipline & Operations Specialist
James DeProfio .....	Athletic Director
Jill Lang .....	Director of Freshman Academy
Deidre Haley .....	House Dean, B-House
Maria Vejar .....	House Dean, C-House
Timothy O’Keefe .....	House Dean, D-House
David Slattery .....	House Dean, E-House

# DEPARTMENT HEADS

Diane Chandonnet.....	Special Education
Sharon Clark .....	Fine Arts
Lt Col. Eileen Ironfield .....	Aerospace Science (Air Force Junior ROTC)
James DeProfio .....	Physical Education
Robert DeLossa.....	Social Studies
Tracy Estrella.....	Mathematics
Stephen Gervais, Jr. ....	English Language Learners, World Languages
Roxane Howe.....	Business, Culinary & Foods
Suzanne Keefe .....	English
Roger Morneau .....	Science, Health

# GUIDANCE & HOUSE SERVICES

## FRESHMAN ACADEMY ROOM 800

DIRECTOR	978 275-6301
COUNSELORS	978 440-3707
SCHEDULER	978 441-3707
CLERK	978 441-3704

### B-HOUSE ROOM 120

HOUSE DEAN	978 446-7333
COUNSELOR A-L	978 937-7672
COUNSELOR M-Z	978 937-7471
SCHEDULER	978 446-7324
HOUSE CLERK	978 937-8906

### C-HOUSE ROOM 512

HOUSE DEAN	978 937-8908
COUNSELOR A-L	978-441-3723
COUNSELOR M-Z	978 446-7338
SCHEDULER	978 441-7348
HOUSE CLERK	978 937-8907

### D-HOUSE ROOM 640

HOUSE DEAN	978 446-7333
COUNSELOR A-L	978 937-7672
COUNSELOR M-Z	978 937-7471
SCHEDULER	978 446-7324
HOUSE CLERK	978 937-8906

### E-HOUSE ROOM 301

HOUSE DEAN	978 937-8908
COUNSELOR A-L	978 441-3723
COUNSELOR M-Z	978 446-7338
SCHEDULER	978 441-7348
HOUSE CLERK	978 937-8907

# INTRODUCTION

The information in this booklet is designed to familiarize students and parents with the school courses and programs, scholastic requirements, policies, facilities, personnel and general information. We hope this catalog will answer questions you have regarding these areas and will provide you with sufficient information to make wise decisions regarding courses, programs, and opportunities. We urge you to carefully read the information under “Scholastic Progress and Course Selection”, as it specifies the requirements for scholastic progress and graduation.

If you have any questions or concerns, please feel free to contact an administrator. We encourage you to inform us of any special situations or circumstances, and come to us for assistance when you need it. We cannot help with problems unless we are aware of them. We hope you have a pleasant and rewarding school year.

## ACCREDITATION STATEMENT

The New England Association of Schools and Colleges (NEASC) is the accreditation agency for Lowell High School. NEASC is a non-governmental, nationally recognized organization whose affiliated institutions include elementary schools through collegiate institutions.

Accreditation of an institution by the New England Association indicates that it meets or exceeds criteria for the assessment of institutional quality periodically applied through a peer group process. An accredited school is one which has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation.

Accreditation by the New England Association is not partial but applies to the institution as a whole. As such, it is not a guarantee of the quality of every course or program offered, or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend and graduate from the institution.

Inquiries regarding the status of an institution’s accreditation by the New England Association should be directed to the administrative staff of the school. Individuals may also contact the Association directly:

NEW ENGLAND ASSOCIATION OF SCHOOLS AND COLLEGES  
209 BURLINGTON ROAD  
BEDFORD, MA 01730-1433  
(781) 271- 0022

# COURSE INFORMATION

## COURSE LEVELS

These are general criteria for leveling used by each department. Levels differ in coverage and intensity in order to meet the ability, achievement, and needs of the student.

There are five different levels of courses at Lowell High School:

- A - Advanced
- HH - High Honors
- H – Honors
- C – College
- Non-Weighted

The level at which a course is offered will affect the class rank achieved by the student, but not placement on the Honor Roll. The student is expected to participate in course work at the highest level of her/his ability. It is essential for you to read about each course in the “Course Description” in each academic department listing of this catalog so that you understand not only what a course is all about, but also what levels are offered for each course.

Advanced (Advanced Placement and Dual Enrollment) level courses are the most intense academic level. They are the maximum challenge for the most intellectually curious students.

High Honor level courses are the highest level in intellectual challenge when Advanced Placement is not available. Courses in this level are very demanding, competitive, and specifically designed for the highly motivated student who has an outstanding ability and anticipates attendance at a four-year college. Courses are designed to prepare the student for future involvement in college studies.

Honors level courses present intellectual challenges and require strong student performance. Courses are designed to prepare students for success at four-year colleges and universities. Students must be well motivated and be prepared for the demands of the curriculum in each discipline.

College level courses require a moderate to extensive intellectual development and outside preparation by the student. These courses are designed to prepare the student to succeed in four-year colleges and two-year colleges. Reading levels will be above the nationally normed median. Students are assumed to be self-motivated.

Non-Weighted courses are for students of all ability levels. These courses are heterogeneously grouped.



# PREREQUISITES FOR CONTINUING COURSES

The following guidelines have been adopted by all departments and should be utilized by students when selecting continuing courses.

Cumulative Grade Requirements to Select the Following Year of a Continuing Course:

- COLLEGE to HONORS 85
- HONORS to HONORS 70
- HONORS to HIGH HONORS 90
- HONORS to AP 95
- HIGH HONORS to AP 90
- AP to AP 80

Note: A passing grade is needed to continue second semester of a continuous course.

## GUIDELINES FOR SELECTING COURSES

Planning an educational program is an ongoing process and should involve as many people as possible, including the student, parents, teachers, and guidance counselors.

1. Meet the minimum requirements to be promoted to each grade level. Obtain at least the minimum credits needed to graduate. Remember that students must earn twenty (20) credits in the senior year.
2. Fulfill the requirements of an Educational Proficiency Plan (EPP) if you are in the Needs Improvement scaled score between 220 and 239 on the English Language Arts and Mathematics grade 10 MCAS tests.
3. Consider your future plans. Select courses that are related to the field you may wish to pursue. You will want to select courses that meet the requirements of a variety of colleges or universities you may wish to attend. Work with your teachers to fill out your course selection chart.

4. Gather Information. A major part of the process of course selection involves the gathering of information. Classroom teachers and guidance counselors are available resources at this stage.

Choose courses that will accomplish the following:

- a. Satisfy credit requirements.
  - b. Build up academic skills needed for future plans.
  - c. Explore new, unfamiliar areas and/or develop, in depth, an area of particular interest.
  - d. Develop a marketable skill. A marketable skill is particularly essential if you plan to work directly after graduation.
  - e. Meet the College Admission Requirements outlined on the next page.
5. Consider your interests and abilities.
  6. Explore the possibility of enrolling in an pathway.
  7. Discuss your course selection with your parents, teachers, and counselor.
  8. Read the Course of Studies Catalog carefully and listen attentively to scheduling information provided by the Guidance Department.
  9. Review your transcript periodically
  10. Be aware of course prerequisites, and strongly consider teacher recommendations.
  11. Remember that the in-depth study of a particular subject is valuable. Four years of a subject are usually better than three, and three are better than two.
  12. Be sure that you have a strong, challenging program every year to be ready to cope with college or the world of work.

The classroom teacher has in-depth knowledge of the content of various courses taught within her/his department. In addition she/he is usually aware of the level of expectation within each course. Knowing you as a student and the kind of work of which you are capable, your teacher can make valid recommendations as to which courses to take within the department.

The guidance counselor has a broad overview of the entire curriculum. Counselors have a sense of the student's performance and ability level. Your counselor is knowledgeable of the courses necessary to fulfill graduation and college requirements. Your guidance counselor also is able to provide advice about the kind of program and courses, which will be helpful as you prepare yourself to pursue post-high school plans. A student/parent conference can be arranged by contacting the guidance counselor. Please understand that not all student choices can be accommodated due to scheduling constraints and school placement policies.

# DEPARTMENT COURSES

## ENGLISH

The Lowell High School English Department is committed to supporting and encouraging students to become independent, life-long learners. All English courses are designed to build skills in effective reading, writing, speaking and listening. Through a sequential program of core courses, students are supported to read critically from a wide range of literary and informational texts, write effectively for a variety of audiences and purposes, and speak effectively in informal and formal situations. We recognize that mastering these complex communication skills is essential for successfully meeting the challenges of the 21st Century.

In accordance with state mandates, a Lowell High School student must earn 20 credits in sequential, core English courses to qualify for a diploma. The Education Reform Law also requires students to pass the state's Grade 10 MCAS tests as a condition for receiving a high school diploma. English Language Arts is one of the mandated MCAS areas. Courses offered in the English Department are aligned with and fulfill the content requirements of the Massachusetts State Curriculum Frameworks.

Summer Reading Program: Participation in Lowell High School's summer reading program is required for all students. Requirements vary according to course and level. Information about summer reading can be found on the LHS website.

### ENGLISH CORE COURSES

0111/0112	Explorations In English - College	9 (FA)	2.5/2.5
0131/0132	English 1 - College	9 (FA)	2.5/2.5
0141/0142	English 1 - Honors	9 (FA)	2.5/2.5
0151/0152	English 1- High Honors	9 (FA)	2.5/2.5
0121/0122	English 1 - College	9R, 10, 11, 12	2.5/2.5
0231/0232	English 2 - College	10	2.5/2.5
0241/0242	English 2 - Honors	10	2.5/2.5
0251/0252	English 2 - High Honors	10	2.5/2.5
0331/0332	English 3 - College	11	2.5/2.5
0341/0342	English 3 - Honors	11	2.5/2.5
0351/0352	English 3 - American Studies - High Honors	11	2.5/2.5
0431/0432	English 4 - College	12	2.5/2.5
0441/0442	English 4 - Honors	12	2.5/2.5
0461/0462	English 4 AP - Advanced	12	2.5/2.5
0463/0464	English Composition - (DE-MCC) - Advanced	12	2.5/2.5
0466	Reading and Writing in the 21 <sup>st</sup> Century - College	11, 12	2.5
0531/0532	Creative Writing - College	11, 12	2.5/2.5
0533/0534	Creative Writing - Honors	11, 12	2.5/2.5
0537	Expository Writing - College	12	2.5
0538	Expository Writing - Honors	11, 12	2.5
0521	Other Worlds, Whodunnits, and Westerns - College	12	2.5
0522	Other Worlds, Whodunnits and Westerns - Honors	12	2.5

0523	Public Speaking, Persuasion, and Presentations - College	12	2.5
0524	Public Speaking, Persuasion, and Presentations - Honors	12	2.5
0525	Short Fiction and Poetry - College	12	2.5
0526	Short Fiction and Poetry - Honors	12	2.5
0527	Sports Literature and Writing - College	12	2.5
0528	Sports Literature and Writing - Honors	12	2.5
0541	Race and Ethnicity in Literature - College	12	2.5
0542	Race and Ethnicity in Literature - Honors	12	2.5
0543	Literature of The Holocaust A - College	12	2.5
0545	Literature of The Holocaust B - College	12	2.5
0544	Literature of The Holocaust A - Honors	12	2.5
0546	Literature of The Holocaust B - Honors	12	2.5

### **ENGLISH SUPPORT & ELECTIVE COURSES**

0023/0024	Balanced Literacy (9) - College	9 (FA)	2.5/2.5
0025/0026	Balanced Literacy (10) - College	10	2.5/2.5
0051/0052	MCAS English Tutorial - Non-Weighted	11, 12	2.5/2.5
0061	SAT Critical Reading/Writing Prep - Non-Weighted	11	2.5
0062	SAT Critical Reading/Writing Prep - Non-Weighted	12	2.5
0466	Reading and Writing in the 21 <sup>st</sup> Century- College	11, 12	2.5
0531/0532	Creative Writing - College	11, 12	2.5/2.5
0533/0534	Creative Writing- Honors	11, 12	2.5/2.5
0537	Expository Writing - College	11, 12	2.5
0538	Expository Writing - Honors	11, 12	2.5
0521	Other Worlds, Whodunnits, and Westerns- College	11, 12	2.5
0522	Other Worlds, Whodunnits, and Westerns - Honors	11, 12	2.5
0523	Public Speaking, Persuasion, and Presentations - College	11, 12	2.5
0524	Public Speaking, Persuasion, and Presentations - Honors	11, 12	2.5
0525	Short Fiction and Poetry - College	11, 12	2.5
0526	Short Fiction and Poetry - Honors	11, 12	2.5
0527	Sports Literature and Writing- College	11, 12	2.5
0528	Sports Literature and Writing- Honors	11, 12	2.5
0541	Race and Ethnicity and The Written Word - College	11, 12	2.5
0542	Race and Ethnicity and The Written Word - Honors	11, 12	2.5
0543	Literature of the Holocaust- College	11, 12	2.5
0544	Literature of the Holocaust- Honors	11, 12	2.5
0951/0952	Latin Lyceum Senior Seminar- Honors	12	2.5
0953/0954	Senior Seminar - Honors	12	2.5
9201/9202	Freshman Seminar	9 (FA)	2.5/2.5
9205/9206	Latin Lyceum Seminar - Non-Weighted	9 (FA)	2.5/2.5
9401/9402	Upward Bound - Non-Weighted	9, 10, 11	2.5/2.5



**0151/0152 ENGLISH 1 - High Honors****9****2.5/2.5 Cr.**

English 1 - High Honors is for students who have demonstrated exceptional ability and achievement in reading and writing during middle school and who are motivated to work in an accelerated program. Students will engage in a rigorous examination of four major genres of literature: the short story, the novel, poetry and drama. Students will be expected to use the writing process to produce well-developed analytical essays, read closely, actively and interpretively, engage meaningfully in small group work and class discussions, and conduct an extensive research project. The overall goal of this course is to develop higher-level thinking skills that characterize independent learners. Completion of the summer reading program is required. *(Co-enrollment at the same level with 4181/4182 World History-High Honors)*  
***PREREQUISITE: Students wishing to be considered for high honors English 1 must earn a score of 260 or better (Advanced) on the 7th grade ELA MCAS and maintain a grade of 90 or better in their 8th grade ELA course. Students who have not taken the MCAS exam must score 90 or better in ELA on their most recent standardized test. Students who do not meet these prerequisites must obtain Department Head approval.***

**0121/0122 ENGLISH 1 - College****9R, 10, 11, 12 2.5/2.5 Cr.**

English 1 - College is for repeating Freshman or upper class students who need to fulfill credit for English 1. The course emphasizes strengthening literacy skills in both reading and writing. Four major themes are examined during this course: identity, goals/dreams, decisions, and journeys. Each of these themes is explored through a variety literature that includes short stories, poetry, drama, the novel and works of non-fiction. Emphasis is placed on the writing process, including essay writing, grammar, creative writing and research skills. Completion of the Grade 10 summer reading program is required.

**0231/0232 ENGLISH 2 - College****10****2.5/2.5 Cr.**

English 2 - College continues to focus on strengthening essential literacy skills. Emphasis is placed on reading comprehension, literary analysis and the writing process. Readings include various genres unified by theme and include essays, poems, short stories, plays and novels. Through the close study of these texts and the practice of the writing process, students will develop increasingly sophisticated tools for constructing and conveying meaning. Students complete a required research-based project, through which they learn to generate their own thesis statements, gather, evaluate and organize evidence, and revise multiple drafts of their work. This course places a strong emphasis on MCAS preparation, as students take this exam for the first time in the spring of their sophomore year. Explicit instruction in various test taking strategies, including multiple choice and open response and long composition writing, is included in the scope of this course. Completion of the summer reading program is required.



**0341/0342 ENGLISH 3 - Honors****11****2.5/2.5 Cr.**

English 3 - Honors is for students who have demonstrated strong motivation, ability and achievement in English 2. English 3 - Honors introduces the student to American Literature by tracing the development of cultural concepts and patterns in writers from the Colonial Period forward. This course explores the cultural realities, literary movements and writers' techniques that shaped the emerging American identity. There is strong emphasis on enhancing the skills of critical analysis, both oral and written, and tracing the evolution of concepts in American writing. Students are expected to contribute to the oral dialogue of the class, write original analytical and creative papers, and to read extensively outside of class. Students will complete a research-based project that demonstrates effective evaluation of sources, careful analysis of information, clear topic development and increasingly sophisticated use of diction and style. ***PREREQUISITE: Successful completion of English 2 - Honors with a minimum grade of 70 or successful completion of English 2 - College with a minimum grade of 85 and completion of the summer reading program is required.***

**0351/0352 ENGLISH 3 - American Studies - High Honors****11****2.5/2.5 Cr.**

English 3 - American Studies - High Honors is for self-motivated students who have demonstrated exceptional aptitude, interest and achievement in reading and writing. Students are exposed to a range of major American writers, movements and literary works. Considerable attention is paid to how these various perspectives enrich student understanding of the terms "American Identity" and "The American Experience." Through intensive study of major literary works, students will consider each writer's purpose, audience, rhetorical strategies and tone, examining how authors employ the elements of language to achieve their intended purposes. Students practice writing in a variety of modes, including narration, analysis and argumentation. A strong performance during Semester 1 offers students an advantage when applying to the AP English Literature Course for senior year. ***PREREQUISITES: Successful completion of English 2 - Honors with a minimum grade of 90 or English 2 - High Honors with a minimum grade of 70, and the recommendation of the sophomore English teacher. Students who do not meet these prerequisites must obtain Department Head approval. Enrollment is contingent on the completion of an extensive reading and writing project over the summer; this work is due at the first class meeting of the year. Failure to complete the summer assignment will result in removal from the course.***





**0461/0462 ENGLISH 4 AP - Advanced****12****2.5/2.5 Cr.**

English 4 AP is a strenuous course of study designed to give self-motivated students a college experience in the areas of literature and composition prior to their graduation from high school. This course is demanding in the amount and variety of assigned reading and the expectation for close literary analysis. Through intensive study of major literary works, students sharpen their ability to think critically and communicate effectively. Writing assignments emphasize the precise use of language and the effective selection and organization of materials for critical responses. For the qualified student, this course offers the unique advantage of allowing him or her to apply a successful grade on the Advanced Placement Test of the College Entrance Board toward the freshman English requirement at most colleges. The Advanced Placement Test, given in May of the senior year, is required of every student in 0461, and a fee is charged for the test. The student selecting this course must submit a writing sample to the instructor for approval.

***PREREQUISITES: Successful completion of English 3 - American Studies with a minimum grade of 80 or successful completion of English 3 - Honors with a minimum grade of 90, the recommendation of the junior English teacher, and completion of an extensive reading and writing project over the summer that is due at the first class meeting of the year. Failure to complete the summer assignment will result in removal from the course. Students who do not meet these prerequisites must obtain Department Head approval.***

**0463/0464 ENGLISH COMPOSITION (Dual Enrollment - MCC) - Advanced****12****2.5/2.5 Cr.**

English Composition includes prewriting, writing, and revising essays of exploration, analysis, argumentation/persuasion, and research. Students write at least 3 papers of 3-5 pages and one position paper of 5-10 pages that requires a thesis and support developed through formal research and documentation. This course emphasizes reading and informal writing as methods through which ideas are developed. Second semester is continues with an introduction to literature with an emphasis on learning to write analytical essays through a close reading of fiction, poetry and drama. This course is offered in partnership with Middlesex Community College. Students who successfully complete this course will receive both LHS English graduation credit and MCC credit.. [MCC course equivalent English Composition 1 and English Composition 2: An Introduction to Literature (3 Credits each)]

***PREREQUISITES: Successful completion of English 3 with a minimum grade of 70 in both semesters, an overall GPA of 70 or better, and a qualifying score on the Accuplacer (ENG 101). A grade of 70 or better in Semester 1 is required to continue in Semester 2. Students must complete an extensive reading and writing project over the summer that is due at the first class meeting of the year. Failure to complete the summer assignment will result in removal from the course.***

**0466**                      **READING AND WRITING IN THE 21ST CENTURY - College**                      **11, 12**                      **2.5 Cr.**

Reading and Writing in the 21st Century strengthens reading and writing skills with a specific focus on engaging with contemporary texts. Students will explore how modern voices echo the literary traditions of the past while also representing the ideas and experiences of today. Students will write to explain, to argue, and to express personal connections to the texts. The skills practiced in this course reinforce college and career readiness standards and support students to prepare for college placement tests. Completion of the Grade 12 summer reading program is required. *NOTE: This course satisfies an English graduation requirement for Grade 12 students. Grade 11 students may enroll in the course for elective credit only.*

**0531/0532**                      **CREATIVE WRITING - College**                      **11, 12**                      **2.5/2.5 Cr.**

Creative Writing provides students with experience in developing many different forms of writing, including drama, poetry, fiction, and essays. The inter-relationship of writing and reading is emphasized throughout the course. By examining the work of professional writers, students will gain valuable insights into the art and craft of writing. All students in this course will be expected to share their work through a variety of publishing platforms. Completion of the Grade 12 summer reading program is required. *NOTE: Students can take this course for a single semester. This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0533/0534**                      **CREATIVE WRITING - Honors**                      **11, 12**                      **2.5/2.5 Cr.**

Creative Writing provides students with experience in developing many different forms of writing, including drama, poetry, fiction, and essays. The inter-relationship of writing and reading is emphasized throughout the course. By examining the work of professional writers, students will gain valuable insights into the art and craft of writing. All students in this course will be expected to share their work through a variety of publishing platforms. Completion of the Grade 12 summer reading program is required. *NOTE: Students can take this course for a single semester. This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0537**                      **EXPOSITORY WRITING - College**                      **12**                      **2.5 Cr.**

Expository Writing teaches practical and effective strategies for preparing for the demands of college writing. Students will learn about the conventions of writing in a range of academic disciplines and in different types of papers, such as close readings of texts, reflective responses, and research-based arguments. Through intensive in-class writing, and discussion of thought-provoking articles, students will develop their critical thinking skills and learn to communicate their ideas clearly and persuasively. In addition to preparing for writing papers in college, students will have the opportunity to work on producing a draft of their college admission essay. *Completion of the Grade 12 summer reading program is required.*



**0524 PUBLIC SPEAKING, PERSUASION, AND PRESENTATIONS - Honors 12 2.5 Cr.**

Public Speaking, Persuasion, and Presentations analyzes a variety of speeches, focusing on the power of persuasion. Emphasis will be placed on modern technology as a tool for research, preparation and creation of persuasive, informative and narrative speeches. Students will also learn and practice the speaking, listening and interpersonal skills necessary to be effective communicators in academic settings, the workplace and the community. Completion of the Grade 12 summer reading program is required. *Note: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0525 SHORT FICTION AND POETRY - College 12 2.5 Cr.**

Short Fiction and Poetry explores how short fiction and poetry offer powerful lessons about our common human experiences. Students will read a wide variety of short stories and poetry to improve close reading skills, and strengthen analysis of text, while building an understanding of universal truths. Students will develop their own voices as writers, creating and sharing their work through a variety of communication platforms. Completion of the Grade 12 summer reading program is required. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0526 SHORT FICTION AND POETRY - Honors 12 2.5 Cr.**

Short Fiction and Poetry explores how short fiction and poetry offer powerful lessons about our common human experiences. Students will read a wide variety of short stories and poetry to improve close reading skills, and strengthen analysis of text, while building an understanding of universal truths. Students will develop their own voices as writers, creating and sharing their work through a variety of communication platforms. Completion of the Grade 12 summer reading program is required. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0527 SPORTS LITERATURE AND WRITING - College 12 2.5 Cr.**

Sports Literature and Writing explores literature that reflects the unique relationship between sports and society. Students will read and respond to a wide range of literary and informational texts that pay special attention to universal sports-related themes such as gender equity, racism, perseverance, determination, and integrity. Completion of the Grade 12 summer reading program is required. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0528                    SPORTS LITERATURE AND WRITING - Honors                    12                    2.5 Cr.**

Sports Literature and Writing explores literature that reflects the unique relationship between sports and society. Students will read and respond to a wide range of literary and informational texts that pay special attention to universal sports-related themes such as gender equity, racism, perseverance, determination, and integrity. Completion of the Grade 12 summer reading program is required. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0541                    RACE AND ETHNICITY IN LITERATURE - College                    12                    2.5 Cr.**

Race and Ethnicity in Literature explores issues related to race and ethnicity in American society. These issues include: the meaning of race and ethnicity; the extent of racial and ethnic inequality in the U.S., the nature of racism, discrimination, and racial stereotyping; and the development of racial identity. Students will engage with a wide range of genres aimed at supporting students to think critically about their own racial and ethnic identity, and to understand how this identity reflects and shapes life experiences. Completion of the Grade 12 summer reading program is required. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0542                    RACE AND ETHNICITY IN LITERATURE - Honors                    12                    2.5 Cr.**

Race and Ethnicity in Literature explores issues related to race and ethnicity in American society. These issues include: the meaning of race and ethnicity; the extent of racial and ethnic inequality in the U.S., the nature of racism, discrimination, and racial stereotyping; and the development of racial identity. Students will engage with a wide range of genres aimed at supporting students to think critically about their own racial and ethnic identity, and to understand how this identity reflects and shapes life experiences. Completion of the Grade 12 summer reading program is required. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0543                    LITERATURE OF THE HOLOCAUST A - College                    12                    2.5 Cr.**

Literature of the Holocaust explores literature with the Holocaust as its central theme. Students will read and respond to a variety of genres including fiction, nonfiction, poetry, the graphic novel, drama, photography, and film. Students will engage in discussions, writing assignments and creative projects related to the readings. Topics covered include: bearing witness and survivor testimony, stories of resistance, stories of rescue and heroism, the second generation, and response and reflection to catastrophe with a strong emphasis on survivor perseverance. Completion of the Grade 12 summer reading program is required. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0545                      LITERATURE OF THE HOLOCAUST B- College                      12                      2.5 Cr.**

Literature of the Holocaust explores literature with the Holocaust as its central theme. Students will read and respond to a variety of genres including fiction, nonfiction, poetry, the graphic novel, drama, photography, and film. Students will engage in discussions, writing assignments and creative projects related to the readings. Topics covered include: bearing witness and survivor testimony, stories of resistance, stories of rescue and heroism, the second generation, and response and reflection to catastrophe with a strong emphasis on survivor perseverance. Completion of the Grade 12 summer reading program is required. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0544                      LITERATURE OF THE HOLOCAUST A - Honors                      12                      2.5 Cr.**

Literature of the Holocaust explores literature with the Holocaust as its central theme. Students will read and respond to a variety of genres including fiction, nonfiction, poetry, the graphic novel, drama, photography, and film. Students will engage in discussions, writing assignments and creative projects related to the readings. Topics covered include: bearing witness and survivor testimony, stories of resistance, stories of rescue and heroism, the second generation, and response and reflection to catastrophe with a strong emphasis on survivor perseverance. Completion of the Grade 12 summer reading program is required. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0546                      LITERATURE OF THE HOLOCAUST B- Honors                      12                      2.5 Cr.**

Literature of the Holocaust explores literature with the Holocaust as its central theme. Students will read and respond to a variety of genres including fiction, nonfiction, poetry, the graphic novel, drama, photography, and film. Students will engage in discussions, writing assignments and creative projects related to the readings. Topics covered include: bearing witness and survivor testimony, stories of resistance, stories of rescue and heroism, the second generation, and response and reflection to catastrophe with a strong emphasis on survivor perseverance. Completion of the Grade 12 summer reading program is required. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

## **ENGLISH SUPPORT & ELECTIVE COURSES**

**0023/0024                      BALANCED LITERACY (9) - College                      9 (FA)                      2.5/2.5 Cr.**

Balanced Literacy is an intensive reading intervention program designed to meet the needs of students who are reading below grade level. The program directly addresses individual student needs through adaptive instructional software, high-interest fiction and non-fiction, and direct instruction in reading and writing skills. This course is designed to be a complement to English 1.









**0522**                    **OTHER WORLDS, WHODUNNITS, AND WESTERNS - Honors**                    **12**                    **2.5 Cr.**

Other Worlds, Whodunnits, and Westerns explores the literary worlds of Sci-Fi, Mystery, and Western-inspired novels while satisfying an English graduation requirement. Students will engage in a broad range of active reading and writing activities in this course while examining classic and contemporary works from the core genres and spinoffs such as Spy and Noir stories. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0523**                    **PUBLIC SPEAKING, PERSUASION, AND PRESENTATIONS - College**                    **12**                    **2.5 Cr.**

Public Speaking, Persuasion, and Presentations analyzes a variety of speeches, focusing on the power of persuasion. Emphasis will be placed on modern technology as a tool for research, preparation and creation of persuasive, informative and narrative speeches. Students will also learn and practice the speaking, listening and interpersonal skills necessary to be effective communicators in academic settings, the workplace and the community. *Note: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0524**                    **PUBLIC SPEAKING, PERSUASION, AND PRESENTATIONS - Honors**                    **12**                    **2.5 Cr.**

Public Speaking, Persuasion, and Presentations analyzes a variety of speeches, focusing on the power of persuasion. Emphasis will be placed on modern technology as a tool for research, preparation and creation of persuasive, informative and narrative speeches. Students will also learn and practice the speaking, listening and interpersonal skills necessary to be effective communicators in academic settings, the workplace and the community. *Note: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0525**                    **SHORT FICTION AND POETRY - College**                    **12**                    **2.5 Cr.**

Short Fiction and Poetry explores how short fiction and poetry offer powerful lessons about our common human experiences. Students will read a wide variety of short stories and poetry to improve close reading skills, and strengthen analysis of text, while building an understanding of universal truths. Students will develop their own voices as writers, creating and sharing their work through a variety of communication platforms. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0526**                    **SHORT FICTION AND POETRY - Honors**                    **12**                    **2.5 Cr.**

Short Fiction and Poetry explores how short fiction and poetry offer powerful lessons about our common human experiences. Students will read a wide variety of short stories and poetry to improve close reading skills, and strengthen analysis of text, while building an understanding of universal truths. Students will develop their own voices as writers, creating and sharing their work through a variety of communication platforms. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0527                      SPORTS LITERATURE AND WRITING - College                      12                      2.5 Cr.**

Sports Literature and Writing explores literature that reflects the unique relationship between sports and society. Students will read and respond to a wide range of literary and informational texts that pay special attention to universal sports-related themes such as gender equity, racism, perseverance, determination, and integrity. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0528                      SPORTS LITERATURE AND WRITING - Honors                      12                      2.5 Cr.**

Sports Literature and Writing explores literature that reflects the unique relationship between sports and society. Students will read and respond to a wide range of literary and informational texts that pay special attention to universal sports-related themes such as gender equity, racism, perseverance, determination, and integrity. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0541                      RACE AND ETHNICITY IN LITERATURE - College                      12                      2.5 Cr.**

Race and Ethnicity in Literature explores issues related to race and ethnicity in American society. These issues include: the meaning of race and ethnicity; the extent of racial and ethnic inequality in the U.S., the nature of racism, discrimination, and racial stereotyping; and the development of racial identity. Students will engage with a wide range of genres aimed at supporting students to think critically about their own racial and ethnic identity, and to understand how this identity reflects and shapes life experiences. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0542                      RACE AND ETHNICITY IN LITERATURE - Honors                      12                      2.5 Cr.**

Race and Ethnicity in Literature explore issues related to race and ethnicity in American society. These issues include: the meaning of race and ethnicity; the extent of racial and ethnic inequality in the U.S., the nature of racism, discrimination, and racial stereotyping; and the development of racial identity. Students will engage with a wide range of genres aimed at supporting students to think critically about their own racial and ethnic identity, and to understand how this identity reflects and shapes life experiences. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0543                      LITERATURE OF THE HOLOCAUST A- College                      12                      2.5 Cr.**

Literature of The Holocaust explores literature with the Holocaust as its central theme. Students will read and respond to a variety of genres including fiction, nonfiction, poetry, the graphic novel, drama, photography, and film. Students will engage in discussions, writing assignments and creative projects related to the readings. Topics covered include: bearing witness and survivor testimony, stories of resistance, stories of rescue and heroism, the second generation, and response and reflection to catastrophe with a strong emphasis on survivor perseverance. *NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.*

**0543                    LITERATURE OF THE HOLOCAUST B- College                    12                    2.5 Cr.**

Literature of The Holocaust explores literature with the Holocaust as its central theme. Students will read and respond to a variety of genres including fiction, nonfiction, poetry, the graphic novel, drama, photography, and film. Students will engage in discussions, writing assignments and creative projects related to the readings. Topics covered include: bearing witness and survivor testimony, stories of resistance, stories of rescue and heroism, the second generation, and response and reflection to catastrophe with a strong emphasis on survivor perseverance. ***NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.***

**0544                    LITERATURE OF THE HOLOCAUST A- Honors                    12                    2.5 Cr.**

Literature of the Holocaust explores literature with the Holocaust as its central theme. Students will read and respond to a variety of genres including fiction, nonfiction, poetry, the graphic novel, drama, photography, and film. Students will engage in discussions, writing assignments and creative projects related to the readings. Topics covered include: bearing witness and survivor testimony, stories of resistance, stories of rescue and heroism, the second generation, and response and reflection to catastrophe with a strong emphasis on survivor perseverance. ***NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.***

**0546                    LITERATURE OF THE HOLOCAUST B- Honors                    12                    2.5 Cr.**

Literature of the Holocaust explores literature with the Holocaust as its central theme. Students will read and respond to a variety of genres including fiction, nonfiction, poetry, the graphic novel, drama, photography, and film. Students will engage in discussions, writing assignments and creative projects related to the readings. Topics covered include: bearing witness and survivor testimony, stories of resistance, stories of rescue and heroism, the second generation, and response and reflection to catastrophe with a strong emphasis on survivor perseverance. ***NOTE: This course satisfies an English graduation requirement for Grade 12 students; Grade 11 students may enroll in the course for elective credit only.***

**0951/0952            LATIN LYCEUM SENIOR SEMINAR - Honors                    12                    2.5 Cr.**

Latin Lyceum Project is the culminating course for all Latin Lyceum Students. Students will choose a community based project that demonstrates their application of their high school career at Lowell High School. Components of the Capstone course will include research to identify a need for the community, through surveys and interviews, and develop a written proposal including the issue, research result, and a plan of action for presentation to a committee. Upon acceptance, the student will implement and document the plan, write a reflection paper about their experience and project outcome before presenting it to the LHS Community. **PREREQUISITE: Member of the Latin Lyceum**

**0953/0954 SENIOR SEMINAR - Honors 12 2.5 Cr.**

Senior Project is the culminating course for LHS Seniors. Students will choose a community based project that demonstrates their application of their high school career at Lowell High School. Components of the Capstone course will include research to identify a need for the community, through surveys and interviews, and develop a written proposal including the issue, research result, and a plan of action for presentation to a committee. Upon acceptance, the student will implement and document the plan, write a reflection paper about their experience and project outcome before presenting it to the LHS Community.

**9201/9202 FRESHMAN SEMINAR - Non-Weighted 9 (FA) 2.5/2.5 Cr.**

Freshman Seminar provides students with an opportunity for “self-study”. Throughout the year, students will explore career interests, establish goals, and explore possibilities for post-secondary pathways. This introductory course infuses a PBIS framework and develops students’ organizational skills and study habits in order for them to navigate through their Freshman Year successfully. In addition, Freshman Seminar focuses on enhancing student literacy: functional literacy, digital literacy, and financial literacy.

**9205/9206 LATIN LYCEUM SEMINAR - Non-Weighted 9 (FA) 2.5/2.5 Cr.**

Latin Lyceum Seminar provides students with an opportunity for “self-study”. Throughout the year, students will explore career interests, establish goals, and explore possibilities for post-secondary pathways. This introductory course infuses a PBIS framework and develops students’ organizational skills and study habits in order for them to navigate through their Freshman Year successfully. In addition, Freshman Seminar focuses on enhancing student literacy: functional literacy, digital literacy, and financial literacy.

Middlesex Community College provides services for low-income and/or first generation American citizens and/or permanent resident students who seek to attend college. The goal is to generate the skills and motivation students will need to succeed in higher education. It is an intensive program of instruction and support developed around academic course requirements. Students will apply basic skills that they learn in other academic courses in an interdisciplinary, theme- based curriculum consisting of hands-on activities and group projects. The course will also include the following academic success workshops: critical and creative thinking, problem solving, time management, study skills, career and college planning, MCAS, PSAT, SAT, CPT prep. Students will be expected to participate in a six- week summer program at Middlesex Community College. Students are typically enrolled in fall and spring until graduation. ***PREREQUISITE: Open to qualified college bound freshmen, sophomores, and juniors who are low-income and/or first generation in family who desire to attend college. NOTE: Upward Bound may be substituted for PE for all 9th Grade Upward Bound students. Upward Bound students in Grades 10-12 with a critical course conflict can request a PE waiver directly from the Head of Schoolr.***

# SOCIAL STUDIES

The Social Studies Department offers a four-year course of study in history and the social sciences. The content, reading materials, instructional activities, and assessments are designed to promote higher-level thinking and communication skills. All of the history and social science courses at Lowell High School adhere to the Massachusetts Social Studies Curriculum Frameworks and the Common Core State Standards. Social Studies at LHS promotes a College, Career, and Citizenship (C3) approach to student learning and engagement in social studies. Each student must pass ten (10) credits in U. S. History to graduate. See the Course Description section for the history courses that fulfill the graduation requirements. Social Studies courses are also linked with several pathways.

## WORLD HISTORY COURSES

4121	Essential Skills for World History - College	9 (FA)	2.5
4122	Topics in World History - College	9 (FA)	2.5
4141/4142	Survey of World History - Honors	9 (FA)	2.5/2.5
4181/4182	Survey of World History - High Honors	9 (FA), (LL)	2.5/2.5

## U.S. HISTORY CORE AND ELECTIVE COURSES

4221	Essential Skills for U.S. History - College	10, 11	2.5
4222	Topics in U.S. History - College	10, 11	2.5
4223/4224	Survey of U.S. History - Honors	10, 11, 12	2.5/2.5
4261/4262	U. S. History 1 AP - Advanced	10, 11	2.5/2.5
4361/4362	U. S. History 2 AP - Advanced	11, 12	2.5/2.5
4563	Lowell: Immigration and Industrialization - Honors	11, 12	2.5
4570	Seminar on American Diversity - Honors	11, 12	2.5
4371	Education in America - Honors	11, 12	2.5
4380	America and the World Wars - Honors	11, 12	2.5
4381	America before the Civil War - Honors	11, 12	2.5
4382	The Citizen and the Constitution - Honors	11, 12	2.5
4383	Civil Rights and Jim Crow - Honors	11, 12	2.5
4384	The Civil War - Honors	11, 12	2.5
4385	The Cold War and the Global War on Terror - Honors	11, 12	2.5



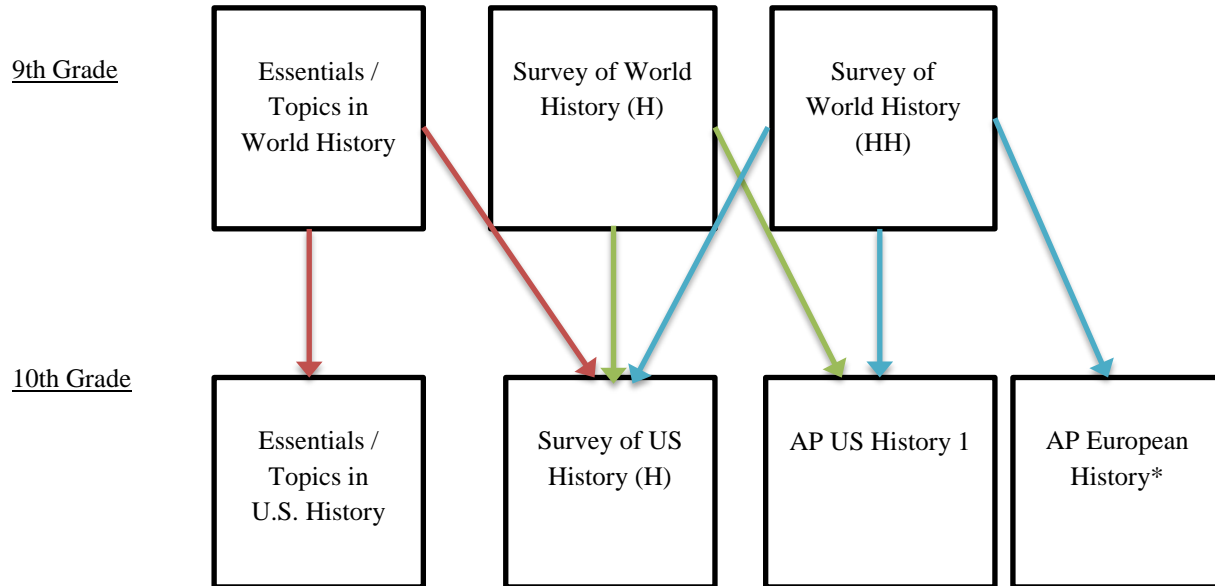
## SOCIAL SCIENCES ELECTIVES

4415/4416	Introduction to Economics & Finance	11, 12	2.5/2.5
4431	Introduction to Sociology - Honors	11, 12	2.5
4435	Introduction to Sociology - Dual Enrollment - Advanced	11, 12	2.5
4441/4442	Psychology - College	11, 12	2.5/2.5
4443/4444	Psychology - Honors	11, 12	2.5/2.5
4445/4446	Psychology AP - Advanced	11, 12	2.5/2.5
4447	Introduction to Psychology - Dual Enrollment - Advanced	11, 12	2.5
4473/4474	Philosophy - Honors	11, 12	2.5/2.5
4566	Gender and Identity - Honors	11, 12	2.5
4568	Digital Journalism	10, 11, 12	2.5
4569	Projects in Digital Journalism - Honors	10, 11, 12	2.5/2.5
4513	Topics in Facing History - Honors	11, 12	2.5
4524	Cambodia: Culture and Conflict - Honors	11, 12	2.5
4661/4662	U.S. Government & Politics AP - Advanced	11, 12	2.5/2.5
4541/4542	Political Science - Honors	11, 12	2.5/2.5
4561/4562	European History AP- Advanced	10, 11, 12	2.5/2.5
4571/4572	Internship and Capstone in the CCC Pathway - Honors	12	2.5

*EXCEPTIONS TO PREREQUISITE REQUIREMENTS AS LISTED REQUIRE WRITTEN APPROVAL  
OF THE DEPARTMENT HEAD.*

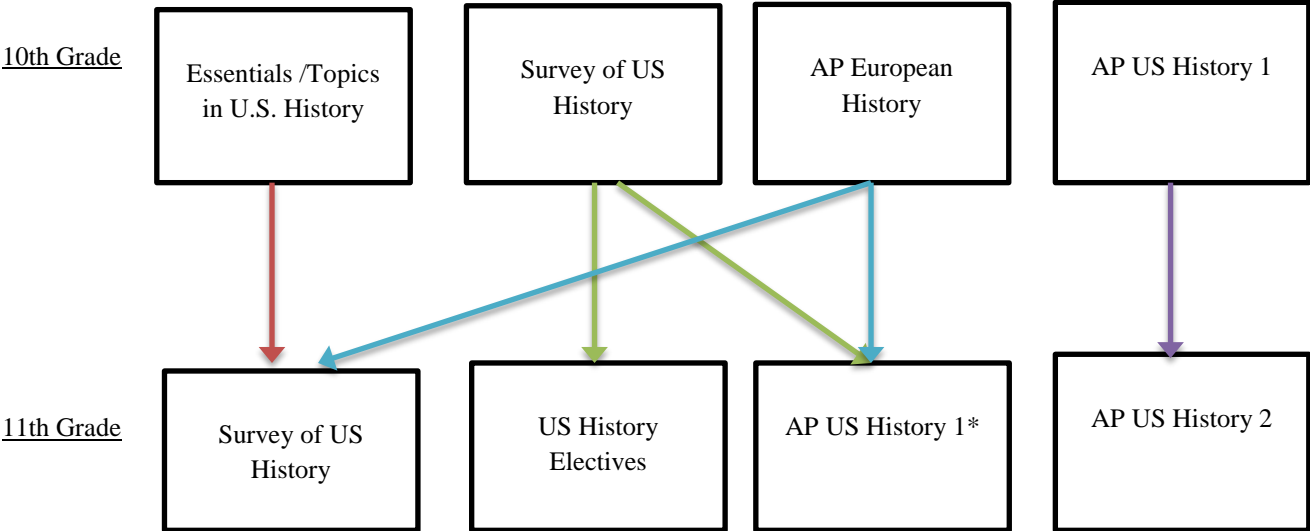
2017-2018 Social Studies Department Required Progressions: 9<sup>th</sup> to 10<sup>th</sup> Grade

Possible progressions paths



**2017-2018 Social Studies Department Required Progressions: 10<sup>th</sup> to 11<sup>th</sup> Grade**

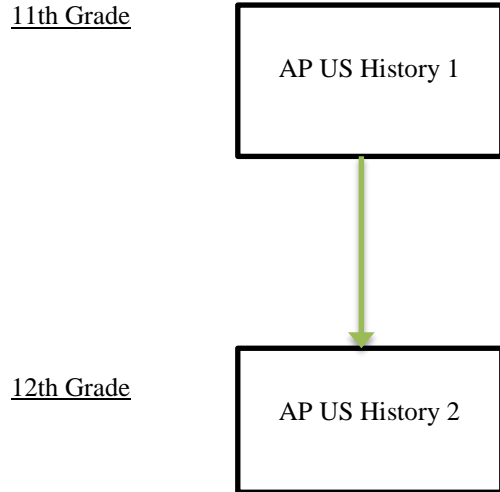
**Possible progression paths**



In their Junior Year, students who meet course prerequisites may also take Social Sciences electives — including AP/DE courses —outside of the normal Departmental course progression. *Juniors cannot substitute Social Studies electives for graduation and/or Latin Lyceum requirements.* They can only take electives concurrently with required courses.

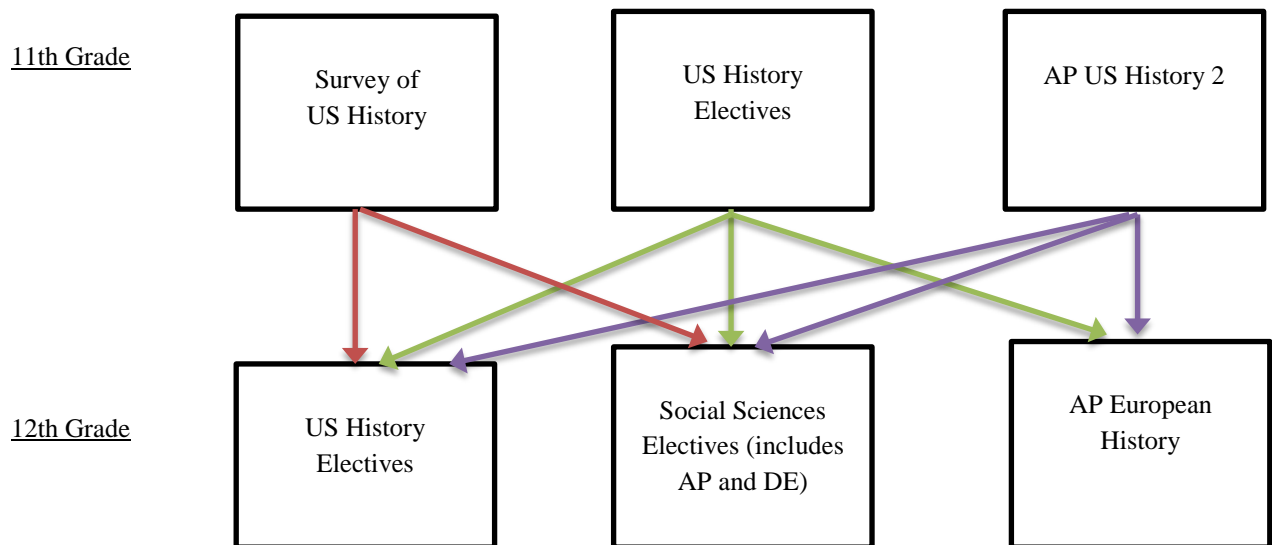
**2017-2018 Social Studies Department Required Progressions: 11<sup>th</sup> to 12<sup>th</sup> Grade**

Only students taking AP US History 1 in their junior year have a required progression path in their senior year



**2017-2018 Social Studies Department Optional/Elective Progressions: 11<sup>th</sup> to 12<sup>th</sup> Grade**

Possible progressions pathways for optional/election courses



## WORLD HISTORY COURSES

**4121**                    **ESSENTIAL SKILLS FOR WORLD HISTORY - College**                    **9**                    **2.5 Cr.**

*Essential Skills For World History* is designed for students who need specialized support to be ready for the Social Studies Curriculum at Lowell High School. Focusing on reading, listening, and communication skills, instructors will use content from the World History curriculum and scaffolded, differentiated instruction to provide a sound base for students to be successful in their further work in social studies and to be ready to meet the graduation requirements of the department. (Co-enrollment at the same level with 0131/0132 English 1 - College or 0111/0112 Explorations in English-College)

**4122**                    **TOPICS IN WORLD HISTORY - College**                    **9**                    **2.5 Cr.**

Building on the proficiencies developed in *Essential Skills for World History*, this project-based course helps students reinforce their competency in critical reading and listening, social sciences writing, and multi-media communication through research-based projects. Content is taken from the World History curriculum. Instructors will individualize their classroom focus and curriculum to provide the strongest platform possible for student success in the social studies curriculum. (Co-enrollment at the same level with 0131/0132 English 1 - College or 0111/0112 Explorations in English-College) **PREREQUISITE: 4121 Essential Skills for World History.**

**4141/4142**                    **SURVEY OF WORLD HISTORY - Honors**                    **9**                    **2.5/2.5 Cr.**

*Survey of World History* begins with a study of the development of democracy in ancient Greece and the development of empire in ancient Rome and ends in the late Middle Ages. It is designed in accordance with the Massachusetts Curriculum Frameworks and Common Core State Standards and integrates global studies, world history, geography, economics, and government. It emphasizes the development of a rich historical vocabulary, primary source analysis, and research techniques. Students will engage in a wide variety of enriching learning activities and assessments as they increase their knowledge of the global community. (Co-enrollment at the same level with 0141/0142 English 1 - Honors)

**4181/4182**                    **SURVEY OF WORLD HISTORY - High Honors**                    **9**                    **2.5/2.5 Cr.**

*Survey of World History* begins with a study of the development of democracy in ancient Greece and the development of empire in ancient Rome and ends in the late Middle Ages. It is designed in accordance with the Massachusetts Curriculum Frameworks and Common Core State Standards and integrates global studies, world history, geography, economics, and government. It emphasizes the development of a rich historical vocabulary, primary source analysis, and research techniques. In High Honors *Survey of World History* students will move through the essential literacy goals of Freshman *Survey of World History* at an accelerated rate, reaching milestones more quickly, and reinforcing those skills more deeply. They will engage in a wide variety of accelerated learning activities and assessments as they increase their knowledge of the global community. (Co-enrollment at the same level with 0151/0152 English 1 - High Honors)

## U.S. HISTORY CORE AND ELECTIVE COURSES

**4221**            **ESSENTIAL SKILLS FOR U.S. HISTORY - College**            **10,11**            **2.5 Cr.**

*Essential Skills for U.S. History* is designed for students who continue to need specialized support to be successful in the Social Studies Curriculum at Lowell High School. Focusing on reading, listening, and communication skills, instructors in *Essential Skills* will use content from the U.S. History curriculum and scaffolded, differentiated instruction to provide further skills development and reinforcement for students to be successful in their further work in social studies and to be ready to meet the graduation requirements of the department.

**4222**            **TOPICS IN U.S. HISTORY - College**            **10,11**            **2.5 Cr.**

*Topics in U.S. History* builds on the proficiencies developed in *Essential Skills for U.S. History*, this project-based course helps students reinforce their competency in critical reading and listening, social sciences writing, and multi-media communication through research-based projects. Content is taken from the U.S. history curriculum. Instructors will individualize their classroom focus and curriculum to provide the strongest platform possible for student success in the social studies curriculum and to meet the graduation requirements of the department. **PREREQUISITE: 4221 Essential Skills for U.S. History.**

**4223/4224**        **SURVEY OF U.S. HISTORY - Honors**            **10, 11, 12**            **2.5/2.5 Cr.**

*Survey of U.S. History* emphasizes the major events in the history of the United States from the French and Indian War to the current day. It is designed around major topics in U.S. History — in accordance with the Massachusetts Curriculum Frameworks, Common Core State Standards, and NCSS guidelines — to provide students with a fundamental knowledge of major currents in American history, with a sound knowledge of complex historical causes; the roots of American democracy, and the rights and responsibilities of citizenship; and, the importance of individual and group action in ensuring American liberty. The course will reinforce goals in critical reading, listening, and communication across multiple domains. **PREREQUISITE: Successful completion of Survey of World History, or Essential Skills for U.S. History and Topics in U.S. History. This course must be completed successfully to meet the departmental graduation requirement.**

**4261/4262**        **U.S. HISTORY 1 AP - Advanced**            **10, 11**            **2.5/2.5 Cr.**

*U.S. History 1 - AP* meets the standards of the College Board's Advanced Placement program as well as the Massachusetts Curriculum Frameworks. Beginning with European colonization and ends at the close of the Civil War and Reconstruction, it provides in-depth knowledge and inquiry in every major aspect of U.S. History. The course builds skills in working with primary and secondary sources as well as assessments developed with College Board AP standards. The course is reading and writing intensive. **NOTE: This course is required for students enrolled in the Latin Lyceum. PREREQUISITE: Successful completion of both Survey of World History (H/HH) and English 1(H/HH) with a minimum grade of 90, and written recommendation from at least one humanities teacher. All AP courses require Department Head Approval.**

**4361/4362 U.S. HISTORY 2 AP - Advanced 11, 12 2.5/2.5 Cr.**

*U.S. History 2 - AP* analyzes the development of the United States from Reconstruction through present day. This course stresses political history as well as examining economic development, diplomatic, intellectual, social, urban and ethnic history. The AP course in U.S. History is designed to meet the standards of the College Board's Advanced Placement program as well as the Massachusetts Curriculum Frameworks. The course builds skills in working with primary and secondary sources as well as assessments developed with College Board AP standards. The course is reading and writing intensive. This course is required for students enrolled in the Latin Lyceum. **PREREQUISITE: Successful completion of U.S. History 1 AP. Transfer into U.S. History 2 AP from any other course is reviewed on a case-by-case basis by the Department Head for approval.**

**4371 EDUCATION IN AMERICA - Honors 11, 12 2.5 Cr.**

In the United States of America, education is required for almost all students up to age 18. It is the single most important common experience of all Americans' childhood. Most people, however, do not have a full understanding of how education in America evolved into the system we have today or what it means to be a teacher in today's rapidly changing environment. *Education in America* course will introduce students to the historical foundations of U.S. education, including the major movements that shaped American education. It will explore what it means to be a public education teacher. The course will include required readings, projects, research, presentations, and, as a capstone of the course, the opportunity to explore the role of teaching by planning and implementing a lesson in an LHS classroom. *Education in America* is especially recommended for any student who is interested in education as a future career. **PREREQUISITE: Successful completion of English 2 and Survey of U.S. History.**

**4563 LOWELL NOW AND IN AMERICAN HISTORY - Honors 11, 12 2.5 Cr.**

*Lowell Now and in American History* studies our city from multiple angles: history, sociology, demographics, urban geography, and urban anthropology. A major theme in this course is the way in which Lowell reflects America's experience of industrialization and immigration. Course projects will look both at the history and the present of Lowell. Students will participate in the collection and curation of an oral history collection, and in the Generation Citizen program. This course is provided in cooperation with the Tsongas Industrial History Center and UML. **PREREQUISITES: Successful completion of English 2 and Survey in U.S. History.**

**4570 SEMINAR ON AMERICAN DIVERSITY - Honors 11, 12 2.5 Cr.**

*Seminar on American Diversity* explores the diverse voices in the history and society of Lowell, the Commonwealth of Massachusetts, and the United States. Looking at a wealth of primary sources, the course will explore important and challenging issues in U.S. history and American current events around race, religion, ethnicity, socioeconomic class, gender, sexual orientation, and immigration and citizenship status. This course will include required reading, projects, teach-outs, short research papers, community interaction, and a final capstone project. The topics to be covered will be determined with input of the students through consensus building at the start of the semester. **PREREQUISITE: Successful completion of English 2 and Survey of US History. This course is required for all CCC Pathway students.**

**4380**                    **AMERICA AND THE WORLD WARS - Honors**                    **11, 12**                    **2.5 Cr.**

WWI was known as the “Great War” and WWII came to be known as the “Good War.” America was fundamentally changed by both wars. WWI saw a reluctant United States involve itself in a European war for the first time; WWI led to the Roaring Twenties and a new American view of itself and the affairs of the world. WWII thrust America into the role of a world leader — a role that continues to the current day. It also set the groundwork for the Cold War and many of America’s current alliances. *America and The World Wars* traces the cause, course, and outcomes of America’s involvement in each of these wars. **PREREQUISITE: Successful completion of English 2 and Survey of U.S. History.**

**4381**                    **AMERICA BEFORE THE CIVIL WAR - Honors**                    **11, 12**                    **2.5 Cr.**

*America before the Civil War* traces U.S. history during the Antebellum period: from the War of 1812 up to the bombardment of Ft. Sumter that started the Civil War. Regional differences between the American North and South will be examined, with particular emphasis on the institution of slavery and its role in the conflict between the North and South. Other focal points are the politics and culture of North and South, the role of the Mexican-American war, and the presidents and members of Congress who were influential in the lead-up to the Civil War. **PREREQUISITE: Successful completion of English 2 and Survey of U.S. History.**

**4382**                    **THE CITIZEN AND THE CONSTITUTION – Honors (S1 only)**  
**11, 12**                    **2.5 Cr.**

*The Citizen and the Constitution* examines the fundamental founding principles of American constitutional democracy and its institutions. Through close examination of the text of the Constitution, along with the context in which that text was created and how it is understood today, students will gain an appreciation for the rights U.S. citizens enjoy today as well as the responsibilities that come from those rights. Students will use this knowledge to prepare for simulated Congressional hearings in the *We the People* competition program, working in small groups to answer questions on Constitutional principles that are created each year by the Center for Civic Education. Based on this work students will have the opportunity to compete at district and state competitions, with the possibility of national competition in the Spring. **PREREQUISITE: Successful completion of English 2 and Survey of U.S. History. This course is required for CCC Pathway students.**

**4383**                    **CIVIL RIGHTS AND JIM CROW - Honors**                    **11, 12**                    **2.5 Cr.**

*Civil Rights and Jim Crow* first answers the question “what is Jim Crow?” and why the term is at the center of much of America’s history around race relations. The course looks at the ways in which Jim Crow laws were conceived, constructed, and enacted, paying special attention to the ways in which they limited the freedoms of Black Americans and other minorities. *Jim Crow in America* brings issues raised in American history up to the present, examining both current legacies of Jim Crow and the ways in which different American communities view Jim Crow today, including the Black Lives Matter movement and opposing views. **PREREQUISITE: Successful completion of English 2 and Survey of U.S. History.**







**4441/4442 PSYCHOLOGY - College 11, 12 2.5/2.5 Cr.**

*Psychology* uses class discussion, audio-visual presentations, group work, case studies, readings from psychological literature, and lectures, students develop a solid foundation in the basic theories and principles of psychology. The course explores the history of the discipline and its research methods, the social and cultural dimensions of behavior, and the more common psychological disorders and treatment. ***PREREQUISITES: Successful completion of English 2 and Survey of US History.***

**4443/4444 PSYCHOLOGY - Honors 11, 12 2.5/2.5 Cr.**

The first semester of *Psychology* sets the foundation for an in-depth study of psychology in the second semester. The main objective is to offer the students an introduction to the world of psychology. Using class discussion, audio-visual presentations, group work, case studies, readings from psychological literature, and lectures, students develop a solid foundation in the basic theories and principles of psychology. The course explores the history of the discipline and its research methods, the social and cultural dimensions of behavior, and the more common psychological disorders and treatment. Analysis, synthesis, and evaluation of psychological theories will be an integral component of this course. ***PREREQUISITES: Successful completion of English 2 - Honors and Survey of US History.***

**4445/4446 PSYCHOLOGY AP - Advanced 11, 12 2.5/2.5 Cr.**

The *AP Psychology* course introduces students to the study of the behavior and mental processes of human beings. Topics explored include: Scientific Inquiry, Biopsychology, Development and Learning, Socio-cultural Context, Cognition, Individual Variation, and Applications of Psychological Science. Students investigate the facts, principles, and phenomena associated with each of the major domains within psychology. This AP Psychology course has been designed to meet the standards of the College Board's Advanced Placement program. All students enrolled in the AP Psychology course must take the College Board AP Psychology exam to complete the course in good standing. ***PREREQUISITES: Successful completion of English 2, and U.S. History 1 AP or Survey of US History with a minimum grade of 90 and a passing grade on the Psychology Assessment. All AP courses require Department Head Approval.***

**4447 INTRO TO PSYCHOLOGY - (DE - MCC) - Advanced 11, 12 2.5 Cr.**

*Intro to Psychology* provides an introduction to the study of how people behave and function. Topics covered include: physiology of the brain, memory, learning, language, perception, life span changes, normality and abnormality, social interactions, group influence on individuals, and therapies. ***PREREQUISITES: Teacher recommendation, overall GPA of 2.0 or better, and qualifying Accuplacer score (Eng 101).***

**4473/4474**      **PHILOSOPHY - Honors**      **11, 12**      **2.5 Cr.**

*Philosophy* examines the philosophical texts of Plato, Socrates, Kant, Russell, Sartre, Hume, and Locke. This course will enable students to become more accomplished critical thinkers and develop the conceptual abilities and analytical skills needed to think philosophically about such issues as morality, personal freedom, and the nature of reality and human existence. Students will recognize how philosophical ideas can form a framework for an approach to living and a reflective attitude toward every aspect of life. This is the first semester of a required full year course in Philosophy. **PREREQUISITES:** *Successful completion of English 2 and Survey of US History.*

**4566**      **GENDER AND IDENTITY - Honors**      **11, 12**      **2.5 Cr.**

*Gender and Identity* looks at the phenomenon of gender from multiple aspects: psychology, sociology, anthropology, psychology, philosophy, and religion. Starting with ancient myths and views around gender, the course will progress to modern ideas of gender as a construct, and question the connection between mind, body, and genetics. The course will include literature, music, religious texts, folklore, and theoretical readings that reflect differing attitudes toward what gender is and how different genders should contribute to society. Major changes in American attitudes toward gender after WWII will be examined and compared with world trends. Each student will be expected to research and write a major paper at the end of the course, and present her or his ideas through digital media. **PREREQUISITES:** *Successful completion of English 2 and Survey in U.S. History.*

**4513**      **TOPICS IN FACING HISTORY - Honors**      **11, 12**      **2.5 Cr.**

*Topics in Facing History* helps students find meaning in the past and recognize the need for involvement and responsible decision-making. Using the Holocaust as a case study, participants will be asked to examine history in all of its complexities, including its legacies of prejudice and discrimination, resilience and courage. The Facing History course helps young people develop a voice in their conversations with peers, as well as in the important discussions and debates of their community and nation. In this course, students make the essential connection between history and the moral choices they confront in their own lives. Students will be required to complete an in-depth research project incorporating technological, written, and presentation components. **PREREQUISITES:** *Successful completion of English 2 and Survey in U.S. History.*

**4524**      **CAMBODIA: CULTURE AND CONFLICT – Honors**      **11, 12**      **2.5 Cr.**

*Cambodia: Culture and Conflict* explores the history and culture of Cambodia from its earliest beginnings, as a protectorate of France, and as a modern independent nation. Students will also examine the causes, events, and aftermath of the Cambodian Genocide. The incorporation of primary source materials, oral histories, and guest speakers will be instrumental in this course. Students will be required to complete an in-depth research project incorporating technological, written, and presentation components. **PREREQUISITES:** *Successful completion of English 2 and Survey in U.S. History.*

**4661/4662 U.S. GOVERNMENT AND POLITICS (AP) - Advanced 11, 12 2.5/2.5 Cr.**

*U.S. Government and Politics* focuses on the study of the include the United States Constitution, public policy, political behavior, political and government institutions, civil liberties, and in-depth case studies of landmark Supreme Court decisions. This rigorous AP U.S. Government and Politics course has been designed to meet the standards of the College Board's Advanced Placement program. All students enrolled in this full year elective must take the AP College Board subject test. **PREREQUISITE: Successful completion of English 2 and Survey of US History with a minimum grade of 90. All AP courses require Department Head Approval.**

**4541/4542 POLITICAL SCIENCE - Honors 11, 12 2.5/2.5 Cr.**

*Political Science* explores the origins of politics as a science from Machiavelli through Locke to Adams and Jefferson. Students consider such issues as power and sovereignty, nationalism and sectionalism, the federal system and the party system. Students delve into such questions as what is the state, what is authority, what are the psychological and sociological elements of the state and of national power. Students are required to complete written essays and research papers in this course. **PREREQUISITES: Successful completion of English 2 and Survey of US History.**

**4561/4562 EUROPEAN HISTORY AP - Advanced 10, 11, 12 2.5/2.5 Cr.**

*European History* is for students who wish to develop a broader base in university-level history. The course begins with the Renaissance and the religious upheavals that marked the emergence of early modern Europe and continues up to the present day. It follows a thematic as well as a chronological sequence to acquaint students with all major religious, political, social, economic, and artistic movements leading to the formation of the major nation states. Students are required to master a series of outside reading assignments and to demonstrate advanced analytical and writing skills. **PREREQUISITE: World History - High Honors with a 90 or teacher recommendation, or AP U.S. History 2 or teacher recommendation, or Department US History requirement (10 credits) with cumulative 90 or better. All AP courses require Department Head approval. This course is a required component of the Latin Lyceum in the sophomore year.**

**4568 DIGITAL JOURNALISM - Honors 10, 11, 12 2.5 Cr.**

*Digital Journalism* focuses on the structural ways in which communication has changed because of the digital revolution, as well as the practical implications of communicating in the digital era through twenty-first century social media. The course will also look at the changes in journalism inherent in the shift from print media to online 24/7 media. Students will learn to manipulate social media and web-based products to construct an online professional presence. Students in the class also will contribute to the school's news website. Basic concepts and ethics of journalism will be covered, with particular emphasis on how ethical journalism affects understanding of content and the role of journalism in the community at large. The bulk of work in the course will revolve around journalistic assignments at LHS and in the surrounding community.



# MATHEMATICS

To function in today's society, mathematical literacy is as essential as verbal literacy. These two kinds of literacy, although different, are not unrelated. Without the ability to read and understand, no one can become mathematically literate. Increasingly, the reverse is also true: without the ability to understand basic mathematical ideas, one cannot fully comprehend the world around them. Therefore, a primary goal of the Mathematics Department is for all students to achieve mathematical literacy. However, mathematical literacy includes more than students being able to do arithmetic and to solve routine mathematical problems. Mathematical literacy requires students to reason and prove, to solve real mathematical problems, to make connections, to use multiple representations of numerical information, and to communicate mathematical information to other people. All of the courses in the Mathematics Department operate with these learning goals in mind.

Lowell High School's graduation requirement is the passing of ten (10) credits in Mathematics (5 credits of Algebra and 5 credits of Geometry).

Massachusetts law requires students to pass the grade 10 MCAS tests, with a score of at least 240, in addition to local graduation requirements, as a condition for receiving a high school diploma. Consequently, all freshman and sophomore courses prepare the students in the State Mathematics Curriculum Framework requirements so that they will be prepared for the MCAS mathematics test. The Mathematics Department also provides courses to support students' needs to fulfill the EPP requirements, should a student need them

Please see the flow chart in this section for a guide to the sequence of mathematics courses.

## MATHEMATICS CORE COURSES

1121/1122	Algebra 1 - College	9, 10, 11, 12	2.5/2.5
1120	Algebra 1 - College (BL)	10	5
1131/1132	Algebra 1 - College	9 (FA)	2.5/2.5
1141/1142	Algebra 1 - Honors	9 (FA)	2.5/2.5
1101/1111	Transition To Algebra/Topics in Algebra	9 (FA)	2.5/2.5
1112	Applications In Algebra	10	2.5
1325	Applications in Math - College	11, 12	2.5
1220	Geometry - College (BL)	10	5
1231/1232	Geometry - College	10, 11, 12	2.5/2.5
1241/1242	Geometry - Honors	10, 11	2.5/2.5
1251/1252	Geometry & Analytic Geometry - High Honors	9, 10	2.5/2.5
1331/1332	Algebra 2 - College	10, 11, 12	2.5/2.5
1341/1342	Algebra 2 - Honors	10, 11	2.5/2.5
1351/1352	Algebra 2 & Trigonometry - High Honors	10, 11	2.5/2.5
1431/1432	Pre-Calculus - College	11, 12	2.5/2.5
1441/1442	Pre-Calculus - Honors	11, 12	2.5/2.5
1451/1470	Advanced Pre-Calculus / Calculus A - Advanced	11, 12	2.5/2.5
1443/1444	Fundamentals of Calculus - Honors	12	2.5/2.5
1475/1476	AP Calculus AB - Advanced	11, 12	2.5/2.5
1477/1478	AP Calculus BC - Advanced	12	2.5/2.5
1467/1468	Statistics - Honor	11, 12	2.5/2.5
1465/1466	AP Statistics - Advanced	11, 12	2.5/2.5

## MATHEMATICS SUPPORT & ELECTIVE COURSES

1062	SAT Preparation - Non-Weighted	11, 12	2.5
1081/1082	Freshman Math Seminar - Non-Weighted	9 (FA)	2.5/2.5
1411	Introduction to Statistics - College	11, 12	2.5
1414	Discrete Mathematics - College	11, 12	2.5
1425/1426	Advanced Quantitative Reasoning - College	11, 12	2.5
1427/1428	Advanced Quantitative Reasoning - Honors	11, 12	2.5
1429/1430	Math 4 - College	12	2.5/2.5
1353/1354	Financial Algebra - College	11, 12	2.5/2.5

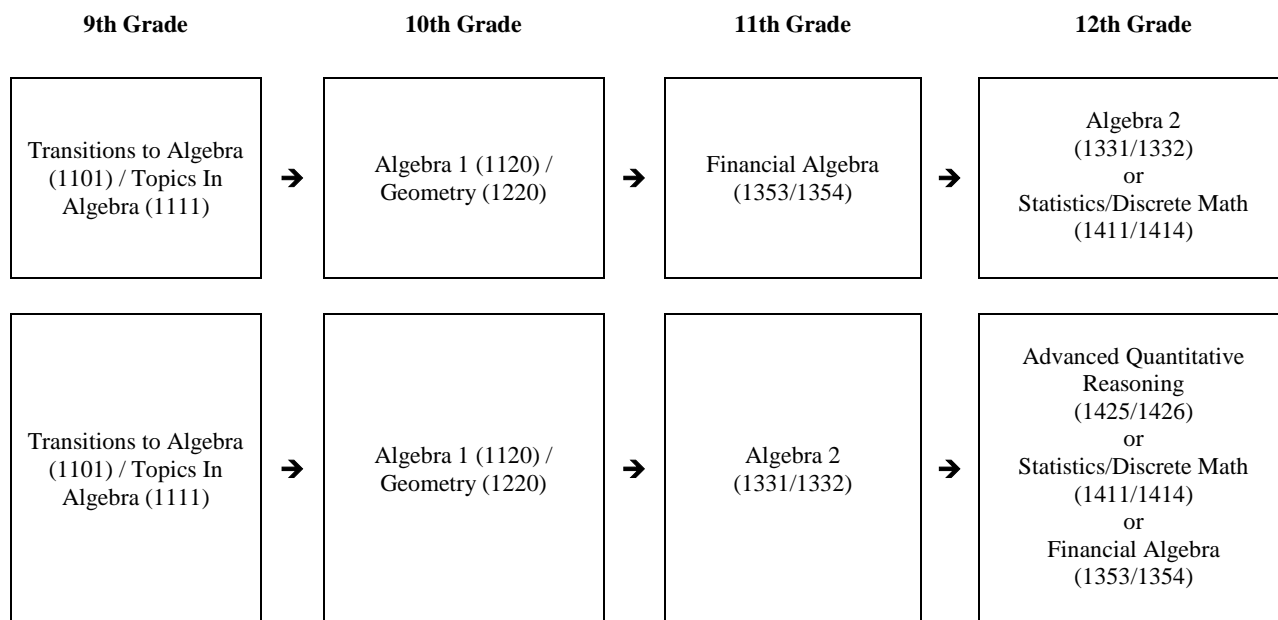
## COMPUTER PROGRAMMING

1613/1614	Introduction to Programming -Honors	10, 11, 12	2.5/2.5
1621/1622	Visual BASIC Programming - Honors	10, 11, 12	2.5/2.5
1641/1642	Computer Programming - Honors	10, 11, 12	2.5/2.5
1651/1652	AP Computer Programming - Advanced	11, 12	2.5/2.5

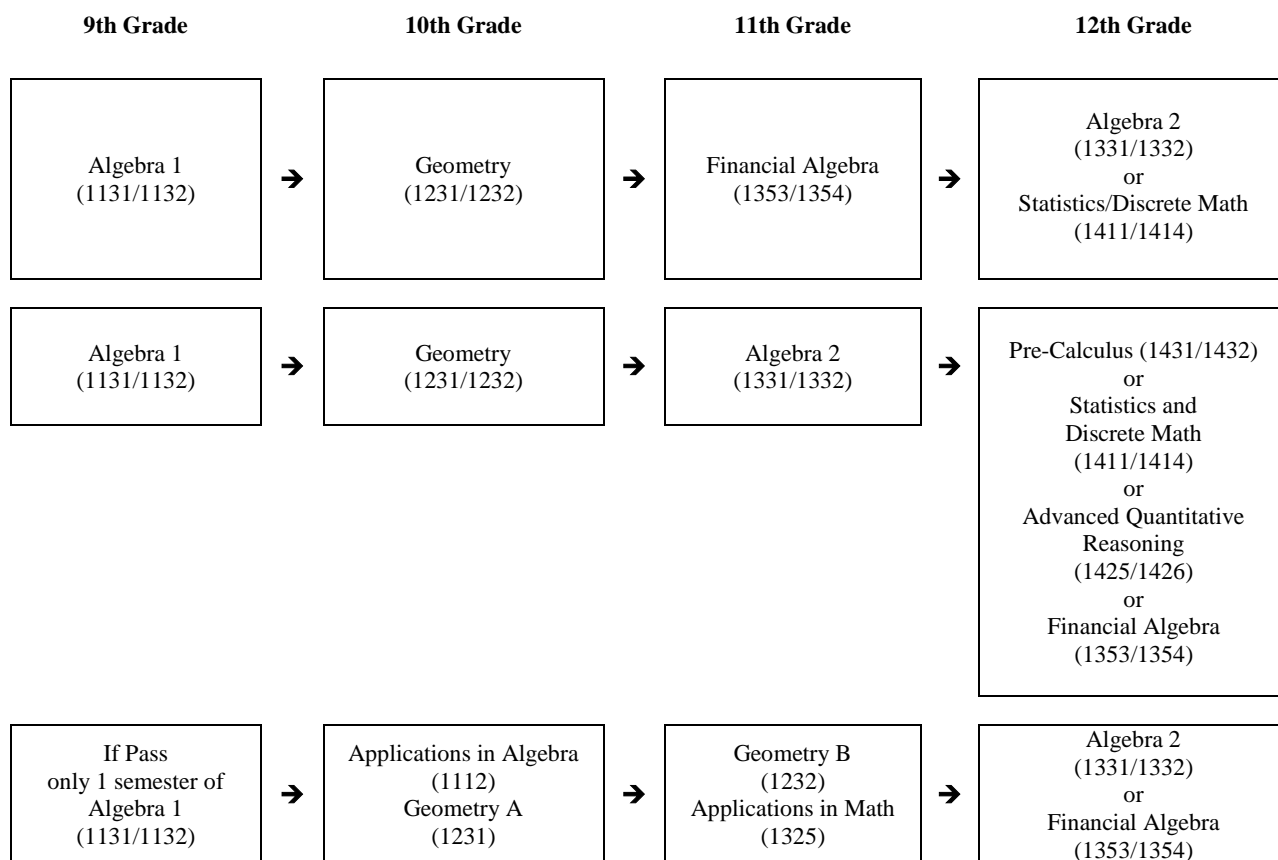


## Mathematics Course Sequence Flow Chart

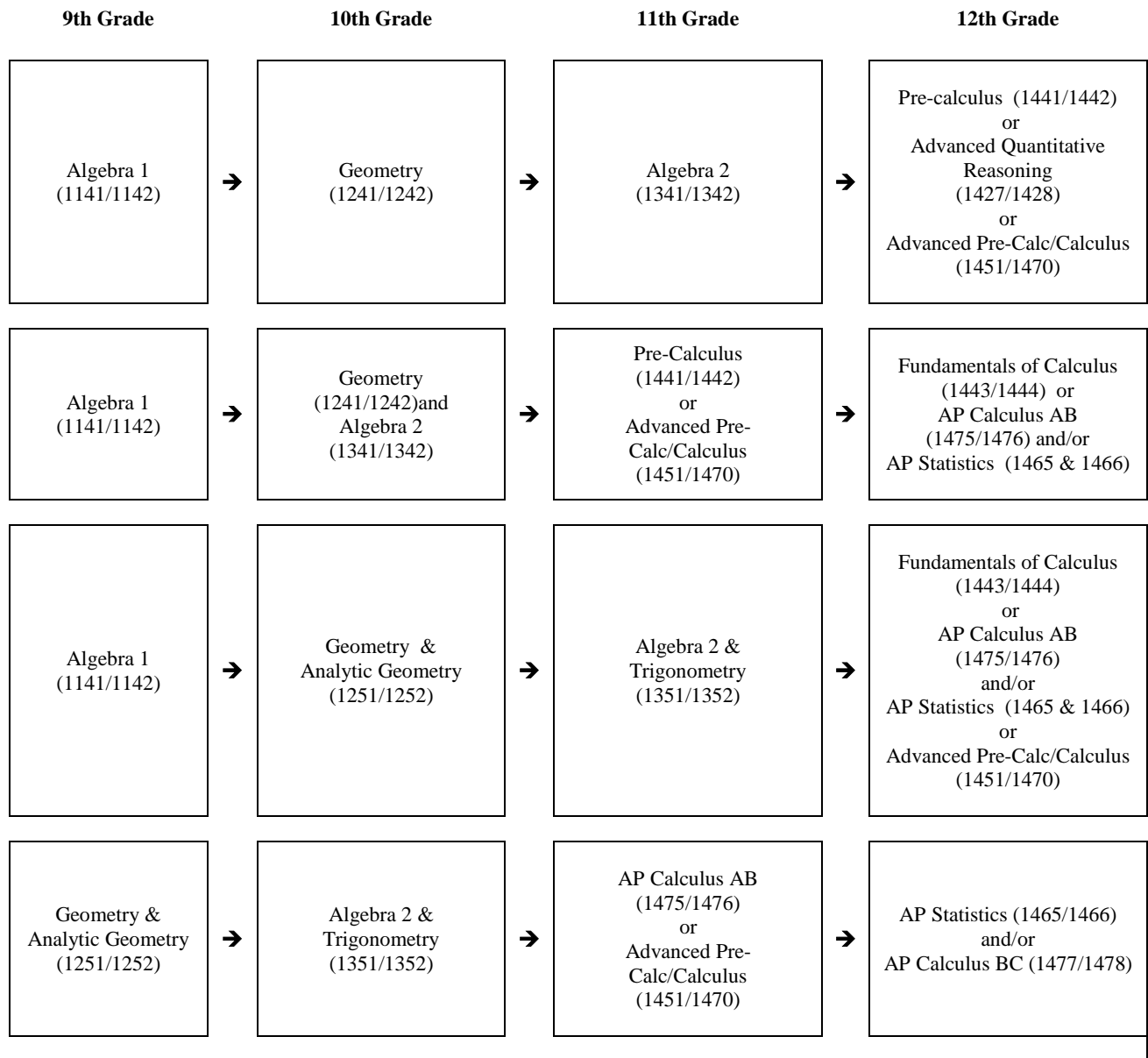
### College Level Transitional Flow Chart



### College Level Flow Chart



### Honors Level Flow Chart





**1131/1132 ALGEBRA 1 - College 9 2.5/2.5 Cr.**

Algebra 1 develops reasoning skills in a way that will help students in their future courses and careers. The topics of Algebra 1 focus on four critical areas: (1) deepen and extend understanding of linear and exponential relationships; (2) contrast linear and exponential relationships with each other and engage in methods for analyzing and solving linear and using quadratic functions; (3) extend the laws of exponents to square and cube roots; and (4) apply linear models to data that exhibit a linear trend. *(Co-enrollment at the same level with 3131/3132 Integrated Science – College)*

**1141/1142 ALGEBRA 1 - Honors 9 2.5/2.5 Cr.**

Algebra 1 - Honors develops reasoning skills in a way that will help students in their future courses and careers. The topics of Algebra 1A focus on two critical areas: (1) deepen and extend understanding of linear and exponential relationships; (2) contrast linear and exponential relationships with each other and engage in methods for analyzing and solving linear and exponential equations. *(Co-enrollment at the same level with 3141/3142 Integrated Science - Honors)* **PREREQUISITE: Eligibility for this course is established by teacher recommendation, placement tests scores, and a grade of at least 85 in eighth grade mathematics or 75 through 85 in a full year eighth grade Algebra 1 class.**

**1325 APPLICATIONS IN MATH - College 11, 12 2.5 Cr.**

Applications in Math is a skill based course that applies Algebra 1 and Geometry based concepts in real world applications. **PREREQUISITE: Successful completion of Geometry B (S1) path and Department Head Approval.**

**1220 GEOMETRY (BL) - College (S2) 10, 11, 12 5 Cr.**

Geometry is developed with a view of logical thinking and applied Algebra as well as its applications to the physical world. Properties of lines, angles and triangles are examined and in some cases deduced from other properties. The idea of congruence is introduced and the classical postulates and theorems are introduced and discussed. Properties of polygons are included. Transformations are studied. Hands on projects are utilized throughout the course. **NOTE: This course is presented in a 2 consecutive period block format and is for students that have successfully completed the 1101 Transitions to Algebra and 1111 Topics in Algebra course sequence. Permission of the Department Head is required.**

**1231/1232 GEOMETRY - College 10, 11, 12 2.5/2.5 Cr.**

Geometry is developed with a view of logical thinking and applied Algebra as well as its applications to the physical world. Properties of lines, angles and triangles are examined and in some cases deduced from other properties. The idea of congruence is introduced and the classical postulates and theorems are introduced and discussed. Properties of polygons are included. Transformations are studied. Hands on projects are utilized throughout the course. **PREREQUISITE: Successful completion of one year of high school math.**







## MATHEMATICS SUPPORT & ELECTIVE COURSES

**1062                    SAT PREPARATION MATH - Non-Weighted                    11, 12                    2.5 Cr.**

SAT Preparation Math is recommended for students wishing to increase their math PSAT and SAT scores. Test taking strategies will be studied and a number of actual SAT math tests will be taken throughout the semester. *NOTE: Does not meet math graduation requirement.*

**1081/1082            MATH SEMINAR - Non-weighted                    9 (FA)                    2.5/2.5 Cr.**

Math Seminar aims to give students the mathematical knowledge, skills, and confidence needed to succeed in a standard first year Algebra class. Students will be placed in this course based on their MCAS scores or by recommendation of their 8-th grade math teacher. *COREQUISITE: Algebra 1 - College.*  
*NOTE: Does not meet math graduation requirements.*

**1353/1354            FINANCIAL ALGEBRA - College                    11, 12                    2.5/2.5 Cr.**

Financial Algebra is an algebra-based, applications oriented, technology dependent course that requires Algebra 1 and Geometry. The course addresses college preparatory mathematics topics such as Algebra 2, Statistics, Probability and Pre-Calculus under seven financial umbrellas: Banking, Investing and modeling a business, Employment and Income taxes, Automobile ownership, Independent living, and retirement Planning and Household Budgeting. Students use a variety of problem solving skills and strategies in real-world contexts. *PREREQUISITE: Successful completion of Algebra 1 and Geometry.*

**1411/1414            INTRODUCTION TO STATISTICS - College                    11, 12                    2.5 Cr.**  
**DISCRETE MATHEMATICS - College                    11, 12                    2.5 Cr.**

Introduction to Statistics emphasizes Descriptive Statistics and Probability. Measures of Central Tendency (Mean, Median, and Mode) are reviewed. Percentiles and Normal Distributions are introduced along with Standard Deviation and z-Scores. Various graphs and graphing techniques are discussed that make data sets visually understandable as well as persuasive or misleading.

Discrete Mathematics studies the topics of group decision making (election theory), fair division, modeling, Euler paths, number theory, mapping and matrices. These and other topics covered reflect the changing nature of human society and are applied to important problems in the social sciences, biological sciences, and computer systems. They are topics that are useful to people in business, education, social science, and law, as well as those who study mathematics, science, and engineering.



**1425/1426      ADVANCED QUANTITATIVE REASONING - College 11, 12      2.5/2.5 Cr.**

Advanced Quantitative Reasoning prepares students to use Algebra, Geometry, and Trigonometry and Discrete mathematics to model a range of situations and solve problems in a variety of ways. A significant aspect of the course is group work and oral presentations will be required every week. Topics include analyzing numerical data, using recursion and functions in models and decision making, networking, and graphing. Particular emphasis is given to statistics and financial applications. The course is project-based, and students will use all of the above to model real-life problems. This is a fast-paced, fun course - students get a chance to look at old topics in a new way! ***PREREQUISITE: Successful completion of Algebra 1 and Algebra 2.***

**1427/1428      ADVANCED QUANTITATIVE REASONING - Honors 11, 12      2.5/2.5 Cr.**

Advanced Quantitative Reasoning - Honors takes a more in-depth look at set theory, decision making and measures of central tendency and variance. Student oral presentations will be required several times a week and most of the work will be done in groups. This course is designed to prepare students to use Algebra, Geometry, and Trigonometry and Discrete mathematics to model a range of situations and solve problems in a variety of ways. A significant aspect of the course is group work and oral presentations will be required every week. Topics include analyzing numerical data, using recursion and functions in models and decision making, networking, and graphing. Particular emphasis is given to statistics and financial applications. The course is project-based, and students will use all of the above to model real-life problems. This is a fast-paced, fun course - students get a chance to look at old topics in a new way! ***PREREQUISITE: Successful completion of Algebra 1 Honors and Algebra 2 - Honors.***

## COMPUTER PROGRAMMING

1613/1614	Introduction to Programming - Honors	10, 11, 12	2.5/2.5
1621/1622	Visual BASIC Programming - Honors	10, 11, 12	2.5/2.5
1641/1642	Computer Programming - Honors	10, 11, 12	2.5/2.5
1651/1652	Computer Programming AP - Advanced	11, 12	2.5/2.5

**1613/1614      INTRODUCTION TO PROGRAMMING - Honors      10, 11, 12      2.5/2.5 Cr.**

Introduction to Programming introduces fundamental programming concepts in the context of creating animated movies and simple video games, in a hands-on environment. By manipulating the objects in their virtual world, students gain experience with all the programming constructs typically taught in an introductory programming course. The course is intended not only to familiarize students with computers but also to sharpen problem-solving skills. ***PREREQUISITE: Successful completion of Algebra 1.*** ***NOTE: Does not meet math graduation requirements.***

**1621/1622      VISUAL BASIC PROGRAMMING - Honors      10, 11, 12      2.5/2.5 Cr.**

Visual Basic provides the fundamentals of programming in a hands-on environment using the Visual BASIC language on a PC. The course is intended not only to familiarize students with computers but also to sharpen problem-solving skills. Visual BASIC is used to provide an in-depth study of the topics described in Introduction to Programming. ***MCC ARTICULATION: CSC101 Introduction To Computer Science*** ***PREREQUISITE: Successful completion of Algebra 1.*** ***NOTE: Does not meet math graduation requirements.***

**1641/1642      COMPUTER PROGRAMMING - Honors      10, 11, 12      2.5/2.5 Cr.**

Java expands a student's programming background using structured programming methods using the Java programming language. Students learn data types, functions, procedures, parameter passing, repetition, selective branching, and recursion. Further attention is paid to graphics. Records, arrays, lists, files and objects are studied. The PC as a personal tool is examined. Sequential access data files are studied. A variety of problems in mathematics, science, and data processing are analyzed and programmed. There is discussion and use of a network and operating systems. ***PREREQUISITE: Successful completion of Introduction to Programming.***

**1651/1652      COMPUTER PROGRAMMING AP - Advanced      11, 12      2.5/2.5 Cr.**

Computer Programming (AP) expands the study of higher languages, especially Java, is the basis of the AP Exam. The AP Computer Science syllabus is the guide for this course. The teacher assigns special projects and topics on an individual basis as a supplement to class assignments. Students will take the Advanced Placement test in Computer Science. Not applicable to math graduation requirement. ***PREREQUISITE: Successful completion of Visual Basic or Java with recommendation by the teacher.*** ***All AP courses require Department Head Approval.***

# SCIENCE

Each student is required to pass 10 credits in Science as a graduation requirement. All students must complete Integrated Science and be **enrolled in or completed** Biology before electing an upper level science elective.

In addition to local graduation requirements, Massachusetts requires students to pass state generated MCAS tests as a condition for receiving a high school diploma. Successful completion of a Science MCAS test is a graduation requirement. Lowell High School students will sit for the Biology MCAS in their sophomore year.

## Science Core Courses

3131/3132	Integrated Science & Engineering - College	9	2.5/2.5
3141/3142	Integrated Science & Engineering - Honors	9	2.5/2.5
3221/3222	Explorations in Integrated Science - College	9	2.5/2.5
3247/3248	Explorations in Biology - College	10, 11, 12	2.5/2.5
3231/3232	Biology - College	10, 11, 12	2.5/2.5
3241/3242	Biology - Honors	10, 11, 12	2.5/2.5

## Science Elective Courses

3051	MCAS Biology	10,11,12	2.5
3731/3732	Principles of Biology - UML - Advanced	11, 12	2.5/2.5
3250	General Biology 1 - Dual Enrollment - MCC	11, 12	2.5
3783	Microbiology - Honors	11, 12	2.5
3331/3332	Chemistry - College	10, 11, 12	2.5/2.5
3341/3342	Chemistry - Honors	10, 11, 12	2.5/2.5
3441/3442	Physics - Honors	11, 12	2.5/2.5
3461/3462	Physics 1 AP - Advanced	11, 12	5/5
3463/3464	Physics 2 AP - Advanced	11, 12	5/5
3465/3466	Physics C AP - Advanced	11, 12	5/5
3535	ESS: Geology - Honors	11, 12	2.5
3536	ESS: Meteorology - Honors	11, 12	2.5
3537	ESS: Oceanography - Honors	11, 12	2.5
3538	ESS: Astronomy – Honors	11, 12	2.5
3541/3542	Introduction to Human Anatomy - Honors	11, 12	2.5
3547	Earth & Human Activity - Honors	11, 12	2.5
3543/3544	Anatomy & Physiology - Honors	11, 12	2.5/2.5
3548	Genetics - Honors	11, 12	2.5
3560	Forensics Science - Honors	12	2.5

***\*note – The ESS designated courses are designed to follow the new 2016 Massachusetts Standards around Earth and Space Science.***

## Science Elective Courses (Cont.)

3721/3722	Chemistry - Dual Enrollment - UML -Advanced	11, 12	4/4
3723/3724	Chemistry Lab - Dual Enrollment UML -Advanced	11, 12	1/1
3735	Environmental Studies-Dual Enrollment MCC – Advanced	11, 12	2.5
3093/3094	M2D2 Partnership Experience	12	2.5/2.5
3552/3553	Clean Energy Career Explorations A - Honors	11, 12	2.5/2.5
9023/9024	Medical Terminology & Body Systems - Honors	11	2.5/2.5
9042	Careers in Health and Bioscience - Honors	11, 12	2.5
9052	Medical Law & Ethics - Honors	12	2.5
9062	Current Health Issues - Honors	11, 12	2.5
9082	Nutrition & Disease - Honors	11, 12	2.5
9092	Senior Externship - Honors	12	2.5

EXCEPTIONS TO PREREQUISITE REQUIREMENTS AS LISTED REQUIRE WRITTEN  
APPROVAL OF THE DEPARTMENT HEAD

## SCIENCE CORE COURSES

**3131/3132      INTEGRATED SCIENCE & ENGINEERING- College    9 (FA)                      2.5/2.5 Cr.**

Integrated Science will provide a foundation in the study of Physical Science, Engineering, and Biology. Students will be expected to develop of a qualitative understanding of fundamental course concepts through teacher-guided inquiry that includes hands-on activities, laboratory investigations, and teacher demonstrations. Students will be expected to apply algebra principles in solving both quantitative and qualitative problem. Students in this course will spend a set amount of time in the LHS Makerspace where they will design and print scientific models utilizing state of the art 3D printing technology. (Co-enrollment at the same level with 1131/1132 Algebra 1 - College)

**3141/3142      INTEGRATED SCIENCE & ENGINEERING - Honors    9 (FA)                      2.5/2.5 Cr.**

Integrated Science will provide a foundation in the study of Physical Science, Engineering and Biology. Students will be expected to develop of a qualitative understanding of fundamental course concepts through teacher-guided inquiry that includes hands-on activities, laboratory investigations, and teacher demonstrations. Students in this course will spend a set amount of time in the LHS Makerspace where they will design and print scientific models utilizing state of the art 3D printing technology. (Co-enrollment at the same level with 1141/1142 Algebra 1– Honors or 1251/1252 Geometry & Analytic Geometry – High Honors)



**3731/3732 PRINCIPLES OF BIOLOGY - UML - Advanced 11, 12 2.5/2.5 Cr.**

Principles of Biology is an advanced weighted, Dual Enrollment University of Massachusetts course designed for students who intend to pursue a major in biology, or a related field. Because a large volume of information will be presented at a rigorous pace, it is recommended that students taking this course be prepared to attend every class and commit a minimum of six hours of work outside of class every week.

**3250 GENERAL BIOLOGY 1 - (Dual Enrollment - MCC) - Advanced 11, 12 2.5 Cr.**

General Biology studies the cell, the fundamental unit of biological structure and function. An introductory section on bioenergetics and biochemistry lay the groundwork for the consideration of the cell through a modern interdisciplinary approach. The course examines the ultrastructure of the cell and of the most universal cell functions: transport, cellular respiration, photosynthesis, cellular reproduction, and protein synthesis. Lecture themes are illustrated in the laboratory. *PREREQUISITE: An overall GPA of 70 or better and a qualifying score on the Accuplacer (071 with no reading support). Successful completion of Biology and Chemistry.*

**3331/3332 CHEMISTRY - College 10, 11 2.5/2.5 Cr.**

Chemistry develops qualitative understanding of fundamental chemistry concepts through teacher-guided inquiry that includes direct teacher instruction, solving of problem sets, hands-on class activities, laboratory investigations, and demonstrations. *PREREQUISITE: Successful completion of Biology*

**3341/3342 CHEMISTRY - Honors 10, 11 2.5/2.5 Cr.**

Chemistry is a mathematically based course with topics that include properties of matter, atomic structure, periodicity, and chemical bonding, chemical reactions and stoichiometry, gases and kinetic molecular theory, properties of solutions, acids and bases, and equilibrium and kinetics. *PREREQUISITE: Enrolled in or Successful Completion of Honors Biology. 70 or Better in Algebra 1 Honors*

**3721/3722 CHEMISTRY - (Dual Enrollment - UML) - Advanced 11, 12 4/4 Cr.**  
**3723/3724 CHEMISTRY LAB - (Dual Enrollment - UML) - Advanced 11/12 1/1 Cr.**

Dual Enrollment Chemistry is an advanced weighted course introducing the basic principles of chemistry and including laboratory work. Topics include chemical calculations, atomic structure, the periodic table, basic bonding theory, solutions, liquids and gases, and thermodynamics. Students selecting this course may be required to take exams and/or do labs at the UML campus. UML Chemistry Lab runs simultaneously with this course. *PREREQUISITE: Successful completion of Chemistry - Honors with a minimum grade of 85.*

**3441/3442 PHYSICS - Honors 11, 12 2.5/2.5 Cr.**

Physics is an introduction to classical mechanics covering kinematics, Newton's laws, conservation laws, elasticity, fluids, oscillations, wave mechanics, sound phenomena, electricity, magnetism, electric circuits, and optics.

**3461/3462**      **AP PHYSICS 1 -Advanced**      **11, 12**      **5/5 Cr.**

AP Physics 1 explores principles of Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits. The course is based on six Big Ideas, which encompass core scientific principles, theories, and processes that cut across traditional boundaries and provide a broad way of thinking about the physical world. ***PREREQUISITES: No prior course work in physics is necessary. Students should have completed geometry and be concurrently taking Algebra II or an equivalent course. All AP courses require Department Head approval.***

**3463/3464**      **AP PHYSICS 2 -Advanced**      **11, 12**      **5/5 Cr.**

AP Physics 2 explores principles of fluids, thermodynamics, electricity, magnetism, optics, and topics in modern physics. The course is based on seven Big Ideas, which encompass core scientific principles, theories, and processes that cut across traditional boundaries and provide a broad way of thinking about the physical world. ***PREREQUISITES: Students should have taken and passed AP Physics 1 or achieved a high level of success in Honors Physics. Students should have taken or be concurrently taking Pre-Calculus or an equivalent course. All AP courses require Department Head approval.***

**3465/3466**      **AP PHYSICS C: MECHANICS - Advanced**      **11, 12**      **5 Cr.**

AP Physics X: Mechanics prepares the student to take the AP PHYSICS C: MECHANICS examination. The course covers the following six content areas: kinematics; Newton's laws of motion; work, energy, and power; systems of particles and linear momentum; circular motion and rotation; and oscillations and gravitation. AP Physics C MECHANICS covers fewer topics than AP PHYSICS 1 however subjects are covered in greater depth and with greater analytical and mathematical sophistication. AP Physics C is appropriate for students who intend to pursue an education in Engineering or the Physical Sciences at a top tier school. ***PREREQUISITE: Completion of Honors Algebra II and Geometry or Pre-Calculus. All AP courses require Department Head Approval.***

**3535**      **ESS: GEOLOGY - Honors**      **11, 12**      **2.5 Cr.**

Students will explain phenomena related to Earth's geological materials and systems, and develop models and explanations for the ways that feedbacks between different systems control the appearance of Earth's surface. The course will introduce Earth's interior processes and cycling of matter, with a focus on carbon cycling and an increase in carbon dioxide concentrations due to human activity.

**3536**      **ESS: METEOROLOGY - Honors**      **11, 12**      **2.5 Cr.**

Students will explain phenomena related to Earth's meteorological materials and systems, and develop models and explanations for the ways that feedbacks between different systems control the appearance of Earth's surface. The course will introduce Earth's atmospheric processes and cycling of matter, with a focus on carbon cycling and an increase in carbon dioxide concentrations due to human activity.

**3537**                    **ESS: OCEANOGRAPHY - Honors**                    **11, 12**                    **2.5 Cr.**

Students will explain phenomena related to Earth's hydrosphere and its systems, and develop models and explanations for the ways that feedbacks between different systems control the appearance of Earth's surface. The course will introduce the properties of water that affect Earth's materials and surface processes, with a focus on carbon cycling and an increase in carbon dioxide concentrations due to human activity.

**3538**                    **ESS: ASTRONOMY - Honors**                    **11, 12**                    **2.5 Cr.**

This course introduces students to the components that make up our universe. Topics include the history of astronomy, big bang theory, the origin of our solar system; the lives and deaths of stars; the structure and composition of our moon, planets, stars, solar systems and galaxies.

**3548**                    **GENETICS - Honors**                    **11, 12**                    **2.5 Cr.**

Genetics covers basic concepts of inheritance, variation and evolution in plants and animals, including a survey of Mendelian, molecular, cellular, and population genetics. Included will be an experiment involving breeding mutant *Drosophila* in order to discover Mendel's classic laws of inheritance. Students will learn about recent advances in biotechnology that have genetic implications, including the Human Genome Project and advances in genetic engineering technology.

**3541**                    **INTRODUCTION TO HUMAN ANATOMY - Honors**    **11, 12**                    **2.5 Cr.**

Introduction to Human Anatomy is a preparatory program for students who are interested in pursuing careers in the Allied Health fields. The course is designed for students who want an introduction to the structures and functions of the human body. Students will participate in class discussions, lectures, projects, and laboratory activities.

**3543/3544**            **HUMAN ANATOMY & PHYSIOLOGY - Honors**            **11, 12**                    **2.5/2.5 Cr.**

Human Anatomy & Physiology offers a systematic exploration of each of the major systems of the human body including both its structure (anatomy) and function (physiology) Anatomy and Physiology. Topics studied during the first are: Human Body Overview and Terminology, Biochemistry, Tissue Structure and Function, The Integumentary System, The Skeletal System, The Muscular System, and The Nervous System. Students will participate in class discussions, lectures, projects, and laboratory activities.  
***PREREQUISITE: 70 or above in Honors Biology. 80 or above in College Biology***

**3547**                    **ESS: EARTH & HUMAN ACTIVITY – Honors**                    **11, 12**                    **2.5 Cr.**

Earth & Human Activity helps students understand natural resources, natural hazards, human impact on Earth systems, and global climate change. Students understand the complex and significant interdependencies between humans and the rest of Earth's systems through the impacts of natural hazards, our dependencies on natural resources, and the significant environmental impacts of human activities



**3560 FORENSICS SCIENCE - Honors 12 2.5 Cr.**

Forensic Science models the work of forensic scientists and to introduce the knowledge and laboratory techniques used by forensic scientists in their analysis of crimes and in the role of forensic evidence in criminal and civil proceedings. Investigative procedures include crime scene processing and reconstruction, fingerprinting, evaluation of injuries and cause of death. This course is highly recommended for students who have an interest in the field of law enforcement.

**3735 ENVIRONMENTAL STUDIES - (Dual Enrollment - MCC) – Advanced 11, 12 2.5 Cr.**

An interdisciplinary course in ecological/environmental education designed to develop an understanding and awareness of our environment, how the environment can change and the effects of such change. The course explores the role which humans play in causing environmental change and the underlying values and ethical judgments involved in making choices. Includes the study of the structure and function of ecosystems, thermodynamics, and an examination of selected environmental problems. **MANDATORY: Students will participate in a capstone project using the engineering design process (EDP) to produce a working solution to an environmental pollution scenario. PREREQUISITE: An overall GPA of 70 or better and a qualifying score on the Accuplacer (071 with no reading support).**

**3783 MICROBIOLOGY - Honors 11, 12 2.5 Cr.**

Microbiology is the study of microscopic organisms, including bacteria, protozoa, fungi, parasitic worms, and viruses with emphasis on the role of these organisms in health and disease. This course is an intensive Laboratory Science that will demonstrate aseptic laboratory techniques, varied cultivation methods, and standard Biotechnology Diagnostic Procedures. **PREREQUISITE: 80 or above in Honors Biology.**

**3093/3094 M2D2 PARTNERSHIP EXPERIENCE - High Honors 11, 12 2.5/2.5 Cr.**

Massachusetts Medical Device Development (M2D2) develops how to identify market needs, develop concepts, create prototypes and understand regulatory affairs and intellectual property related to the field of medical devices in relation to the Life Sciences. Student's ideas will be vetted using industry best practices. Students will build a prototype and present their medical device idea to a group of medical device experts. Students in this course will spend a set amount of time in the LHS Makerspace @ M2D2 where they will design and print medical device models utilizing state of the art 3D printing technology **PREREQUISITE: Department Head Approval**

**3552 CLEAN ENERGY CAREER EXPLORATIONS A - Honors 11,12 2.5/2.5**

In this course students will learn essential student success skills, essential team building skills, and key workforce development skills related to renewable energy that they are then able to apply to increase their success in Clean Energy Career Explorations B during semester 2 . Additionally, students who successfully complete this course will receive 1 credit through MCC for course **IDS 101- General Education Seminar**

**3552 CLEAN ENERGY CAREER EXPLORATIONS B – Honors** **11,12** **2.5/2.5**

This course will introduce students to the main components of renewable energy with a career path through self-assessment. students explore our wide range of traditional and renewable energy sources and how these options impact our environment and society. Students are also exposed to the complex and compelling ethical issues raised by global, national and local changes in how we produce and use energy. Students who complete this course will be qualified for a full paid internship during the summer of 2018. *Students who successfully complete this course will receive 1 credit through MCC for course IDS 106-General Education Seminar Prerequisite-Clean Energy Career Explorations A.*

**9023/9024 MEDICAL TERMINOLOGY & BODY SYSTEMS - Honors** **11** **2.5/2.5 Cr.**

Medical Terminology & Body Systems establishes a foundation for future bioscience pathway courses in this initial course. Through lectures, class discussions, individual and group projects, as well as experiments, students will study the emerging field of bioscience, learn technical writing skills essential for this field, understand principles of organic/biochemistry, and observe technology used currently in bioscience. Students also analyze and interpret medical records subsequently transcribing their own medical record. This is an honors level class and students will be assigned advanced work to receive honors credit. *MCC ARTICULATION: MAS101 Medical Terminology PREREQUISITE: Successful completion of Biology*

**9042 CAREERS IN HEALTH & BIOSCIENCE - Honors** **11** **2.5 Cr.**

Careers In Health & Bioscience introduces students to career pathways in healthcare and bioscience, such as allied health and medical support services. This will be accomplished through lectures, class discussions, research projects, field trips and professional guest speakers. The major topics of study in allied health are as follows: pharmacology, rehab services, dental services, gerontology, social services, nutritionist, health education, medical genetics, mental health, public health, emergency medical technicians, and pharmacy assistant. Topics to be covered under medical support services include managed care, administrative services, medical assisting, and medical office management. The major topics of study in physician/nurse are as follows: medical doctor, registered nurse, licensed practical nurse, physician's assistant, nurse practitioner, and certified nursing assistant. The topics to be covered in medical technology are as follows: radiology technician, respiratory technician, laboratory technician, orthopedic technician, vision technician, audiology and medical imagery.

**9052 MEDICAL LAW & ETHICS - Honors** **12** **2.5 Cr.**

Medical Law & Ethics introduces legal and ethical responsibilities in the medical and bioscience/research fields. The importance of safety in the workplace is also emphasized. Students will take an in depth look at the safety, ethical, and legal issues involved in medical and biotechnology careers. This will be accomplished through lectures, assigned readings and reflections, class discussions, projects, fieldtrips, and guest speakers. Medical and biotechnological advancements will be incorporated. This is an honors level class and students will be assigned advanced work to receive honors credit.

**9062**                    **CURRENT HEALTH ISSUES - Honors**                    **11**                    **2.5 Cr.**

Current Health Issues undertakes an in depth analysis of the cause and effect of modern health issues. This course will also cover how health issues impact people's lives physically, socially, and economically. Through lectures, class discussions, and research utilizing the Internet to access updated information students will gain knowledge of the influence these issues have on the world today.

**9082**                    **NUTRITION & DISEASE - Honors**                    **12**                    **2.5 Cr.**

The first part of this course will be a study of the major nutrients, including their function, food sources, and the effect of deficiency and excess, as well as an examination of changing nutritional needs during the life cycle. The second part of the course will focus on disease where students will study the process of pathogenesis, identify human diseases, and learn the steps of disease prevention and control.

**9092**                    **SENIOR EXTERNSHIP - Honors**                    **12**                    **2.5 Cr.**

Senior Externship allows students to observe and practice skills and professional competencies needed to succeed in career pathways of healthcare and biotechnology. Students will relate what they learned in the Health and Bioscience Pathway to their externship experience. This will be accomplished through participation in Health or Biotechnology Externships in the community. The externships will take place during the second through eighth weeks of the term, following CPR/First Aid training/certification and a one-week orientation. This course will include a Capstone Project that students will work on during non-externship days.



**3731/3732 PRINCIPLES OF BIOLOGY - (DE UML) - Advanced 11, 12 4/4 Cr.**

Principles of Biology is an advanced weighted, Dual Enrollment University of Massachusetts course designed for students who intend to pursue a major in biology, or a related field. Because a large volume of information will be presented at a rigorous pace, it is recommended that students taking this course be prepared to attend every class and commit a minimum of six hours of work outside of class every week.

***PREREQUISITES: Successful completion of Biology - Honors and Chemistry - Honors.***

**3250 GENERAL BIOLOGY 1 - (DE MCC) - Advanced 11, 12 2.5 Cr.**

A study of the cell, the fundamental unit of biological structure and function. An introductory section on bioenergetics and biochemistry lay the groundwork for the consideration of the cell through a modern interdisciplinary approach. The course examines the ultrastructure of the cell and of the most universal cell functions: transport, cellular respiration, photosynthesis, cellular reproduction, and protein synthesis. Lecture themes are illustrated in the laboratory.

**3541 INTRODUCTION TO ANATOMY - Honors 11, 12 2.5 Cr.**

Anatomy & Physiology is a preparatory program for students who are interested in pursuing careers in Allied Health fields, physical education, art, psychology, and anthropology. The course is designed for students who want a more detailed explanation of the structures and functions of the human body beyond those already covered in biology or health classes. The topics to be studied during Anatomy & Physiology include Human Body Overview and Terminology, Biochemistry, Tissue Structure and Function, The Integumentary System, The Skeletal System, The Muscular System, and The Nervous System. Students will participate in class discussions, lectures, projects, and laboratory activities. ***PREREQUISITE: Successful completion of Biology***

**3543/3544 ANATOMY & PHYSIOLOGY - Honors 11, 12 2.5/2.5 Cr.**

Anatomy and Physiology is a preparatory program for students who are interested in pursuing careers in Allied Health fields, physical education, art, psychology, and anthropology. This course is designed for students who want a more detailed study of the structures and functions of the human body beyond those already covered in biology or health classes. Topics studied during the first semester are: Human Body Overview and Terminology, Biochemistry, Tissue Structure and Function, The Integumentary System, The Skeletal System, The Muscular System, and The Nervous System. Students will participate in class discussions, lectures, projects, and laboratory activities. ***PREREQUISITE: Successful completion of Honors Biology. 85 or better in College Biology.***

**3548 GENETICS - Honors 11, 12 2.5 Cr.**

Genetics covers basic concepts of inheritance, variation and evolution in plants and animals, including a survey of Mendelian, molecular, cellular, and population genetics. Included will be an experiment involving breeding mutant *Drosophila* in order to discover Mendel's classic laws of inheritance. Students will learn about recent advances in biotechnology that have genetic implications, including the Human Genome Project and advances in genetic engineering technology.



**9062**                    **CURRENT HEALTH ISSUES - Honors**                    **11**                    **2.5 Cr.**

Current Health Issues undertakes an in depth analysis of the cause and effect of modern health issues. This course will also cover how health issues impact people's lives physically, socially, and economically. Through lectures, class discussions, and research utilizing the Internet to access updated information students will gain knowledge of the influence these issues have on the world today. This is an honors level class and students will be assigned advanced work to receive honors credit.

**9082**                    **NUTRITION & DISEASE - Honors**                    **12**                    **2.5 Cr.**

Nutrition and Disease studies the major nutrients, including their function, food sources, and the effect of deficiency and excess, as well as an examination of changing nutritional needs during the life cycle. Students will explore weight management and energy balance, nutrition as it relates to overall fitness, food systems and food safety.

**9092**                    **SENIOR EXTERNSHIP - Honors**                    **12**                    **5 Cr.**

Senior Externship allows students to observe and practice skills and professional competencies needed to succeed in career pathways of healthcare and biotechnology. Students will relate what they learned in the Health and Bioscience Pathway to their externship experience. This will be accomplished through participation in Health or Biotechnology Externships in the community. The externships will take place during the second through eighth weeks of the term, following CPR/First Aid training/certification and a one-week orientation. This course will include a Capstone Project that students will work on during non-externship days.

## ENGINEERING

3911/3912	Introduction to Engineering Design (PLTW) - Honors	10, 11, 12	2.5/2.5
3921/3922	Principles of Engineering (PLTW) - Honors	10, 11, 12	2.5/2.5
3971	Introduction to Engineering - (DE MCC) - Advanced	12	2.5
3953/3954	Robotics - Honors	10, 11, 12	2.5/2.5
3945/3946	Architectural Design - Honors	10, 11, 12	2.5/2.5
3978	Engineering Externship - Honors	12	2.5

**3911/3922      INTRODUCTION TO ENGINEERING DESIGN (PLTW) - Honors**  
**10, 11, 12      2.5/2.5 Cr.**

Introduction to Engineering Design (IED) is a high school level course that is appropriate for students who are interested in design and engineering. The major focus of the IED course is to expose students to the design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards, and technical documentation. IED gives students the opportunity to develop skills and understanding of course concepts through activity-, project-, and problem-based (APPB) learning. Used in combination with a teaming approach, APPB-learning challenges students to continually hone their interpersonal skills, creative abilities and understanding of the design process. It also allows students to develop strategies to enable and direct their own learning, which is the ultimate goal of education. Introduction to Engineering Design is the first of three foundation courses in the Project Lead The Way (PLTW) high school pre-engineering program. The course applies and concurrently develops secondary level knowledge and skills in mathematics, science, and technology

**3921/3922      PRINCIPLES OF ENGINEERING (PLTW) - Honors      11, 12      2.5/2.5 Cr.**

Principles Of Engineering (POE) is a high school-level survey course of engineering. The course exposes students to some of the major concepts that they will encounter in a postsecondary engineering course of study. Students have an opportunity to investigate engineering and high tech career POE gives students the opportunity to develop skills and understanding of course concepts through activity-, project-, and problem-based (APPB) learning. Used in combination with a teaming approach, APPB learning challenges students to continually hone their interpersonal skills, creative abilities, and problem solving skills based upon engineering concepts. It also allows students to develop strategies to enable and direct their own learning, which is the ultimate goal of education. Principles of Engineering is the second of three foundation courses in the Project Lead The Way high school engineering program.  
***PREREQUISITE: Successful completion of 3911/3912 Introduction to Engineering Design (PLTW).***





## ADVANCED PLACEMENT & DUAL ENROLLMENT SCIENCE COURSES

### ADVANCED PLACEMENT

**3461/3462**      **AP PHYSICS 1 - Advanced**      **11, 12**      **5/5 Cr.**

AP Physics 1 prepares students to take the AP Physics 1B examination. Physics 1 AP covers Newtonian Mechanics, Kinematics, Newton's Laws of Motion, Work, Energy, Power, Linear Momentum, Circular Motion and Rotation, Oscillations and Gravitation, and Thermal Physics. This course meets ten periods per week and primarily deals with the theory of proceeding topics, Fluid Mechanics, Electricity and Magnetism, Waves, Optics, and Atomic and Nuclear Physics. **PREREQUISITE: Successful completion of Algebra 2 - Honors and Geometry or Pre-Calculus. All AP courses require Department Head Approval.**

**3463/3464**      **AP Physics 2 – Advanced**      **11, 12**      **2.5/2.5 Cr.**

AP Physics 2 explores principles of fluids, thermodynamics, electricity, magnetism, optics, and topics in modern physics. The course is based on seven Big Ideas, which encompass core scientific principles, theories, and processes that cut across traditional boundaries and provide a broad way of thinking about the physical world. **PREREQUISITES: Students should have taken and passed AP Physics 1 or achieved a high level of success in Honors Physics. Students should have taken or be concurrently taking Pre-Calculus or an equivalent course. All AP courses require Department Head approval**

**3463**      **AP PHYSICS C: MECHANICS - Advanced**      **11, 12**      **2.5 Cr.**

AP Physics C: Mechanics examines the following six content areas: kinematics; Newton's laws of motion; work, energy, and power; systems of particles and linear momentum; circular motion and rotation; and oscillations and gravitation. AP Physics C Mechanics covers fewer topics than AP PHYSICS 1 however subjects are covered in greater depth and with greater analytical and mathematical sophistication. AP Physics C is appropriate for students who intend to pursue an education in Engineering or the Physical Sciences at a top tier school. **PREREQUISITE: Completion of Honors Algebra II and Geometry or Pre-Calculus. All AP courses require Department Head Approval.**

**3464**      **AP PHYSICS C: ELECTRICITY & MAGNETISM - Advanced**  
**11, 12**      **2.5 Cr.**

AP Physics C: Electricity and Magnetism examines the following five content areas: electrostatics; conductors, capacitors, and dielectrics; electric circuits; magnetic fields; and electromagnetism. The AP Physics C Electricity & Magnetism covers fewer topics than AP Physics 2 however subjects are covered in greater depth and with greater analytical and mathematical sophistication. AP Physics C is appropriate for students who intend to pursue an education in Engineering or the Physical Sciences at a top tier school. **PREREQUISITE: Completion of AP PHYSICS C: MECHANICS.**

## DUAL ENROLLMENT - UML

<b>3721/3722</b>	<b>CHEMISTRY - (DE UML) - Advanced</b>	<b>11, 12</b>	<b>4/4 Cr.</b>
<b>3723/3724</b>	<b>CHEMISTRY LAB - (DE UML) - Advanced</b>	<b>11/12</b>	<b>1/1 Cr.</b>

Dual Enrollment Chemistry introduces the basic principles of chemistry and including laboratory work. Topics include chemical calculations, atomic structure, the periodic table, basic bonding theory, solutions, liquids and gases, and thermodynamics. Students selecting this course may be required to take exams and/or do labs at the UML campus. UML Chemistry Lab runs simultaneously with this course.

***PREREQUISITE: Successful completion of Chemistry - Honors with a minimum grade of 85.***

<b>3731/3732</b>	<b>PRINCIPLES OF BIOLOGY - (DE UML) - Advanced</b>	<b>11, 12</b>	<b>2.5/2.5 Cr.</b>
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Principles of Biology is an advanced weighted, Dual Enrollment University of Massachusetts course designed for students who intend to pursue a major in biology, or a related field. Because a large volume of information will be presented at a rigorous pace, it is recommended that students taking this course be prepared to attend every class and commit a minimum of six hours of work outside of class every week.

***PREREQUISITES: Successful completion of Biology - Honors and Chemistry - Honors.***

## DUAL ENROLLMENT - MCC

**3250**                    **GENERAL BIOLOGY - (DE MCC) - Advanced**                    **11, 12**                    **2.5 Cr.**

General Biology is a study of the cell, the fundamental unit of biological structure and function. An introductory section on bioenergetics and biochemistry lay the groundwork for the consideration of the cell through a modern interdisciplinary approach. The course examines the ultrastructure of the cell and of the most universal cell functions: transport, cellular respiration, photosynthesis, cellular reproduction, and protein synthesis. Lecture themes are illustrated in the laboratory.

**3735**                    **ENVIRONMENTAL STUDIES - (DE MCC) - Advanced**                    **11, 12**                    **2.5 Cr.**

Environmental Studies is an interdisciplinary course in ecological/environmental education designed to develop an understanding and awareness of our environment, how the environment can change and the effects of such change. The course explores the role which humans play in causing environmental change and the underlying values and ethical judgments involved in making choices. Includes the study of the structure and function of ecosystems, thermodynamics, and an examination of selected environmental problems. **MANDATORY: Students will participate in a capstone project using the engineering design process (EDP) to produce a working solution to an environmental pollution scenario. PREREQUISITE: An overall GPA of 70 or better and a qualifying score on the Accuplacer (071 with no reading support).**

**3971**                    **INTRO TO ENGINEERING - (DE MCC) - Advanced**                    **12**                    **2.5 Cr.**

Intro to Engineering introduces principles and methods of engineering for students planning to transfer to a baccalaureate engineering program will be examined in depth. The course will introduce the student to engineering design methods and tools, and their application in solving engineering problems from various engineering disciplines. Skills required for career success such as teamwork, written and oral communication, and problem solving will be emphasized.

# FOREIGN LANGUAGE

It is the goal of the Foreign Language Department that every student achieves an ability to understand, speak, read and write in the target language, while at the same time developing global awareness and knowledge of different cultures. The completion of two years of the same foreign language satisfies the minimal high school foreign language prerequisite for entrance to most four-year colleges. It should be noted that many institutions of higher learning require three or four years of foreign language study at the high school level. This shows a level of commitment and sense of purpose.

It is strongly recommended that all students select one (1) Foreign Language course. Parents and students should give careful consideration to which language they choose, as the students will not likely be able to change languages once they have returned their signed course selection worksheet to their guidance counselor. They may choose from a Foreign Language offered at Advanced Placement, Honors, College, and Heritage Language Speaker level. A student may generally not elect a beginning level language class after the first two weeks of school. Students are advised to take the two years of a language consecutively, as leaving a gap between courses may jeopardize students' chances of passing. Students who choose to begin their language study at Lowell High School at the second or third year level should contact the Department Head for an interview or a placement exam. Heritage Language speakers will also take a placement exam to determine proper scheduling. During the 2017-2018 academic year, Latin will have honors and AP sections; French, Khmer and Spanish will have separate honors and college sections for most levels; and Portuguese will have the honors levels. During this academic year we will also be looking at the possibility of students taking dual enrollment classes.

## LATIN

2113/2114	Latin 1 - Honors	9, 10, 11, 12	2.5/2.5
2123/2124	Latin 2 - Honors	9, 10, 11, 12	2.5/2.5
2133/2134	Latin 3 - Honors	10, 11, 12	2.5/2.5
2135/2136	Latin 3 - Advanced	10, 11	2.5/2.5
2143/2144	Latin 4 - Honors	11, 12	2.5/2.5
2145/2146	Latin 4 AP - Advanced	12	2.5/2.5

## PORTUGUESE

2613/2614	Portuguese 1 - Honors	9, 10, 11, 12	2.5/2.5
2623/2624	Portuguese 2 - Honors	9, 10, 11, 12	2.5/2.5
2633/2634	Portuguese 3 - Honors	10, 11, 12	2.5/2.5
2643/2644	Portuguese 4 - Honors	11, 12	2.5/2.5

## FRENCH

2311/2312	French 1 - College	9, 10, 11, 12	2.5/2.5
2313/2314	French 1 - Honors	9, 10, 11, 12	2.5/2.5
2321/2322	French 2 - College	9, 10, 11, 12	2.5/2.5
2323/2324	French 2 - Honors	9, 10, 11, 12	2.5/2.5
2331/2332	French 3 - College	10, 11, 12	2.5/2.5
2333/2334	French 3 - Honors	10, 11, 12	2.5/2.5
2341/2342	French 4 - College	10, 11, 12	2.5/2.5
2343/2344	French 4 - Honors	10, 11, 12	2.5/2.5
2361/2362	French Text, Film & Media - Honors	10, 11, 12	2.5

## SPANISH

2511/2512	Spanish 1 - College	9, 10, 11, 12	2.5/2.5
2513/2514	Spanish 1 - Honors	9, 10, 11, 12	2.5/2.5
2521/2522	Spanish 2 - College	9, 10, 11, 12	2.5/2.5
2523/2524	Spanish 2 - Honors	9, 10, 11, 12	2.5/2.5
2531/2532	Spanish 3 - College	9, 10, 11, 12	2.5/2.5
2533/2534	Spanish 3 - Honors	9, 10, 11, 12	2.5/2.5
2535/2536	Spanish 3 - Advanced	10, 11	2.5/2.5
2541/2542	Spanish 4 - College	10, 11, 12	2.5/2.5
2543/2544	Spanish 4 - Honors	10, 11, 12	2.5/2.5
2545/2546	Spanish 4 (AP) - Advanced	11, 12	2.5/2.5
2553/2554	Spanish Conversation - Honors	10, 11, 12	2.5/2.5
2561/2562	Spanish Literature	10, 11, 12	2.5/2.5
2503/2504	Spanish 1 - Heritage Speaker - Honors	9, 10, 11, 12	2.5/2.5
2507/2508	Spanish 2 - Heritage Speaker - Honors	10, 11, 12	2.5/2.5

## KHMER

2711/2712	Khmer 1 - College	9, 10, 11, 12	2.5/2.5
2713/2714	Khmer 1 - Honors	9, 10, 11, 12	2.5/2.5
2721/2722	Khmer 2 - College	9, 10, 11, 12	2.5/2.5
2723/2724	Khmer 2 - Honors	9, 10, 11, 12	2.5/2.5
2731/2732	Khmer 3 - College	10, 11, 12	2.5/2.5
2733/2734	Khmer 3 - Honors	10, 11, 12	2.5/2.5
2741/2742	Khmer 4 - College	11, 12	2.5/2.5
2743/2744	Khmer 4 - Honors	11, 12	2.5/2.5

EXCEPTIONS TO PREREQUISITE REQUIREMENTS AS LISTED REQUIRE WRITTEN  
APPROVAL OF THE DEPARTMENT HEAD

## FOREIGN LANGUAGE COURSES









## FRENCH

**2311/2312 FRENCH 1 - College 9, 10, 11, 12 2.5/2.5 Cr.**

French 1 - College provides an introduction to the French language: basic grammar, conversation, and reading and writing, and an introduction to the customs and traditions of French-speaking countries.

**2313/2314 FRENCH 1 - Honors 9, 10, 11, 12 2.5/2.5 Cr.**

French 1 - Honors is an accelerated course offered to students with no previous knowledge of French. Grammatical and idiomatic structures, reading, correct pronunciation, oral practice, listening comprehension, and customs and traditions of French-speaking countries are introduced at a quicker pace.

**2321/2322 FRENCH 2 - College 9, 10, 11, 12 2.5/2.5 Cr.**

French 2 - College encompasses a continued explanation of the fundamentals of the French language. A more concentrated study of grammar and an increased emphasis on speaking, aural comprehension, reading comprehension, and writing in the foreign language. **PREREQUISITE: Successful completion of French 1.**

**2323/2324 FRENCH 2 - Honors 9, 10, 11, 12 2.5/2.5 Cr.**

French 2 - Honors provides a more detailed oral-aural continuation of fundamental grammar and progressively greater emphasis on reading and writing skills. Since most students are highly motivated and college-bound, this class proceeds as rapidly as possible to meet the highest standards of college entrance requirements. **PREREQUISITE: Successful completion of French 1 - Honors or permission of Department Head.**

**2331/2332 FRENCH 3 - College 10, 11, 12 2.5/2.5 Cr.**

French 2 - Honors provides a more detailed oral-aural continuation of fundamental grammar and progressively greater emphasis on reading and writing skills. Since most students are highly motivated and college-bound, this class proceeds as rapidly as possible to meet the highest standards of college entrance requirements. **PREREQUISITE: Successful completion of French 1 - Honors or permission of Department Head.**

**2333/2334 FRENCH 3 - Honors 10, 11, 12 2.5/2.5 Cr.**

French 3 - Honors entails written and oral work based on an analysis of texts. A total picture of grammar is presented with special emphasis on expanded idiom study. The student is required to do an adequate amount of reading both intensive and comprehensive. Pace of course is rapid. **PREREQUISITE: Successful completion of French 2 - Honors or permission of the Department Head.**





**2535/2536 SPANISH 3 AP – Advanced 11 2.5/2.5 Cr.**

Spanish 3 AP prepares the student for taking the AP Spanish Language Exam, this course will focus on grammar and writing, listening comprehension, picture stories, and spontaneous speaking as a preparation for taking the exam at the end of Spanish 4 AP. This is the first of a two year program. ***PREREQUISITE: Successful completion of Spanish 2 - Honors with a minimum grade of 90 suggested, or permission of the Department Head. All AP courses require Department Head Approval.***

**2541/2542 SPANISH 4 - College 11, 12 2.5/2.5 Cr.**

Spanish 4 - College is a continuation of work done in Spanish 3 - College with emphasis on vocabulary building through a study of idiomatic expressions and selected readings. Aural comprehension and oral expression skills are strengthened. ***PREREQUISITE: Successful completion of Spanish 3.***

**2543/2544 SPANISH 4 - Honors 11, 12 2.5/2.5 Cr.**

Spanish 4 - Honors is for those students who wish to perfect their skills in reading, writing and speaking Spanish. Literature is read and oral work is required. The finer points of grammar are studied. ***PREREQUISITE: Successful completion of Spanish 3 - Advanced or successful completion of Spanish 3 - Honors or permission of the Department Head.***

**2545/2546 SPANISH 4 AP – Advanced 11, 12 2.5/2.5 Cr.**

A continuation course of Spanish 3 AP, this course is designed to complete the preparation for taking the AP Spanish Language Exam. This course will use a variety of materials to strengthen all four language skills: listening, speaking, reading, and writing. This is the second of a two year program. ***PREREQUISITE: Successful completion of Spanish 3 - Advanced. A minimum grade of 80 in Semester 1 is required to continue. . All AP courses require Department Head Approval.***

**2553/2554 SPANISH CONVERSATION - Honors 11, 12 2.5/2.5 Cr.**

Spanish Conversation - Honors is an accelerated course offered to High Intermediate Limited Spanish proficient students who wish to express themselves on "everyday" topics. Students will utilize more advanced grammatical skills such as the subjunctive. This course is not a replacement for courses Spanish 3 or Spanish 4, although it may be elected in addition to them. ***PREREQUISITE: Successful completion of Spanish 2 - Honors with a minimum grade of 70 or successful completion of Spanish 2 - College with a minimum grade of 85.***

**2503/2504 SPANISH 1 - HERITAGE SPEAKER - Honors 9, 10, 11, 12 2.5/2.5 Cr.**

Spanish 1 - Heritage Speaker is for students who have native listening/speaking skills in Spanish, and who seek to meet college entrance requirements. This course emphasizes correct pronunciation, formal grammar (verb tenses, pronouns, etc.), listening comprehension, reading and writing in the foreign language, and a study of the customs and traditions of the Spanish-speaking people. It will initially move at a quicker pace than Spanish 1 - Honors, and will have a different emphasis, - more on reading and writing structure, with a rapid review of basic vocabulary. ***PREREQUISITE: Placement through exam or consultation with the Department Head.***

**2507/2508      SPANISH 2 - HERITAGE SPEAKER - Honors      10, 11, 12      2.5/2.5 Cr.**

Spanish 2 - Heritage Speaker is for students who have native listening/speaking skills in Spanish, and who seek to meet college entrance requirements. This course emphasizes correct pronunciation, formal grammar (verb tenses, pronouns, etc.), listening comprehension, reading and writing in the foreign language, and a study of the customs and traditions of the Spanish-speaking people. It will continue the work done in Spanish 1 - Heritage Speaker, and will have an increased emphasis on reading and writing structure, with additional vocabulary and cultural investigation. ***PREREQUISITE: Successful completion of Spanish 1 - Heritage Speaker.***

**2561/2562      SPANISH LITERATURE - Honors      10, 11, 12      2.5/2.5 Cr.**

Spanish Literature - Is for students who wish to further explore the rich literary heritage of Spain and the Spanish speaking world. Selected readings will provide the basis for stylistic and textual analysis and understanding of the structure of literary works and the cultures that produced them. Authors may include Lope de Vega, Miguel Cervantes, Isabel Allende, Gabriel Garcia Marquez, Jorge Luis Borges, and Carlos Fuentes among others. ***PREREQUISITE: Department Head Approval***



# CULINARY & FOODS

The Culinary Arts Program is for students interested in careers within the Food Service and/or Hospitality Industry. The Hospitality industry is one of the largest and fastest growing industries in the world. The Culinary Program is a three-year program that follows a rigorous academic curriculum, but it also provides “hands-on” training in a student-operated restaurant. Students are exposed to different cooking and baking techniques a variety of table services, and customer relations. All students complete the program with a portfolio and enough experience to secure an entry-level position within the Food Service and/or Hospitality Industry, although many choose to further their careers via the gateway to higher education. Food Related Courses provide an overview of the underlying science of cooking, and the role food plays in our daily lives in regards to diet and regional preferences.

## CULINARY

5111/5112	Culinary Arts - Beginners - College	10, 11, 12	5/5
5311/5312	Culinary Arts - Beginners - Honors	10, 11, 12	5/5
5113/5114	Culinary Arts - Intermediate - College	11, 12	5/5
5313/5314	Culinary Arts - Intermediate - Honors	11, 12	5/5
5121/5122	Culinary Arts - Advanced - College	12	5/5
5315/5316	Culinary Arts - Advanced - Honors	12	5/5
5317/5318	Hospitality Internship - Honors	12	2.5/2.5

Culinary Arts classes are block classes and run for 2 periods

## FOODS

5085	The Science of Cooking - College	9, 10, 11, 12	2.5
5087	Nutrition and Dietary Choices - College	9, 10, 11, 12	2.5
5086	Regional Cuisine - College	9, 10, 11, 12	2.5
5088	International Foods - College	9, 10, 11, 12	2.5

## BUSINESS RELATED COURSES

6111/6112	Accounting - College	10, 11, 12	2.5/2.5
6113/6114	Accounting - Honors	10, 11, 12	2.5/2.5
6311/6312	Marketing & Entrepreneurship- College	10, 11, 12	2.5/2.5
6313/6314	Marketing & Entrepreneurship- Honors	10, 11, 12	2.5/2.5
6353	Tourism and Hotel Management - College	10, 11, 12	2.5





**5121/5122 CULINARY ARTS - Advanced - College 12 5/5 Cr.**

Culinary Arts - Advanced for the third year Culinary Arts student. While working in the Daniel P. Kane Courtyard Restaurant, students will work independently on various tasks and projects. These students will also explore the many facets of onsite catering. *ARTICULATION with MCC, Johnson & Wales and Central Maine Community College* **NOTE: This class meets every day for two periods.**  
**PREREQUISITE: Successful completion of Culinary Arts - Intermediate**

**5315/5316 CULINARY ARTS - Advanced - Honors 12 5/5 Cr.**

Culinary Arts - Advanced for the third year Culinary Arts student. While working in the Daniel P. Kane Courtyard Restaurant, students will work independently on various tasks and projects. These students will also explore the many facets of onsite catering. *ARTICULATION with MCC, Johnson & Wales and Central Maine Community College* **NOTE: This class meets every day for two periods.**  
**PREREQUISITE: Successful completion of Culinary Arts - Intermediate**

**5317/5318 HOSPITALITY INTERNSHIP - Honors (S1) 10, 11, 12 2.5/2.5 Cr.**

Hospitality Internship students who desire to further their culinary background and gain work experience. These students support staff in preparing daily soups, salad bar, and breakfast pastry for the student-operated Daniel P. Kane Courtyard Restaurant. **NOTE: This internship meets every day for one period.**  
**PREREQUISITE: Permission of the teacher.**

## FOODS COURSES

**5085 THE SCIENCE OF COOKING - College (S1)** **9, 10, 11, 12** **2.5 Cr.**

The Science of Cooking encompasses a variety of food related subjects and offers basic cooking skills that are important for everyone to have. Take a heaping bowl of nutrition, sprinkle with science, and stir in a dash of writing. Blend in a pinch of mathematics and simmer. Serve with cooking techniques and culinary skills. Explore the relationship between food and a variety of subjects across the curriculum.

**5087 NUTRITION AND DIETARY CHOICES - College (S2)** **9, 10, 11, 12** **2.5 Cr.**

In today's world people's food choices have a direct impact on their health and wellbeing along with an impact on their wallet. Take a peek into carnivore, herbivore, vegetarian and vegan lifestyles while exploring the new lifestyle of organic foods, farm-to-table diets, paleo diets, and other alternative diet choices. Let's explore the science of diets and how it can impact your lifestyle.

**5086 REGIONAL CUISINES - College (S1)** **9, 10, 11, 12** **2.5 Cr.**

Travel our 50 states to find the best foods America has to offer. This course explores the awesome foods this country has to offer both now and throughout history. Learn about the regional foods of the United States geographically, historically and tastefully.

**5088 INTERNATIONAL FOODS - College (S2)** **9, 10, 11, 12** **2.5 Cr.**

Join us as we explore foreign foods from around the world both familiar and unique. We'll visit the four corners of the world learning about foods and cultures of countries in Europe, Asia, Africa and the Americas. Broaden your knowledge of geography, history, foreign customs and foods from our friends around the world.

# BUSINESS

The Business Department offers electives that benefit all students. Students have the opportunity to explore different areas of the business world while attaining marketable skills in accounting, finance, marketing, and computers.

Students can take courses in the Business Department using two different routes. First, students can pick and choose electives to fill out their schedule. Students may also choose to become part of the Business Marketing and Finance Pathway. Another exciting opportunity offered to students through the Business Department is the chance to compete academically with schools around the country through affiliations with Business Professionals of America (BPA).

## BUSINESS COURSES

6013	Google This - College	9, 10, 11, 12	2.5
6111/6112	Accounting - College*	10, 11, 12	2.5/2.5
6113/6114	Accounting - Honors*	10, 11, 12	2.5/2.5
6211	Business Law 1 - College*	10, 11, 12	2.5
6212	Business Law 2 - College*	10, 11, 12	2.5
6213	Business Law 1 - Honors*	10, 11, 12	2.5
6214	Business Law 2 - Honors*	10, 11, 12	2.5
6141	Personal Finance - College*	10, 11, 12	2.5
6143	Personal Finance - Honors*	10, 11, 12	2.5
6161/6162	Intro to Financial Services (JDCU) - College*	12	2.5/2.5
6311/6312	Marketing & Entrepreneurship - College*	10, 11, 12	2.5/2.5
6313/6314	Marketing & Entrepreneurship - Honors*	10, 11, 12	2.5/2.5
6315/6316	Retail Marketing - Honors	11, 12	2.5
6350	Sports & Entertainment Marketing- College	10, 11, 12	2.5
6352	Fashion Merchandising - College	10, 11, 12	2.5
6353	Tourism and Hotel Management - College	10, 11, 12	2.5

### Related Courses

1353/1354	Financial Algebra - College	11, 12	2.5/2.5
0523	Public Speaking, Persuasion, and Presentations - College	12	2.5
0524	Public Speaking, Persuasion, and Presentations - Honors	12	2.5

\*Articulated Courses with MCC. Students must receive a grade of 80 or better.







## MARKETING

**6311/6312      MARKETING & ENTREPRENEURSHIP - College                      10, 11, 12                      2.5/2.5 Cr.**

Marketing students will learn opportunity recognition, ownership, competitive advantage, marketing activities, finance and product development in this yearlong overview of Entrepreneurship. After identifying an idea for your own business, students will prepare and refine a presentation based business plan that they will present to a panel of judges. Through fun and engaging activities, students will process through design and have the opportunity to compete in various in-class activities. Students will experience buying and selling products through a wholesale buying experience, engaging in all facets of business ownership. A representative from the Network for Teaching Entrepreneurship (NFTE) will join the classroom throughout the year to make learning fun and rewarding. *MCC ARTICULATION: BUS240 Principles of Marketing*

**6313/6314      MARKETING & ENTREPRENEURSHIP - Honors                      10, 11, 12                      2.5/2.5 Cr.**

Marketing students will learn opportunity recognition, ownership, competitive advantage, marketing activities, finance and product development in this yearlong overview of Entrepreneurship. After identifying an idea for your own business, students will prepare and refine a written business plan that they will present to a panel of judges. Through fun and engaging activities, students will process through design and have the opportunity to compete in various in-class activities. Students will experience buying and selling products through a wholesale buying experience, engaging in all facets of business ownership. A representative from the Network for Teaching Entrepreneurship (NFTE) will join the classroom throughout the year to make learning fun and rewarding. *MCC ARTICULATION: BUS240 Principles of Marketing*

**6315/6316      RETAIL MARKETING - Honors    11, 12    2.5/2.5 Cr.**

This specialized course enables students to learn business organization as well as operation skills and techniques in a realistic business setting. Classes are held in The 1826 School Store with instruction in marketing, merchandising, and management enhanced by the opportunity for students to meet and work with others in a professional work place setting. Due to the unique structure of this course, excellent attendance is mandatory. *PREREQUISITE: Successful completion of a business course*

**6350                      SPORTS & ENTERTAINMENT MARKETING - College**  
**10, 11, 12                      2.5 Cr.**

Sports & Entertainment introduces students to basic principles of Marketing and how they relate specifically to the sports and entertainment industries. Students will create a Marketing plan that will be presented to a member of the New England Patriots Marketing staff as part of a field trip to Gillette Stadium. Students will also take part in a simulation in which they are the running a stadium and will apply their skills and knowledge to run the stadium, book concerts and set ticket prices to maximize the profit of the stadium.



**6352                      FASHION MERCHANDISING - College                      10, 11, 12                      2.5 Cr.**

Fashion Marketing generates billions of dollars in sales for the fashion industry. Learn about the world of fashion in this fun, stylish class with a variety of hands-on activities as students gain understanding of fashion around the world. Explore the production of fashion while learning about a variety of fashion products and follow the process from raw materials to finished goods for consumers. Students will evaluate Fashion events from across the globe to better understand the global impact of fashion.

**6353                      TOURISM AND HOTEL MANAGEMENT - College                      10, 11, 12                      2.5 Cr.**

Explore the hospitality and tourism industry with a focus on Hotel Management through the day to day operations of a full service hotel. You will learn to make hourly and daily business decisions that go into running a high-end successful hotel. Additionally, students who successfully complete the simulation will be able to apply for the American Hotel and Lodging Educational Institute certification for the Hospitality Tourism and Management industry! Hands-on projects will also round out your knowledge of the travel industry with the option to travel the world from your seat or through a variety of educational tours offered with LHS educators.

# FINE ARTS

The Mission of the Fine Arts Department of Lowell High School is to provide all students with a wide variety of high quality artistic experiences in Dance, Music, Theater and Visual Arts and to encourage creativity, the development of a unique artistic voice, and the enthusiastic pursuit of excellence in the Arts.

The Philosophy of the Fine Arts Department at Lowell High School is to encourage all students to learn in, about, and through the Arts as a process of intellectual growth and self-discovery and as a contribution to the advancement of our collective cultural heritage. We believe that the creative process is essential to learning and we endeavor to provide a diverse, comprehensive, and sequential curriculum that includes creating, performing, presenting, and producing, making aesthetic judgments as well as responding to the numerous connections between art and life. At the core of this creative work is using one's risk-taking, curiosity and collaborative abilities. We challenge students to become life-long learners who understand and appreciate the potential of the Arts. We strive to build student confidence and resiliency that fundamentally transforms students into creative thinkers with 21st Century skills.

## PERFORMING ARTS

7139/7140	Band - Honors	9,10,11,12	2.5/2.5
7141/7142	Band 1 - Honors	9	2.5/2.5
7143/7144	Band 2 - Honors	10	2.5/2.5
7145/7146	Band 3 - Honors	11	2.5/2.5
7147/7148	Band 4 - Honors	12	2.5/2.5
7151/7152	Jazz Band 1 - Honors	9	2.5/2.5
7153/7154	Jazz Band 2 - Honors	10	2.5/2.5
7155/7156	Jazz Band 3 - Honors	11	2.5/2.5
7157/7158	Jazz Band 4 - Honors	12	2.5/2.5
7011/7012	String Ensemble 1 - Honors	9	2.5/2.5
7013/7014	String Ensemble 2 - Honors	10	2.5/2.5
7015/7016	String Ensemble 3 - Honors	11	2.5/2.5
7017/7018	String Ensemble 4 - Honors	12	2.5/2.5
7299/7300	Show Choir - Honors	9	2.5/2.5
7301/7302	Show Choir 1 - Honors	9	2.5/2.5
7303/7304	Show Choir 2 - Honors	10	2.5/2.5
7305/7306	Show Choir 3 - Honors	11	2.5/2.5
7307/7308	Show Choir 4 - Honors	12	2.5/2.5

7341/7342	Concert Chorus 1 - Honors	9	2.5/2.5
7343/7344	Concert Chorus 2 - Honors	10	2.5/2.5
7345/7346	Concert Chorus 3 - Honors	11	2.5/2.5
7347/7348	Concert Chorus 4 - Honors	12	2.5/2.5
7905/7906	Dance 1/Dance 2 - Honors	9, 10, 11, 12	2.5/2.5
7907/7908	Dance 3/Dance 4 - Honors	10, 11, 12	2.5/2.5
7953/7954	Advanced Dance Studies - Honors	11, 12	2.5/2.5
7983/7984	Senior Dance Project - Honors	12	2.5/2.5
7411	Drama 1: Fundamentals of Acting - Honors	9, 10, 11, 12	2.5/2.5
7412	Drama 2: The Technical Theater - Honors	9, 10, 11, 12	2.5/2.5

## MUSIC ELECTIVES

7125	World of Drums – Non-Weighted	9, 10, 11, 12	2.5/2.5
7121/7122	Beginning Piano Keyboard & Theory – Non-Weighted	9, 10, 11, 12	2.5/2.5
7123/7124	Advanced Piano Keyboard & Theory - Honors	10, 11, 12	2.5/2.5
7131/7132	Beginning Guitar & Theory - Non-Weighted	9, 10, 11, 12	2.5/2.5
7355/7356	Advanced Music Theory - Honors	11, 12	2.5/2.5

## MEDIA AND DIGITAL ARTS

7825/7826	Introduction to Digital Media Production - Honors	9, 10, 11, 12	2.5/2.5
7827/7828	Intermediate Digital Media Production - Honors	10, 11, 12	2.5/2.5
7829/7830	Advanced Digital Media Production - Honors	11, 12	2.5/2.5
7833/7834	Television Broadcast: The Live Broadcast / The Red Raider Report - Honors	11, 12	2.5/2.5
7715/7716	Digital Photography - Honors	9, 10, 11, 12	2.5/2.5
7773	Animation - Honors	10, 11, 12	2.5/2.5
7747/7748	Introduction to Graphic Design - Honors	9, 10, 11, 12	2.5/2.5
7758/7759	Advanced Graphic Design - Honors	10, 11, 12	2.5/2.5
7363/7364	Digital Audio Production - Honors	11, 12	2.5/2.5
7871	Film, Video and Society - Dual Enrollment - Advanced	11, 12	2.5

## STUDIO ARTS

7501/7502	Art Exploration – Non-Weighted	9, 10, 11, 12	2.5/2.5
7591/7592	Drawing – Non-Weighted	9, 10, 11, 12	2.5/2.5
7631/7632	Sculpture - Non-Weighted	9, 10, 11, 12	2.5/2.5
7511/7512	Introduction to Studio Art - College	9, 10, 11, 12	2.5/2.5
7513/7514	Introduction to Studio Art - Honors	9, 10, 11, 12	2.5/2.5
7523/7524	Intermediate Studio Art - Honors	10, 11, 12	2.5/2.5
7451/7452	Art History - Honors	10, 11, 12	2.5/2.5
7543/7544	Studio Art Portfolio - Honors	12	2.5/2.5

EXCEPTIONS TO PREREQUISITE REQUIREMENTS AS LISTED REQUIRE WRITTEN  
APPROVAL OF THE DEPARTMENT HEAD

## PERFORMING ARTS

### MUSIC

**7139/7140 Band - Honors 9,10,11,12 2.5/2.5 Cr.**

Band is the entry level course for students new to the LHS Band program. Band 1 is for students with prior experience on brass, woodwind or percussion instruments. As in Band 1 - 4, the Band performs throughout the year at various community and school events including seasonal concerts, parades and music festivals. The band also travels, performing in other communities, maintaining a reputation for excellence. Student attendance at after school, evening and weekend rehearsals and performances is mandatory and is considered a requirement of the course. *Meets Physical Education Requirement. PREREQUISITE: Prior experience on a woodwind, brass or percussion instrument. Some exceptions will be allowed at the discretion of the Department Chair.*

<b>7141/7142</b>	<b>BAND 1 - Honors</b>	<b>9</b>	<b>2.5/2.5 Cr.</b>
<b>7143/7144</b>	<b>BAND 2 - Honors</b>	<b>10</b>	<b>2.5/2.5 Cr.</b>
<b>7145/7146</b>	<b>BAND 3 - Honors</b>	<b>11</b>	<b>2.5/2.5 Cr.</b>
<b>7147/7148</b>	<b>BAND 4 - Honors</b>	<b>12</b>	<b>2.5/2.5 Cr.</b>

Band 1-4 is for students that have participated in middle school band or students with prior experience on brass, woodwind or percussion instruments. The band performs throughout the year at various community and school events including seasonal concerts, parades and music festivals. The band also travels, performing in other communities, maintaining a reputation for excellence. Band 1-4 requires weekly nighttime practices, many outside performances, competitions, parades, football games and festivals each year. Students will learn music at a high difficulty level required for competition and performance. Student attendance at after school, evening and weekend rehearsals and performances is **mandatory** and is a requirement of the course. *Meets Physical Education Requirement. PREREQUISITE: Must play a band instrument, attend nighttime practices and outside performances evenings and after school.*

<b>7151/7152</b>	<b>JAZZ BAND 1 - Honors</b>	<b>9</b>	<b>2.5/2.5 Cr.</b>
<b>7153/7154</b>	<b>JAZZ BAND 2 - Honors</b>	<b>10</b>	<b>2.5/2.5 Cr.</b>
<b>7155/7156</b>	<b>JAZZ BAND 3 - Honors</b>	<b>11</b>	<b>2.5/2.5 Cr.</b>
<b>7157/7158</b>	<b>JAZZ BAND 4 - Honors</b>	<b>12</b>	<b>2.5/2.5 Cr.</b>

The Jazz Band reflects the traditional Big Band instrumentation of saxophone, trumpet, trombone and rhythm sections; however, extended instrumentation is also acceptable. Flutes, clarinets, oboes, bassoons, French horns, violins, guitars, mallet percussion and keyboards and more are welcomed. Students enrolled in this class will learn the basics of the jazz style, sound, balance and terminology. Students will be introduced to jazz improvisation and its relationship with scales and chord progressions. This is a performance class; therefore, students are expected to attend all rehearsals, sectionals and performances. *PREREQUISITE: Prior experience on the instruments mentioned above. Some exceptions will be allowed at the discretion of the Department Chair.*

<b>7011/7012</b>	<b>STRING ENSEMBLE 1 - Honors</b>	<b>9</b>	<b>2.5/2.5 Cr.</b>
<b>7013/7014</b>	<b>STRING ENSEMBLE 2 - Honors</b>	<b>10</b>	<b>2.5/2.5 Cr.</b>
<b>7015/7016</b>	<b>STRING ENSEMBLE 3 - Honors</b>	<b>11</b>	<b>2.5/2.5 Cr.</b>
<b>7017/7018</b>	<b>STRING ENSEMBLE 4 - Honors</b>	<b>12</b>	<b>2.5/2.5 Cr.</b>

String Ensemble is for the student with prior orchestral string experience on the violin, viola, cello or bass. Students will be given small group and ensemble strings instruction. Emphasis will be placed on the acquisition of technical and musical skills appropriate to the experience level of the player and incorporating many different musical styles. String Ensemble is supported through a collaborative partnership with the UML String Project. **PREREQUISITE: Prior experience on an orchestral string instrument.**

<b>7299/7300</b>	<b>SHOW CHOIR - Honors</b>	<b>9, 10, 11, 12</b>	<b>2.5/2.5 Cr.</b>
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Show Choir is an entry-level class for those new to the show choir idiom or those students who do not wish to graduate to the advanced group but still be involved in show choir. This group is *non-auditioned*. Students are expected to dance and sing and will perform at school events, the Mill City Show Choir Festival and one other competition throughout the school year. This is a co-curricular class that will involve some outside practices and concerts.

<b>7301/7302</b>	<b>SHOW CHOIR 1 - Honors</b>	<b>9</b>	<b>2.5/2.5 Cr.</b>
<b>7303/7304</b>	<b>SHOW CHOIR 2 - Honors</b>	<b>10</b>	<b>2.5/2.5 Cr.</b>
<b>7305/7306</b>	<b>SHOW CHOIR 3 - Honors</b>	<b>11</b>	<b>2.5/2.5 Cr.</b>
<b>7307/7308</b>	<b>SHOW CHOIR 4 - Honors</b>	<b>12</b>	<b>2.5/2.5 Cr.</b>

Show Choir 1-4 is an *auditioned* class. Students do not have to take show choir 1 to audition for this competitive ensemble. Students who do not make the audition will be placed in show choir 1. Advanced Show Choir requires weekly nighttime practices, many outside performances, five competitions and a festival each year. Students will learn music and dances at a high difficulty level required for competition. Students must audition to be in this ensemble. **PREREQUISITE: Audition**

<b>7341/7342</b>	<b>CONCERT CHORUS 1 - Honors</b>	<b>9</b>	<b>2.5/2.5 Cr.</b>
<b>7343/7344</b>	<b>CONCERT CHORUS 2 - Honors</b>	<b>10</b>	<b>2.5/2.5 Cr.</b>
<b>7345/7346</b>	<b>CONCERT CHORUS 3 - Honors</b>	<b>11</b>	<b>2.5/2.5 Cr.</b>
<b>7347/7348</b>	<b>CONCERT CHORUS 4 - Honors</b>	<b>12</b>	<b>2.5/2.5 Cr.</b>

Concert choir is a mixed ensemble that will perform music from various genres, time periods and languages. There is no dance requirement for this ensemble. No prior experience is needed. Students will perform at the two annual school concerts and other performance opportunities as they arise. There will be minimal outside of class time required except for the concerts and combined rehearsals leading up to the concert.

## MUSIC ELECTIVES

**7125 WORLD OF DRUMS – Non-Weighted (Single Semester) 9, 10, 11, 12 2.5/2.5 Cr.**

World of Drums allows students to explore percussion music from around the world, learning techniques for playing drums, cymbals, keyboard instruments, and hand percussion. The class will function as a percussion ensemble that will study Contemporary, Latin, Asian, and African music. Emphasis will be placed on the development of drumming skills and techniques.

**7121/7122 BEGINNING PIANO & THEORY – Non-Weighted 9, 10, 11, 12 2.5/2.5 Cr.**

Beginning Piano & Theory students will learn to play the piano in a lab setting. Each student will have access to a piano and will work at his/her own pace. Students will also acquire basic music theory to enhance their piano performance. This course is meant for students who have no piano and/or music theory experience.

**7123/7124 ADVANCED PIANO & THEORY - Honors 10, 11, 12 2.5/2.5 Cr.**

Advanced Piano & Theory builds on the knowledge and skills acquired in Beginning Piano & Theory. ***PREREQUISITE: Successful completion of Beginning Piano & Theory or teacher approval.***

**7131/7132 BEGINNING GUITAR & THEORY - Non-Weighted 9, 10, 11, 12 2.5/2.5 Cr.**

Beginning Guitar & Theory students will learn to play the guitar in a lab setting. Each student will have access to a guitar and will work at his/her own pace. Students will also acquire basic music theory to enhance their guitar performance. This class is meant for students who have no guitar and/or music theory experience.

**7355/7356 ADVANCED MUSIC THEORY - Honors 11, 12 2.5/2.5 Cr.**

Advanced Music Theory builds on the knowledge and skills acquired in other music course offerings. Students will explore the academic study and analysis of fundamental elements of music such as pitch, rhythm, harmony, and form. ***PREREQUISITE: Beginner/Advanced Piano, Beginner Guitar, Band, Concert Chorus, Show Choir***

## DANCE

7905/7906	Dance 1 & 2: Modern and Jazz Technique - Honors	9, 10, 11, 12	2.5/2.5
7907/7908	Dance 3 & 4: Technique and Composition - Honors	10, 11, 12	2.5/2.5
7953/7954	Advanced Dance Studies and Choreography - Honors	11, 12	2.5/2.5
7983/7984	Senior Dance Project - Honors	12	2.5/2.5

**7905/7906      DANCE 1 & 2: MODERN AND JAZZ TECHNIQUE - Honors**  
**9, 10, 11, 12      2.5/2.5 Cr.**

Modern & Jazz Technique introduces the fundamentals of modern and jazz dance. Content to be covered includes daily warm- up exercises, the study of technique, basic combinations, improvisation and performance-based pieces. Students will also learn about the history of dance, other dance forms and styles as well as the cultural and social aspects of the various forms. Papers, projects and studio performance are part of the assessment criteria. Attendance at scheduled performances is mandatory. These are the first and second classes in a series of four core dance classes. *Meets Physical Education Requirement.*

**7907/7908      DANCE 3 & 4: TECHNIQUE AND COMPOSITION - Honors**  
**10, 11, 12      2.5/2.5 Cr.**

Technique and Composition is for those students who want to continue with the study of dance. Content will include more complex stretches and combinations as well as the continued study of improvisation, composition skills, dance history and theory. Papers, projects and studio performances are part of the assessment. Attendance at scheduled performances is mandatory. This is the third and fourth classes in a series of four core dance classes. ***PREREQUISITE: Successful completion of 7905/7906 Dance 1&2: Modern and Jazz Technique.*** *Meets Physical Education Requirement.*

**7953/7954      ADVANCED DANCE STUDIES AND CHOREOGRAPHY - Honors**  
**11, 12      2.5/2.5 Cr.**

Advanced Dance Studies and Choreography offers the serious dancer a chance to continue with her/his study of dance at a more advanced level. Personal exploration through an in-depth study of improvisation as well as technique and choreography will be the main focus in this class. Assessments will include written work and on-going studio performances and exhibitions. Attendance at scheduled performances is mandatory. ***PREREQUISITES: Successful completion of 7905/7906 Dance 1 & 2: Modern and Jazz Technique AND Dance 3 & 4: Technique and Composition (minimum grade of 75) and recommendation of the teacher and/or Department Chair.*** *Meets Physical Education Requirement.*



**7983/7984 SENIOR DANCE PROJECT - Honors 12 2.5/2.5 Cr.**

Senior Dance Project will explore a personal movement style and at the same time investigate the styles of dance masters throughout history. Students will continue to study dance theory, abstract movement, improvisation, composition, and critical evaluation of dance and the arts. **PREREQUISITE: Successful completion of Advanced Dance Studies and Choreography and recommendation of the teacher and/or Department Chair. Meets Physical Education Requirement.**

## **THEATER**

**7411 DRAMA 1: FUNDAMENTALS OF ACTING 9, 10, 11, 12 2.5/2.5 Cr.**

Drama 1 will introduce the student to the fundamentals of acting including improvisation, theater sports and games, stage identification, blocking shorthand, history of theater, acting styles and schools etc. Students will be required to complete projects and assignments. Students will study various systems of theater education such as the Stanislavsky Method. Students will be required to act in class performing monologues, duets and small plays in addition to writing their own material for performance. Historical dance, stage combat and make-up will be covered in this class.

**7412 DRAMA 2: THE TECHNICAL THEATER – Honors 9, 10, 11, 12 2.5/2.5 Cr.**

Drama 2 will focus on the technical aspects of theater including but not limited to scene development and construction, lighting design and implementation, costume design and creation, painting basics and stage sound basics. Behind the scenes roles such as stage crew, stage manager, box office will be discussed. More complex theater will be visited such as social justice theater and theater of the oppressed, theater of the absurd etc. Students will use their knowledge and skills in authentic learning experiences such as the spring musical plus create their own theater as the class progresses. **PREREQUISITE: Drama 1**

## MEDIA AND DIGITAL ARTS

**7825/7826 INTRODUCTION TO DIGITAL MEDIA PRODUCTION - Honors**  
**9, 10, 11, 12 2.5/2.5 Cr.**

Introduction to Digital Media Production provides an overview of the history, as well as the basic concepts and technical aspects of media studio production, public service announcements, station IDs, and electronic newsgathering. Students will learn to operate all of the equipment housed in our portable and in-house studios: cameras, audio board, teleprompter, playback decks, lighting board, and video switcher. In addition, students will develop pre-production planning and production management skills, and learn how to create videos using portable cameras and non-linear editing equipment. **Students will be required to participate in one remote studio production per quarter that will take place after regular school hours.** *MCC ARTICULATION: COM121 Introduction to TV Production for students in grades 11 and 12.*

**7827/7828 INTERMEDIATE DIGITAL MEDIA PRODUCTION – Honors**  
**10, 11, 12 2.5/2.5 Cr**

Intermediate Digital Media Production students will learn advanced media news broadcasting techniques, including how to create a news oriented feature package and how integrate live graphics and roll-ins into a broadcast. **\*Students will be required to participate in regular remote studio productions that will take place after regular school hours.** *PREREQUISITE: Successful completion of Introduction to Digital Media Production.*

**7829/7830 ADVANCED DIGITAL MEDIA PRODUCTION - Honors**  
**11, 12 2.5/2.5 Cr.**

Advanced Digital Media Production will run concurrently with Intermediate Digital Production and gives underclassmen more than two years/ leadership roles. *PREREQUISITE: Successful completion of Introduction to Digital Media Production and Intermediate Digital Media Production and/or approval by teacher and/or Department Chair.*

**7833/7834 TELEVISION NEWSROOM: THE LIVE BROADCAST / THE RED RAIDER REPORT – Honors**  
**11, 12 2.5/2.5 Cr.**

Television Newsroom: The Live Broadcast / The Raider Report produces a weekly 10-15 minute newscast or a 5-7 minute daily newscast, broadcast live throughout the school, on cable and the Internet, with video reports about school, local, national and international news as well as sports highlights and the weather forecast. Students rotate positions weekly, using the television studio and control room, collaborating to broadcast an informative and accurate newscast while facing the daily deadlines of a working newsroom. *PREREQUISITE: Digital Media Production and consent of instructor.*





**7523/7524 INTERMEDIATE STUDIO ART - Honors 10, 11, 12 2.5/2.5 Cr.**

Intermediate Studio Art develops the visual experience: Students develop greater skills and pursue an in-depth study of the Art Elements of Design and Principles of Composition. As part of their artistic development, students are expected to seek, recognize and implement their own visual voice. Students will continue to assemble a portfolio that demonstrates technical and aesthetic proficiency in a wide variety of visual media.

**7451/7452 ART HISTORY - Honors 10, 11, 12 2.5/2.5 Cr.**

Art History surveys the history of art from all over the world since the beginning of recorded time. Students study aesthetic expression in drawing, painting, sculpture, architecture, and photography, including both Western and Non-Western art, beginning at approximately 30,000 BCE and ending in modern day. Students learn how various art movements affected and were affected by varying forms of religion, society, politics, and cultures. In addition to traditional art history learning, students will make art projects as a means of exploring creativity and personal expression, while connecting them to the concepts learned in art history.

**7543/7544 STUDIO ART PORTFOLIO - Honors 12 2.5/2.5 Cr.**

Studio Art Portfolio is an advanced course for students who are considering art school, an art related career, or whose love of the arts will allow for concentrated effort. Students will develop a college-ready portfolio that accurately reflects their technical and aesthetic expertise. ***PREREQUISITE: Successful completion of Intermediate Studio Art or teacher/Department Chair recommendation.***

# U. S. AIR FORCE JUNIOR ROTC AEROSPACE SCIENCE

The Air Force Junior ROTC Pathway is a four-year citizenship program designed to develop citizens of character dedicated to serving their nation and community. The objectives of AFJROTC are to educate and train high school cadets in citizenship, promote community service, instill responsibility, character, and self-discipline, and provide instruction in air and space fundamentals. The program is grounded in the Air Force core values of integrity first, service before self, and excellence in all we do. The curriculum emphasizes the Air Force heritage and traditions, the development of flight, applied flight sciences, military aerospace policies, and global awareness. Rigid academic courses in military science and leadership provide a solid foundation. The curriculum shows students how to reach their full potential while serving society through self-discipline, structure, followership, and leadership. Students are challenged by assuming various leadership positions throughout the Lowell High School Cadet Corps. Senior Cadets are responsible for organizing, planning, and coordinating all cadet operations and activities.

In addition to classroom curriculum, learning includes numerous extra-curricular activities including before/after school programs, field trips, and community service activities. These activities emphasize teamwork, discipline, and community engagement.

The AFJROTC program is offered to all Lowell High School students who meet the following requirements:

- Enrolled as a regular student in Lowell High School
- Physically fit. (Eligible to participate in Physical Education)
- Students must agree to meet AFJROTC grooming standards and to wear the uniform at least one day per week and on special occasions as required. (Uniforms are provided at no cost to the student; however, students are responsible for uniform cleaning as necessary.).

Note: There is no military commitment required to be involved in the program.

AFJROTC may be substituted each year for the Physical Education and Health graduation requirement. Students who successfully complete two years in the program receive a *Certificate of Training*, while those completing three or more years receive a *Certification of Completion*.

9321/9322	AFJROTC 1 - Aviation History - Honors	9, 10, 11, 12	2.5/2.5
9323/9324	AFJROTC 2 - Science of Flight - Honors	10, 11, 12	2.5/2.5
9325/9326	AFJROTC 3 - Life Skills/Careers - Honors	11,12	2.5/2.5
9327/9328	AFJROTC 4 - Management/Cadet Corps - Honors	12	2.5/2.5
9337/9338	AFJROTC 4 - Principles of Management - Honors	12	2.5/2.5
9351/9352	AFJROTC - Flight Commander - Honors	11, 12	2.5/2.5
9381	AFJROTC - Cadet Leadership Course - Non-Weighted	10, 11, 12	2.5

## **AEROSPACE SCIENCE (AFJROTC)**

**9321/9322      AFJROTC 1 – AVIATION HISTORY - Honors      9, 10, 11, 12      2.5/2.5 Cr.**

Aviation History introduces students to the AFJROTC program and focuses on Air Force heritage, organization, and traditions. Additionally, students learn customs and courtesies of the Air Force. Individual control through personal behavior and responsibility are taught. Students learn about citizenship and the US flag. Studies relate directly to the academic subject matter, with focus on study habits and time management. The Aerospace Science portion reviews the development of flight from ancient legends through the Persian Gulf War and beyond. Additionally, the role of the military throughout the history of the U.S. is identified. The second half of the course describes the makeup of the aerospace community and the United States Air Force. Wellness, health and fitness, as well as instruction in military drill and ceremonies round out the course content. (*Meets Physical Education and Health Requirements.*)

**9323/9324      AFJROTC 2 – SCIENCE OF FLIGHT - Honors      10, 11, 12      2.5/2.5 Cr.**

Science of Flight Focuses on communication skills, writing, and public speaking. Cadets are further challenged in their leadership development through courseware in team building and follow leadership material. Cadet corps activities will encompass developmental skills for future positions of leadership. Responsibilities will include the planning, training and execution of cadet corps projects by becoming potential flight commanders. As part of the curriculum, education in financial management and budgeting is offered by the Hanscom Federal Credit Union. Aerospace Science curriculum focuses on the aerospace environment, principles of aircraft flight, navigation and human elements of flight. Cadets are eligible to participate on orientation flights when available through United States Air Force or Reserve units. Wellness, health and fitness, as well as further development in drill and ceremonies round out the course content. (*Meets Physical Education and Health Requirements.*) **PREREQUISITE: Successful completion of AFJROTC 1 - Aviation History.**

**9325/9326      AFJROTC 3 – LIFE SKILLS/CAREERS - Honors      11, 12      2.5/2.5 Cr.**

Life Skills and Careers is designed to prepare students for life after high school in the high-tech, globally oriented, and diverse workplace including charting a course for post-secondary education or entry into the workforce; job application, resume preparation and interviewing skills; military career opportunities and careers in public service; and career skill development. Aerospace Science curriculum, An Introduction to Global Awareness, introduces students to the study of world affairs, regional studies, and cultural awareness. It delves into history, geography, religions, languages, culture, political systems, economics, social issues, environmental concerns, and human rights. Visits are made to colleges, industry and military bases when available. Wellness, health and fitness round out the course content. (*Meets Physical Education and Health Requirements.*) **PREREQUISITE: Successful completion of AFJROTC 2 - Science of Flight**

**9337/9338      AFJROTC 4 – PRINCIPLES OF MANAGEMENT – Honors      12      2.5 Cr.**

Principles of Management is for Seniors who are not selected for the Management of the Cadet Corps but continue with AFJROTC for a 4th year. Leadership Education continues with an introduction to management principles, the historical roots of contemporary management practices, and the management environment. The course then continues with a discussion of planning to include the foundations of planning and decision making, as well as managing change, stress, and innovation. The course includes ethical dilemmas faced, case studies, and role play activities to give students the opportunity to practice what they learn. The Aerospace Science curriculum continues global awareness studies through the remainder of regions not previously covered in AS-III. Wellness, health and fitness round out the course content. (*Meets Physical Education and Health Requirements.*) **PREREQUISITE: Successful completion of AFJROTC 3 - Life Skills/Careers**

**9327/9328      AFJROTC 4 – MANAGEMENT/CADET CORPS – Honors      12      2.5/2.5 Cr.**

Management & the Cadet Corps continues with an introduction to management principles, the historical roots of contemporary management practice, and the management environment. The course then continues with a discussion of planning to include the foundations of planning and decision making, as well as managing change, stress, and innovation. The course includes ethical dilemmas faced, case studies, and role play activities to give students the opportunity to practice what they learn. Cadets then put these principles into practice by managing the entire corps during the fourth year. This hands-on experience affords the cadets the opportunity to put the theories of previous leadership courses into practice. All the planning, organizing, coordinating, directing, controlling, and decision-making will be done by the cadets. They practice their communication, decision-making, personal interaction, managerial, and organizational skills. Wellness, health and fitness round out the course content. (*Meets Physical Education and Health Requirements.*) **PREREQUISITE: Successful completion of AFJROTC 3 - Life Skills/Careers; Selection to, and completion of the Cadet Leadership Course.**



**9351/9352      AFJROTC - FLIGHT COMMANDER - Honors      11, 12      2.5/2.5 Cr.**

Cadets will supervise other cadets in the classroom, write evaluations on their performance, conduct leadership, and promotion potential. They also call roll and report attendance, provide drill and ceremonies training, inspect the flight during inspection days and for special events. They reinforce cadet conduct and discipline during class and drill formation. They also recommend improvements to flight conduct and operations to the instructor. Wellness, health and fitness round out the course content. (*Meets Physical Education and Health Requirements* .**PREREQUISITE: Successful completion of Aerospace Science II; selection to, and completion of the Cadet Leadership Course.**

**9381      AFJROTC - CADET LEADERSHIP - Non-Weighted      11, 12      2.5 Cr.**

Students are hand selected to attend the Cadet Leadership Course by the cadre of instructors assigned to AFJROTC. This intense 72 hour curriculum is high impact. It focuses on teaching leadership and management principles to the top 10% of the selected ASIII and ASIV cadets. Students learn key fundamental skills necessary for organizing, coordinating, controlling, and planning all operations and activities within the corps of cadets. These management skills are taught in a classroom setting, a lab environment and reinforced in time related activities. Each student will analyze their leadership skills through a number of training exercises. Upon completion of the Cadet Leadership Course, cadets will be eligible to fill key leadership and management positions throughout the cadet corps. They will also be required to be proficient in drill, ceremonies health and wellness. Cadets must achieve an average score of 85% on each assessment activity to receive a Certificate of Graduation and the Leadership School Ribbon. **PREREQUISITE: Department Head Approval**

# PHYSICAL EDUCATION

Each student must select Physical Education each year and pass ten (10) credits in Physical Education. This requirement may be waived only by the Head of School for documented medical excuse, for critical course conflicts or for other extraordinary circumstances.

The Physical Education Program is aligned with the National Standards for Physical Education and the Massachusetts Curriculum Frameworks. Physical activity is critical to the development and maintenance of good health. The goal of physical education is to develop physically educated individuals who have the knowledge, skills, and confidence to enjoy a lifetime of healthful physical activity. A physically educated person will be able to complete the following national standards: Standard 1: Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities; Standard 2: Demonstrates understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities; Standard 3: Participates regularly in physical activity; Standard 4: Achieves and maintains a health-enhancing level of physical fitness; Standard 5: Exhibits responsible personal and social behavior that respects self and others in physical activity settings; Standard 6: Values physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.

9005	Physical Education 1 - Non-Weighted	9	2.5
9006	Physical Education 2 - Non-Weighted	9R, 10	2.5
9003	Physical Education 3 & 4 - Non-Weighted	11, 12	2.5

## PHYSICAL EDUCATION

<b>9005</b>	<b>PHYSICAL EDUCATION 1 - Non-Weighted</b>	<b>9 (FA)</b>	<b>2.5 Cr.</b>
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Grade 9 Physical Education is a coeducational program aligned with the National Standards for Physical Education and Massachusetts Curriculum Frameworks. Students are presented with multiple opportunities to learn skills necessary to participate fully in fitness and sport activities for a lifetime. Units include an introduction and skill based orientation into Aquatics, Basketball, Cardio-Vascular Fitness, Co-operative Games, Strength Training, Racquet Sports, Volleyball and Elective Activities. This course satisfies a Physical Education graduation requirement.

**9006                      PHYSICAL EDUCATION 2 - Non-Weighted                      9R, 10                      2.5 Cr.**

Grade 10 Physical Education is a coeducational program aligned with the National Standards for Physical Education and Massachusetts Curriculum Frameworks. Students are presented with multiple opportunities to learn skills necessary to participate fully in fitness and sport activities for a lifetime. Units include an introduction and skill based orientation into Aquatics, Basketball, Cardio-Vascular Fitness, Co-operative Games, Strength Training, Racquet Sports, Volleyball and Elective Activities. This course satisfies a Physical Education graduation requirement.

**9003                      PHYSICAL EDUCATION 3 & 4 - Non-Weighted                      11, 12                      2.5 Cr.**

Grade 11 & 12 Physical Education is a coeducational program aligned with the National Standards for Physical Education and Massachusetts Curriculum Frameworks. Students are presented with multiple opportunities to learn skills necessary to participate fully in fitness and sport activities for a lifetime. Units include an introduction and skill based orientation into Aquatics, Basketball, Cardio-Vascular Fitness, Co-operative Games, Strength Training, Racquet Sports, Volleyball and Elective Activities. This course satisfies a Physical Education graduation requirement.

# WELLNESS

9011	Health Education A - Non-Weighted	9	2.5
9012	Health Education B - Non-Weighted	10	2.5
9015	Parenting and Child Development - Non-Weighted	11, 12	2.5

## WELLNESS COURSES

**9011 HEALTH A - Health in Mind and Body- Non-Weighted 9 2.5 Cr.**

The emphasis for this course is placed on building self-esteem and resilience, making responsible decisions and developing coping skills in addition to critically thinking through objective content. The class is interactive; students will work cooperatively on small group projects and learn how to role-play refusal techniques involving peer pressure situations. The course also involves the opportunity to process and discuss health topics with the aid of videos, speakers, and current literature. Health in Mind and Body is composed of the following units: Physical Health, Social Health, and Emotional Health. The focus within these units will include the human body and its systems, nutrition, interpersonal relationships (communication skills), stress management, violence prevention (bullying), introduction to addictive substances and behaviors, human sexuality (including male and female reproductive anatomy, choosing abstinence, setting limits in relationships, teen pregnancy, contraception, sexually transmitted diseases and sexual orientation). This course is aligned with the Massachusetts Comprehensive Health Curriculum framework, and satisfies a Health Education requirement.

**9012 HEALTH B - Healthy Life Choices- Non-Weighted 10 2.5 Cr.**

This course focuses on issues/challenges that young adults face today. Students will analyze their personal health choices and risk factors based on their decision-making skills. The course also involves the opportunity to process and discuss health topics with the aid of videos, speakers, and current literature. Healthy Life Choices is composed of the following units: Physical Health, Emotional Health, and Environmental Health. The focus within these units will include healthcare and alternative medicines (prevention and intervention), infectious diseases and lifestyle diseases, human sexuality (dating and healthy relationships, commitment and marriage, conception through parenting, family life, pregnancy and STI prevention), mental health and emotional disorders (anxiety disorders, personality development, expressing emotions and mental health services), environmental health (pollution and its effect on health, practicing recycling and conservation). This course is aligned with the Massachusetts Comprehensive Health Curriculum framework, and satisfies a Health Education requirement *It is strongly recommended that students enrolled in this course have successfully completed Health A- Health in Mind and Body.*

**9015**                      **Parenting and Child Development - Non-Weighted**                      **11, 12**                      **2.5 Cr.**

Family and Social Health explores family life, healthy relationships, safety, and injury prevention. Students in this course will gain knowledge relating to the significance of the family on individuals and society. They will learn skills to support the family, be an effective parent, and nurture the development of children. Students will learn that relationships with others are an integral part of human life and will acquire skills to enhance these relationships. Safety and injury prevention will provide students with the knowledge and skills to administer first aid and carry out emergency procedures including cardiopulmonary resuscitation. Students will learn to avoid, recognize, and report verbal, physical, and emotional abuse situations. ***PREREQUISITE: Permission of Department Head.***

# ENGLISH LANGUAGE LEARNERS PROGRAM

## ENGLISH LANGUAGE DEVELOPMENT - ELD ENGLISH AS A SECOND LANGUAGE - ESL SHELTERED ENGLISH INSTRUCTION - SEI BILINGUAL EDUCATION - BE

An **English Language Learner (ELL)** is a limited English proficient (LEP) student whose native language is a language other than English, and who is not currently able to perform ordinary classroom work in English. Lowell High School offers English Language Learners (ELLs) in grades nine through twelve a comprehensive academic program to build English language proficiency and academic content knowledge. English Language Learners develop English proficiency while learning the general curriculum. Instruction also recognizes that language modalities (speaking, listening, reading, and writing) develop interdependently and, therefore, should be integrated to promote skill development.

English Language Learners at Lowell High School participate in one or more program models that support English language and content knowledge development. Students' English language proficiency is assessed and academic background reviewed in order to recommend an appropriate program placement in English Language Development (ELD) classes, Sheltered English Instruction (SEI) content classes, and/or English Language Development support classes.

English Language Development courses and electives are organized around four language domains identified in this document: listening, speaking, reading, and writing. **The Massachusetts English Language Arts Curriculum Frameworks** learning standards, in addition to the other subject matter curriculum frameworks, the Common Core and WIDA Can Do Descriptors, serve as building blocks and guides for curriculum in the ELL Department. Academic content curriculum offered to ELLs in Sheltered English Instruction (SEI) content classes aligns with the **Massachusetts Curriculum Frameworks** for mathematics, science and technology, history and social studies, and health. The ELL Program offers courses that satisfy graduation requirements and credits. Elective courses support the development of English language proficiency.

The English Language Learners' Program at Lowell High School strives to offer ELLs opportunities to excel in academic, cultural, and social development in order to become successful, productive members of their school and community. It recognizes the linguistic, academic, and cultural diversity of its students and strives to support all ELLs at Lowell High so they attain their personal goals during and after high school.

In addition to intensive English Language Development courses and Sheltered English content courses, the program offers ELLs in the general education program a variety of support classes to ensure continued development of their academic English proficiency and second language literacy. [ELLs recently enrolled](#)

in a general education English language arts course are required to register for at least ONE (1) ELD support course. Exemptions to this requirement are only with the approval of the ELL Department Chair.

The Emergent Literacy Center for newcomer and SIFE/SLIFE students began with the 2013-2014 school year. Admission to this program and its support classes is determined by assessment, and consultation with the department chair and director of the program.

## **EMERGENT LITERACY CENTER**

0967/0968	Academic Language of English - College	Dept. Head Approval	2.5/2.5
0873/0874	ESL Reading - College	Dept. Head Approval	2.5/2.5
0871/0872	Academic Language of Math - College	Dept. Head Approval	2.5/2.5
0875/0876	Literacy of Math - College	Dept. Head Approval	2.5/2.5
3037/3038	Academic Language of Science	Dept. Head Approval	2.5/2.5
3875/3876	Literacy of Science - College	Dept. Head Approval	2.5/2.5
4037/4038	Academic Language of Social Studies - College	Dept. Head Approval	2.5/2.5
0865	English Speaking & Pronunciation - Non-Weighted	Dept. Head Approval	2.5

**0967/0968      ACADEMIC LANGUAGE OF ENGLISH - College      9, 10, 11, 12      2.5/2.5 Cr.**

Academic language of English Language Arts develops language proficiencies that are necessary for learners to perform successfully in academic contexts, specifically in English Language Arts. Instruction concentrates on the acquisition of academic vocabulary and developing oral academic discourse proficiency. Students learn to use specialized vocabulary, grammar, language functions, related discourse structures, and text types. ***PREREQUISITE: Department Head Approval***

**0873/0874      ESL READING - College      9, 10, 11, 12      2.5/2.5 Cr.**

ESL Reading is for emerging or developing decoders, and instruction focuses on developing specific reading skills and strategies, depending on student needs. ***PREREQUISITE: Department Head Approval***

**0871/0872      ACADEMIC LANGUAGE OF MATH - College      9, 10, 11, 12      2.5/2.5 Cr.**

Academic Language of Math develops language proficiencies that are necessary for learners to perform successfully in academic contexts, specifically in the content area of Mathematics. Instruction concentrates on the acquisition of academic vocabulary and developing oral academic discourse proficiency. Students learn to use specialized vocabulary, grammar, language functions, related discourse structures, and text types. ***PREREQUISITE: Department Head Approval***





## ENGLISH LANGUAGE LEARNERS

### ENGLISH

0801/0802	Emerging English Language – College	9,10, 11, 12	5/5
0811/0812	Developing English Language - College	9, 10, 11, 12	5/5
0821/0822	Expanding -English Language - College	9, 10, 11, 12	5/5
0831/0832	Bridging English Language - College	9, 10, 11, 12	5/5
0841/0842	Support English Language Development - College	9, 10, 11, 12	2.5/2.5
0851/0852	Intensive English Language Development - College	9, 10, 11, 12	2.5/2.5
0861/0862	Beginning English Conversation - College	9, 10, 11, 12	2.5/2.5
0865	Adv. Eng. Speaking & Pronunciation - Non-Weighted	9, 10, 11, 12	2.5
0881/0882	Fundamentals of Reading - Non-Weighted	Dept. Head Approval	2.5/2.5
0900	Second Language Communication Skills - Non-Weighted	9, 10, 11, 12	2.5
0901	Reading Clinic Intermediate - Non-Weighted	9, 10, 11, 12	2.5
0902	Reading Clinic Advanced - Non-Weighted	9, 10, 11, 12	2.5
0910	Accelerated Reading - Non-Weighted	9, 10, 11, 12	2.5
0921	Writing Lab Intermediate - Non-Weighted	9, 10, 11, 12	2.5
0922	Writing Lab Advanced - Non-Weighted	9, 10, 11, 12	2.5
0931/0932	Tutorial/Study Skills - Non-weighted	9, 10, 11, 12	2.5/2.5
9207/9208	ELL Seminar - Non-Weighted	9 (FA)	2.5/2.5

### MATH

1027/1028	Introduction to Mathematics - College	Dept. Head Approval	2.5/2.5
1137/1138	Algebra 1 - College	9, 10	2.5/2.5
1237/1238	Geometry - College	10, 11, 12	2.5/2.5
1337/1338	Algebra 2 - College	10, 11, 12	2.5/2.5

### SCIENCE

3137/3138	Integrated Science - College	9	2.5/2.5
3237/3238	Biology - College	10, 11, 12	2.5/2.5
3337/3338	Chemistry - College	10, 11, 12	2.5/2.5

## SOCIAL STUDIES

4027/4028	Introduction to Social Studies - College	Dept. Head Approval	2.5/2.5
4137/4138	World History - College	9	2.5/2.5
4237/4238	U. S. History 1 - College	10, 11, 12	2.5/2.5
4337/4338	U. S. History 2 - College	11, 12	2.5/2.5



**0821/0822      EXPANDING ENGLISH LANGUAGE - College**

**9, 10, 11, 12      5/5 Cr.**

Expanding English Language is for students with advanced English proficiency. ELL students at this level follow a curriculum that includes listening, speaking, reading, and writing as outlined in the WIDA CAN DO Descriptors and/or the WIDA Model. Knowledge and control of basic grammatical structures in both speaking and writing are emphasized, while more complex grammatical structures are introduced. Students are expected to handle increasingly complex reading materials and academic tasks, through the continued use of projects, computer-based instruction, and content-based material. This course satisfies an English graduation requirement. ***PREREQUISITE: A pretest indicating limited English proficiency, successful completion of courses Developing English Language and/or other considerations approved by the Department Head.***

**0831/0832      BRIDGING ENGLISH LANGUAGE - College**

**9, 10, 11, 12      5/5 Cr.**

Bridging English Language is for students transitioning to everyday use of the English Language. ELL students at this level follow a curriculum that includes the standards as outlined in the Massachusetts English Language Arts Curriculum and the WIDA CAN DO Descriptors and/or the WIDA Model Test. Reviews of grammatical skills, techniques of composition and vocabulary development are supplemented by instruction in the skills of expository and creative writing. A survey of the forms of literature presented in mainstream college level courses is an integral part of the course. This includes mythology, the novel, short story, drama, poetry and non-fiction essays, biography, and autobiography. This course satisfies an English graduation requirement. ***PREREQUISITE: A pretest indicating limited English proficiency, successful completion of courses Expanding English Language and/or other considerations approved by the Department Head.***

**0841/0842      SUPPORT ENGLISH LANGUAGE DEVELOPMENT - College**

**9, 10, 11, 12      5/5 Cr.**

Support English Language Development is a supplementary course for non-native speakers of English who continue to advance their literacy skills in English, and are recently enrolled in a mainstream English class. Students are taught reading strategies and study skills to improve academic language and vocabulary in preparation for high school and college work. ***PREREQUISITE: Concurrent enrollment in a general education English course and approval of the Department Head.***

**0851/0852      INTENSIVE ENGLISH LANGUAGE DEVELOPMENT - College**  
**9, 10, 11, 12      5/5 Cr.**

Intensive English Language Development is a rigorous English class for non-native speakers of English who have completed the highest level of ELD classes and are recently enrolled in a mainstream English class. Note-taking skills, vocabulary, familiarity with different literary genres, and college writing will be emphasized, including required term papers. The use of the computer to facilitate English language development is expected. ***PREREQUISITE: Concurrent enrollment in a general education English course and approval of the Department Head.***

**0861/0862      BEGINNING ENGLISH CONVERSATION (ELD)      9, 10, 11, 12      2.5/2.5 Cr.**

Beginning LEP students will practice necessary skills for conversation in their new language in three discrete areas: aural, oral, and pronunciation. Students will practice the sounds of English, emphasizing those sounds that do not appear in their native languages. This includes oral language exercises, concentrating on stress, rhythm, syllabication, phrasing, and intonation. Students will practice listening comprehension using tapes, videos, audio/computer programs, and teacher-directed activities. Students will learn to speak in a variety of situations, such as formal and informal speech, as well as language to solve such conversational problems as asking for information, clarification, and directions, or how to interrupt politely. Contextual course topics will be based on students' interests. Role-playing and out of class practice will be required. ***PREREQUISITE: Beginning-English Language or Developing English Language levels only.***

**0865      ENGLISH SPEAKING AND PRONUNCIATION - Non-weighted**  
**9, 10, 11, 12      2.5 Cr.**

English Speaking and Pronunciation is an intensive conversation, speech, and pronunciation course for ELLs who have specific difficulties with English pronunciation due to phonemic differences in their languages. Pronunciation drills and listening practice to address these difficulties will be stressed. In addition, listening and speaking at advanced levels of English will be developed through note taking practice, oral reports, video, panel discussions, interviews, and debates. ***PREREQUISITE: Department Head Approval.***

**0881/0882      FUNDAMENTALS OF READING (ELD) - Non-weighted**  
**9, 10, 11, 12      2.5/2.5 Cr.**

Fundamentals of Reading is for ELL students who need to develop and/or improve decoding and comprehension skills should enroll in this course. This course is particularly useful for LEP students with limited native language literacy. ***PREREQUISITE: Department Head Approval.***

**0900                    SECOND LANGUAGE COMMUNICATION SKILLS - Non-weighted**  
**9, 10, 11, 12                    2.5 Cr.**

Second Language Communication Skills is for beginning and intermediate LEP students as an elective ELD course. Students reinforce English language skills using a multi-sensory approach to language learning. Students will reinforce aural, oral, reading and writing skills. ***PREREQUISITE: Department Head Approval.***

**0901                    READING CLINIC INTERMEDIATE (ELD) - Non-weighted**  
**9, 10, 11, 12                    2.5 Cr.**

Reading Clinic Intermediate is a basic reading course for identified LEP students who need specialized reading instruction. An eclectic approach to word attack skills will enable students to learn to read for information as well as pleasure. A practical approach to reading skills, such as determining meaning from context, skimming, and scanning, will be combined with activities designed to enhance pleasure in reading as a lifelong activity. Reading journals and book conferences will be included. ***PREREQUISITE: Developing English Language Development or Expanding English Language levels and/or recommended by ELD teacher and/or the Department Head.***

**0902                    READING CLINIC ADVANCED (ELD) - Non-weighted**  
**9, 10, 11, 12                    2.5 Cr.**

Reading Clinic Advanced is for identified LEP students who need specialized reading instruction. An eclectic approach to word attack skills will enable students to learn to read for information as well as pleasure. A practical approach to reading skills, such as determining meaning from context, skimming, and scanning, will be combined with activities designed to enhance pleasure in reading as a lifelong activity. Reading journals and book conferences will be included. ***PREREQUISITE: Expanding English Language or Bridging English Language ELD levels and/or recommended by ELD teacher and/or the Department Head.***

**0910                    ACCELERATED READING (ELD) - Non-weighted                    9, 10, 11, 12                    2.5 Cr.**

Accelerated Reading will provide essential reading skills to succeed in mainstream college level classes in this intensive one-semester course for the motivated student with college ambition. An initial reading level will be determined for each student, and each student will be placed in an individualized program designed to help him/her set goals to improve reading enjoyment and comprehension. Students will chart their own progress towards individual improvement goals. Whole class instruction will include appropriate use of material from the student's current classes, as well as textbooks and support material, including the use of computers. ***PREREQUISITE: Department Head Approval***

**0921**                    **WRITING LAB INTERMEDIATE (ELD) - Non-weighted**                    **9, 10, 11, 12**                    **2.5 Cr.**

Writing Lab Intermediate provides extra writing practice for high beginning to intermediate LEP students. The course will focus on writing paragraphs for various purposes: description, narration, summary, comparison, contrast, and argument. Students will use personal experiences, picture stories, and readings from various content areas as a basis for writing. Stress will be placed on sentence structure and paragraph development. The use of computers for writing will be emphasized. ***PREREQUISITE: An elective course for Developing English Language or Expanding English Language students or Department Head approval.***

**0922**                    **WRITING LAB ADVANCED - Non-weighted**                    **9, 10, 11, 12**                    **2.5 Cr.**

Writing Lab Advanced provides extra writing practice for high intermediate, advanced, and transitional level ELD students. The course will focus on writing for various purposes: description, narration, summary, comparison and contrast, definition, argument. Students will develop multi-paragraph compositions, using personal experience and readings from various content areas as a basis for writing. ***PREREQUISITE: An elective course for Expanding English Language Bridging English Language, Support English Language Development, Intensive English Language Development and partially mainstreamed ELL students or Department Head approval.***

**0931/0932**            **TUTORIAL/STUDY SKILLS - Non-weighted**                    **9, 10, 11, 12**                    **2.5/2.5 Cr.**

Tutorial/Study Skills is for ELL students who require extra academic support to succeed in their classes. Study and organizational skills are taught using the content of the student's regular academic classes and learning style. Students are required to bring daily work and long-term assignments to class at every scheduled session. Class size is limited to no more than 15 students per section. ***PREREQUISITE: Enrolled in ELL courses and/or recommendation of Department Head.***

**9207/9208**            **ELL SEMINAR - Non-Weighted**                    **9 (FA)**                    **2.5/2.5 Cr.**

ELL Seminar provides students with an opportunity for "self-study". Throughout the year, students will explore career interests, set goals, and examine possibilities for post-secondary pathways. This introductory course infuses a PBIS framework into all aspects of students' academic and behavioral routines, and also develops students' organizational skills and study habits in order for them to successfully navigate through their first year at Lowell High School. In addition, ELL Seminar focuses on enhancing student literacy: functional literacy, digital literacy, and financial literacy. ***PREREQUISITE: Department Head Approval***

## MATHEMATICS COURSES (ELL)

**1027/1028      INTRODUCTION TO MATHEMATICS - College      9, 10, 11      2.5/2.5 Cr.**

Introduction to Mathematics is an introduction to algebra integrated with a review of immediately pertinent prerequisite skills. The course includes the material of the Massachusetts Mathematics Framework in preparation for the MCAS. It includes constants and variables, functions, open phrases and sentences, postulates, and properties of real numbers and linear equations. **PREREQUISITE: Department –Head Approval**

**1137/1138      ALGEBRA 1 - College      10, 11, 12      2.5/2.5 Cr.**

Algebra 1 introduces standard topics of algebra including constants and variables, functions, open phrases and sentences, postulates and properties of real numbers, linear equations, signed numbers, operations with polynomials, word problems leading to linear equations, and factoring.

**1237/1238      GEOMETRY A - College      10, 11, 12      2.5/2.5 Cr.**

Geometry is developed with a view to proof and logic as well as to its applications to the physical world. Properties of lines, angles and triangles are examined and in some cases deduced from other properties. Transformations are studied; properties and measurements of polygons and circles are included. Geometer's Sketchpad is utilized throughout the course. **PREREQUISITE: Completion of one year of high school math. NOTE: Sophomores must take Geometry to prepare for the MCAS.**

**1337/1338      ALGEBRA 2 - College      11, 12      2.5/2.5 Cr.**

Algebra 2 reviews topics from Algebra I are reviewed and extended. Factoring is treated in detail, including the Factor Theorem. Synthetic division, the Binomial Theorem, and solution of systems of simultaneous linear equations are typical new topics. **PREREQUISITE: Successful completion of Algebra 1. This course may be taken concurrently with Geometry by students with the successful completion of Algebra 1 with a minimum grade of 80. (SOPHOMORE COREQUISITE: Concurrent Geometry required)**





**4237/4238 U. S. HISTORY 1 - College 10, 11, 12 2.5/2.5 Cr.**

U. S. History 1 emphasizes the major events in the history of the United States from the American Revolution to the Civil War and Reconstruction. It is designed, in accordance with the Massachusetts Curriculum Frameworks, to provide students with a fundamental knowledge of the origins of the American ideologies of freedom and the pursuit of happiness. U. S. History IA includes a detailed study of the Constitution. The course integrates history, geography, economics, and government.

**4337/4338 U. S. HISTORY 2 - College 11, 12 2.5/2.5 Cr.**

US History 2 covers the history of the United States from the Industrial Revolution through the 1920's. Students study the effects of the free enterprise system and look at the Constitutional issues involved in government regulation of big business. They also examine American foreign policy as the U.S. becomes involved in international events. The course, designed in accordance with the Massachusetts Curriculum Frameworks, integrates history, geography, economics, and government.

## NATIVE LANGUAGE ARTS

Native Language Arts courses are offered in Spanish through the Foreign Language Department as Heritage Speaker courses.

**2503/2504 SPANISH 1 - HERITAGE SPEAKER - Honors 9, 10, 11, 12 2.5/2.5 Cr.**

Spanish 1 - Heritage Speaker is for students who have native listening/speaking skills in Spanish, and who seek to meet college entrance requirements. This course emphasizes correct pronunciation, formal grammar (verb tenses, pronouns, etc.), listening comprehension, reading and writing in the foreign language, and a study of the customs and traditions of the Spanish-speaking people. It will initially move at a quicker pace than Spanish 1 - Honors, and will have a different emphasis, - more on reading and writing structure, with a rapid review of basic vocabulary. ***PREREQUISITE: Placement through exam or consultation with the Department Head.***

**2507/2508 SPANISH 2 - HERITAGE SPEAKER - Honors 10, 11, 12 2.5/2.5 Cr.**

Spanish 2 - Heritage Speaker is for students who have native listening/speaking skills in Spanish, and who seek to meet college entrance requirements. This course emphasizes correct pronunciation, formal grammar (verb tenses, pronouns, etc.), listening comprehension, reading and writing in the foreign language, and a study of the customs and traditions of the Spanish-speaking people. It will continue the work done in Spanish 1 - Heritage Speaker, and will have an increased emphasis on reading and writing structure, with additional vocabulary and cultural investigation. ***PREREQUISITE: Successful completion of Spanish 1 - Heritage Speaker.***

# SPECIAL EDUCATION PROGRAM

Special Education services are determined through the Team process according to federal and state regulations. Eligible students receive the services specified in their Individual Educational Programs that enable them to receive a free and appropriate public education in the least restrictive environment. Each student's program is designed to ensure a successful transition to his/her individual post high school goal and to support the acquisition of skills necessary to become productive members of the larger community.

## SUPPORT COURSES

<b>8991</b>	<b>SPECIAL EDUCATION INTERN</b>	<b>11, 12</b>	<b>2.5/2.5</b>
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Internships offered by the Special Education Department provide valuable opportunities for students wishing to explore a career in the Special Education field. Students have the opportunity to be placed in classrooms with teachers and/or specialists overseeing their experience in working with students who have intensive special needs, students with autism, and students who have intellectual impairments. In addition, students wishing to specialize in Speech and Language, Occupational Therapy and/or Physical Therapy have the opportunity to work with these specialists. Students pursuing internships are also expected to be role models for the special needs students. ***PREREQUISITE: All candidates must present themselves to the Special Education Department Chair and complete an interview process to determine eligibility.***

## FUNDAMENTALS OF ACADEMICS COURSES

8001/8002	Fundamentals of English 1 (SP)	9	2.5/2.5
8003/8004	Fundamentals of English 2 (SP)	10	2.5/2.5
8005/8006	Fundamentals of English 3 (SP)	11	2.5/2.5
8007/8008	Fundamentals of English 4 (SP)	12	2.5/2.5
8053/8054	Fundamentals of Literature for Contemporary Youth (SP)	10, 11, 12	2.5/2.5
8100	Fundamentals of Math MCAS Prep (SP)	10, 11, 12	2.5
8103/8104	Fundamentals of Math Algebra 1 (SP)	9	2.5/2.5
8103/8104	Fundamentals of Math Algebra 1 (SP)	10, 11, 12	2.5/2.5
8105/8106	Fundamentals of Math Geometry (SP)	10, 11, 12	2.5/2.5
8151/8152	Fundamentals of Financial Mathematics & Application (SP)	11, 12	2.5/2.5
8301/8302	Fundamentals of Science (SP)	9	2.5/2.5
8303/8304	Fundamentals of Biology 1 (SP)	10	2.5/2.5
8305/8306	Fundamentals of Biology 2 (SP)	11	2.5/2.5
8401/8402	Fundamentals of Topics In World History (SP)	9	2.5/2.5
8403/8404	Fundamentals of Topics In US History 1 (SP)	10	2.5/2.5
8407	Fundamentals of the Evolution of American Rights and Civil Liberties (SP)	11	2.5
8408	Fundamentals of American Foreign Policy since 1776 (SP)	11	2.5

## ADJUSTMENT COURSES

8021/8022	English 1 (AD)	9	2.5/2.5
8023/8024	English 2 (AD)	10	2.5/2.5
8025/8026	English 3 (AD)	11	2.5/2.5
8027/8028	English 4 (AD)	12	2.5/2.5
8051	Literature & Contemporary Youth (AD)	10, 11, 12	2.5
8063	Iconic Children's Literature (AD)	10, 11, 12	2.5
8061/8062	Balanced Literacy (AD)	9	2.5/2.5
8123/8124	Algebra 1 (AD)	9	2.5/2.5
8125/8126	Geometry (AD)	10	2.5/2.5
8153/8154	Financial Mathematics & Application (AD)	11, 12	2.5/2.5
8313/8314	Biology (AD)	10	2.5/2.5
8321	Environmental Science (AD)	11,12	2.5
8351	Geology (AD)	11, 12	2.5
8411/8412	World History (AD)	9	2.5/2.5
8413/8414	US History 1 (AD)	10	2.5/2.5
8417	Fundamentals of the Evolution of American Rights and Civil Liberties (AD)	11	2.5
8418	Fundamentals of American Foreign Policy since 1776 (AD)	11	2.5
8543	Leadership Through Adventure (AD)	10, 11, 12	2.5
8547/8548	Social Dynamics 1 (AD)	9R, 10	2.5/2.5
8549/8550	Social Dynamics 2 (AD)	10R, 11	2.5/2.5
8903/8904	Adjustment Physical Education (AD)	9, 10, 11, 12	2.5/2.5
9201/9202	Freshman Seminar (AD) – Non-Weighted	9 (FA)	2.5/2.5

## SPECIAL EDUCATION COURSES

8851/8852	Instructional Support 1	9	2.5/2.5
8853/8854	Instructional Support 2	9 non-clustered, 10	2.5/2.5
8855/8856	Instructional Support 3 & 4	11, 12	2.5/2.5
8859/8860	Instructional Support (HI)	9, 10, 11, 12	2.5/2.5
8873/8874	Instructional Support (AD)	9R, 10, 11, 12	2.5/2.5
8081/8082	Decoding 1	9, 10, 11, 12	2.5/2.5
8083/8084	Decoding 2	9, 10, 11, 12	2.5/2.5
8085/8086	Decoding 3	9, 10, 11, 12	2.5/2.5
8087/8088	Decoding 4	9, 10, 11, 12	2.5/2.5
8089/8090	Decoding 5	9, 10, 11, 12	2.5/2.5
8091/8092	Decoding (HI)	9, 10, 11, 12	2.5/2.5

## LIFE SKILLS COURSES

8133/8134	Functional Math (JP)	9, 10, 11, 12	2.5/2.5
8315/8316	Science (JP)	9, 10, 11, 12	2.5/2.5
8551/8552	Social Dynamics (JP)	9, 10, 11, 12	2.5/2.5
8701/8702	Functional Academics (JP)	9, 10, 11, 12	2.5/2.5
8703/8704	Functional Academics 2 (JP)	9, 10, 11, 12	2.5/2.5
8813/8814	Intro to Community & Independent Living (JP)	9, 10, 11, 12	2.5/2.5
8815/8816	Community & Independent Living (JP)	9, 10, 11, 12	2.5/2.5
8921/8922	Health (JP)	9, 10, 11, 12	2.5/2.5
8901/8902	Life Skills Physical Education (JP)	9, 10, 11, 12	2.5/2.5
8601	Computer Basics (JP)	11, 12	2.5/2.5

## PERVASIVE DEVELOPMENTAL DELAY COURSES

8551/8552	Social Dynamics (JP)	9, 10, 11, 12	2.5/2.5
8921/8922	Health (JP)	9, 10, 11, 12	2.5/2.5
8315/8316	Science (JP)	9, 10, 11, 12	2.5/2.5
8133/8134	Functional Math (JP)	9, 10, 11, 12	2.5/2.5
8701/8702	Functional Academics (JP)	9, 10, 11, 12	2.5/2.5
8703/8704	Functional Academics 2 (JP)	9, 10, 11, 12	2.5/2.5
8813/8814	Intro to Community & Independent Living (JP)	9, 10, 11, 12	2.5/2.5
8815/8816	Community & Independent Living (JP)	9, 10, 11, 12	2.5/2.5
8901/8902	Life Skills Physical Education (JP)	9, 10, 11, 12	2.5/2.5

## SUPPORT

**8991                      SPECIAL EDUCATION INTERN – Non-Weighted                      11, 12                      2.5**

Internships offered by the Special Education Department provide valuable opportunities for students wishing to explore a career in the Special Education field. Students have the opportunity to be placed in classrooms with teachers and/or specialists overseeing their experience in working students who have intensive special needs, students with autism, and students who have intellectually impairments. In addition, students wishing to specialize in Speech and Language, Occupational Therapy and/or Physical Therapy have the opportunity to work with these specialists. Students pursuing internships are also expected to be role models for the special needs students. All candidates must present themselves to the Special Education Department Chair and complete an interview process to determine eligibility.

## FUNDAMENTALS OF ACADEMICS COURSES

These are a series of substantially separate academic classes taught by special education staff. The curriculum is based on the Massachusetts State Frameworks and Lowell High School curriculum. The pace and delivery of instruction are modified.

## FUNDAMENTALS OF ACADEMICS COURSES

8001/8002	Fundamentals of English 1 (SP)	9	2.5/2.5
8003/8004	Fundamentals of English 2 (SP)	10	2.5/2.5
8005/8006	Fundamentals of English 3 (SP)	11	2.5/2.5
8007/8008	Fundamentals of English 4 (SP)	12	2.5/2.5
8053/8054	Fundamentals of Literature for Contemporary Youth (SP)	10, 11, 12	2.5/2.5
8100	Fundamentals of Math MCAS Prep (SP)	10, 11, 12	2.5
8103/8104	Fundamentals of Algebra 1 (SP)	9	2.5/2.5
8103/8104	Fundamentals of Algebra 1 (SP)	10, 11, 12	2.5/2.5
8105/8106	Fundamentals of Geometry (SP)	10, 11, 12	2.5/2.5
8151/8152	Fundamentals of Financial Math (SP)	11, 12	2.5/2.5
8301/8302	Fundamentals of Science (SP)	9	2.5/2.5
8303/8304	Fundamentals of Biology 1 (SP)	10	2.5/2.5
8305/8306	Fundamentals of Biology 2 (SP)	11	2.5/2.5
8401/8402	Fundamentals of Topics In World History (SP)	9	2.5/2.5
8403/8404	Fundamentals of Topics In US History 1 (SP)	10	2.5/2.5
8407	Fundamentals of the Evolution of American Rights and Civil Liberties (SP)	11	2.5
8408	Fundamentals of American Foreign Policy since 1776(SP)	11	2.5



## MATH

**8100**                    **FUNDAMENTALS OF MATH MCAS PREP**                    **10, 11, 12**                    **2.5 Cr.**

Fundamentals of Math MCAS Prep prepares students who have scored below a 240 on the test. The five strands of the MCAS Math test are reviewed with emphasis placed on number sense and operations, patterns, relations and Algebra, Geometry, measurement, data analysis, statistics and probability. Test taking skills and strategies as well as study skills are also covered.

**8103/8104**            **FUNDAMENTALS OF ALGEBRA 1 (SP)**                    **9 NC, 10, 11, 12**            **2.5/2.5 Cr.**

Fundamentals of Algebra 1 includes topics of algebra including constants and variables, functions, open phrases and sentences, postulates and properties of real numbers, linear equations, signed numbers, operations, and word problems. Topics to be studied include solution of quadratic equations, expressions, and graphing.

**8105/8106**            **FUNDAMENTALS OF GEOMETRY (SP)**                    **10, 11, 12**                    **2.5/2.5 Cr.**

Fundamentals of Geometry include proof and logic as well as to its applications to the physical world. Properties of lines, angles and triangles are examined and in some cases deduced from other properties. Transformations are studied; properties and measurements of polygons and circles are included. Properties and measurement of solid figures are studied. Measurement and applications are emphasized. The idea of similarity is introduced and applied.

**8151/8152**            **FUNDAMENTALS OF FINANCIAL MATH (SP)**                    **11, 12**                    **2.5/2.5 Cr.**

Fundamentals of Financial Math is for students that have passed Algebra I and Geometry will be able to explore real-life Math applications. The course will begin with a brief review of the order of operations, positive and negative numbers, and the relationship and operations of fractions decimals, and percents. Following this review of prior knowledge, students will engage in various math topics that can be applied to real life. These topics will greatly assist students as they move in to their post-secondary phase of life. Students will also spend time reviewing the MCAS including multiple-choice questions, open response questions, and various testing strategies. Some questions will be focused on data and graphs, including pie charts, bar graphs, and stats including mean, median, and mode.



## SCIENCE

**8301/8302      FUNDAMENTALS OF INTEGRATED SCIENCE (SP)      9      2.5/2.5 Cr.**

Fundamentals of Science introduce students to the processes of life in order to allow students to make scientifically informed decisions related to their health, and the health of the planet. It is designed to provide both content knowledge and skills needed to succeed in higher level Biology courses and to prepare for the MCAS Biology exam.

**8303/8304      FUNDAMENTALS OF BIOLOGY 1 (SP)      10      2.5/2.5 Cr.**

Fundamentals of Biology provide a basic understanding of the scientific processes that make up the unified principles of life. Topics include cellular physiology and function, cellular respiration and photosynthesis, DNA structure and function, genetic mechanisms of inheritance, and evolution. Emphasis is placed on the diversity and unity of the living world, genetic continuity, and changes in organisms over time. This course satisfies a science graduation requirement.

**8305/8306      FUNDAMENTALS OF BIOLOGY 2 (SP)      11, 12      2.5/2.5 Cr.**

Fundamentals of Biology 2 provides a further in depth study of ecology, systems of the human body, diversity of living organisms, including viruses, bacteria, protists, fungi, plants, sponges, worms, mollusks, arthropods, echinoderms, fishes, amphibians, reptiles, birds mammals, and animal behavior.

## SOCIAL STUDIES

**8401/8402      FUNDAMENTALS OF TOPICS IN WORLD HISTORY (SP)      9      2.5/2.5 Cr.**

Fundamentals of Topics in World History begin with a review of the Fall of Rome and ends with the Age of Reformation. Part 2 begins with the Renaissance in Europe and ends with the colonization of the Americas. It is designed in accordance with the Massachusetts Curriculum Frameworks for World History and integrates history, geography, economics and government. Students will engage in a variety of learning activities and assessments as they increase their knowledge of the global community.

**8403/8404      FUNDAMENTALS OF TOPICS IN US HISTORY 1 (SP)      10      2.5/2.5 Cr.**

Fundamentals of Topics in US History emphasizes the major events in the history of the United States along with the US Constitution. It is designed in accordance with the Massachusetts Curriculum Frameworks to provide students with a fundamental knowledge of the American ideologies of freedom and the pursuit of happiness. The course integrates history, geography, economics, and government.

**8407**                    **FUNDAMENTALS OF THE EVOLUTION OF AMERICAN  
RIGHTS AND CIVIL LIBERTIES (SP)**                    **11**                    **2.5**

The Fundamentals of The Evolution of American Rights and Civil Liberties course covers An understanding of the American political system, with emphasis on the origins and evolution of rights and civil liberties. The objective is for students to enhance our participatory democracy by empowering students with the knowledge of how the system works and how it can be changed. The course, designed in accordance with the Massachusetts Curriculum Frameworks integrates history, geography, economics and government.

**8408**                    **FUNDAMENTALS OF AMERICAN FOREIGN POLICY SINCE 1776 (SP)**                    **11**                    **2.5**

The Fundamentals of American Foreign Policy since 1776 covers the history of American Foreign Policy to present day. Students will examine American foreign policy throughout its history along with how the US becomes involved in international events. The course, designed in accordance with the Massachusetts Curriculum Frameworks integrates history, geography, economics and government

## ADJUSTMENT COURSES

Special Education staff work with students who have been identified with an emotional disability. The services are provided in inclusive or substantially separate settings to ensure social, emotional and academic success.

## ADJUSTMENT COURSES

8021/8022	English 1 (AD)	9	2.5/2.5
8023/8024	English 2 (AD)	10	2.5/2.5
8025/8026	English 3 (AD)	11	2.5/2.5
8027/8028	English 4 (AD)	12	2.5/2.5
8051	Literature & Contemporary Youth (AD)	10, 11, 12	2.5
8063	Iconic Children's Literature (AD)	10, 11, 12	2.5
8061/8062	Balanced Literacy (AD)	9	2.5/2.5
8123/8124	Algebra 1 (AD)	9	2.5/2.5
8125/8126	Geometry (AD)	10	2.5/2.5
8153/8154	Financial Mathematics (AD)	11, 12	2.5/2.5
8135/8136	Math 4 (AD)	11,12	2.5/2.5
8317/8318	Explorations in Life Science	9	2.5/2.5
8313/8314	Biology (AD)	10	2.5/2.5
8321	Environmental Science (AD)	11,12	2.5
8322	Earth & Human Activity (AD)	11,12	2.5
8351	Geology (AD)	11, 12	2.5
8411/8412	World History (AD)	9	2.5/2.5
8413/8414	US History 1 (AD)	10	2.5/2.5
8409	Fundamentals of the Evolution of American Rights and Civil Liberties (AD)	11	2.5
8410	Fundamentals of American Foreign Policy since 1776 (AD)	11	2.5
8419	Know Your World	11,12	2.5
8543	Leadership Through Adventure (AD)	10, 11, 12	2.5
8547/8548	Social Dynamics 1 (AD)	9R, 10	2.5/2.5
8549/8550	Social Dynamics 2 (AD)	10R, 11	2.5/2.5
8903/8904	Adjustment Physical Education (AD)	9, 10, 11, 12	2.5/2.5
8911	Health A (AD)	9,10,11,12	2.5
8912	Health B (AD)	9,10,11,12	2.5
9201/9202	Freshman Seminar – Non-Weighted (AD)	9 (FA)	2.5/2.5



**8063**                    **Iconic Children’s Literature -College (AD)**                    **10, 11, 12**                    **2.5 Cr.**

There are many beautiful and powerful Children’s books that are deeply rooted in our society. The symbolism of these stories can be found in our politics, movies, adult literature, television, advertising, and in the college classroom. This course will examine a variety of children’s literature with emphasis on parables, fables and allegories. The sophisticated themes and morals of these works will be analyzed and discussed by students with activities that provide text-to-life connection.

**8061/8062**            **BALANCED LITERACY (AD)**                    **9**                    **2.5/2.5 Cr.**

Balanced Literacy is an intensive reading intervention program designed to meet the needs of students who are reading below grade level. The program directly addresses individual student needs through adaptive instructional software, high interest fiction and non-fiction, and direct instruction in reading and writing skills.

**9201/9202**            **FRESHMAN SEMINAR (AD) – Non-Weighted**                    **9 (FA)**                    **2.5/2.5 Cr.**

Freshman Seminar provides students with an opportunity for “self-study”. Throughout the year, students will explore career interests, establish goals, and explore possibilities for post-secondary pathways. This introductory course infuses a PBIS framework and develops students’ organizational skills and study habits in order for them to navigate through their Freshman Year successfully. In addition, Freshman Seminar focuses on enhancing student literacy: functional literacy, digital literacy, and financial literacy.

## **MATH**

**8123/8124**            **ALGEBRA 1 (AD)**                    **9**                    **2.5/2.5 Cr.**

Standard topics of introductory algebra are covered, including constants and variables, functions, and properties of real numbers, linear equations, signed numbers, operations with polynomials, word problems leading to linear equations, and factoring. Topics to be studied include rational expressions, graphing, systems of linear equations, ratio, proportion and properties and arithmetic of irrational numbers. This course satisfies an Algebra graduation requirement.

**8125/8126**            **GEOMETRY (AD)**                    **10**                    **2.5/2.5 Cr.**

Geometry is developed with a view to proof and logic as well as to its applications to the physical world. Properties of lines, angles and triangles are examined and in some cases deduced from other properties. Properties and measurement of solid figures are studied. The idea of congruence is introduced and the classical postulates and theorems on congruent triangles and parallelograms are discussed. Measurement and applications are emphasized. The idea of similarity is introduced and applied. The right triangle is given special attention. This course satisfies a Geometry graduation requirement.



**8322**                    **EARTH & HUMAN ACTIVITY (AD)**                    **11, 12**                    **2.5 Cr.**

Earth & Human Activity helps students understand natural resources, natural hazards, human impact on Earth systems, and global climate change. Students understand the complex and significant interdependencies between humans and the rest of Earth's systems through the impacts of natural hazards, our dependencies on natural resources, and the significant environmental impacts of human activities

**8351**                    **GEOLOGY (AD)**                    **11, 12**                    **2.5 Cr.**

Geology will provide students with the opportunity to gain knowledge of the basic concepts of Physical and Historical Geology. This will be accomplished by lectures; class discussions concentrating on the understanding of the rock cycle, rock and mineral types, earth's resources, weathering and erosion, carbon cycle, water cycle, plate tectonics, earthquakes, volcanoes, mountain building, and the understanding of the ocean floor features and circulation, atmosphere, weather patterns, climate, geologic time scale, astronomy, and solar system.

## **SOCIAL STUDIES**

**8411/8412**            **WORLD HISTORY (AD)**                    **9**                    **2.5/2.5 Cr.**

World History begins with a review of the fall of Rome and ends with the Age of Reformation. It is designed in accordance with the Massachusetts Curriculum Frameworks and integrates history, geography, economics, and government. Students will engage in a variety of learning activities and assessments as they increase their knowledge of the global community.

**8413/8414**            **US HISTORY 1 (AD)**                    **10**                    **2.5/2.5 Cr.**

U.S. History 1 emphasizes the major events in the history of the United States from the American Revolution to the War of 1812. It is designed, in accordance with the Massachusetts Curriculum Frameworks, to provide students with a fundamental knowledge of the origins of the American ideologies of freedom and the pursuit of happiness. U. S. History IA includes a detailed study of the Constitution. The course integrates history, geography, economics, and government. This course satisfies a U. S. History graduation requirement.

**8409**                    **FUNDAMENTALS OF THE EVOLUTION OF AMERICAN RIGHTS AND CIVIL LIBERTIES (AD)**

**11**                    **2.5**

The Fundamentals of The Evolution of American Rights and Civil Liberties course covers An understanding of the American political system, with emphasis on the origins and evolution of rights and civil liberties. The objective is for students to enhance our participatory democracy by empowering students with the knowledge of how the system works and how it can be changed. The course, designed in accordance with the Massachusetts Curriculum Frameworks integrates history, geography, economics and government

**8410                    FUNDAMENTALS OF AMERICAN FOREIGN POLICY SINCE 1776(AD)                    11                    2.5**

The Fundamentals of American Foreign Policy since 1776 covers the history of American Foreign Policy to present day. Students will examine American foreign policy throughout its history along with how the US becomes involved in international events. The course, designed in accordance with the Massachusetts Curriculum Frameworks integrates history, geography, economics and government.

**8419                    KNOW YOUR WORLD (AD)                    10, 11, 12                    2.5 Cr.**

The Know Your World course will create a learning opportunity for students to explicitly engage in processes that expose them to learning about where they live (Lowell, Massachusetts, New England) and all of the rich background information derived from studying their surroundings. The course will combine research and study in the classroom with hands-on exploration during community trips and field studies. Students in the classroom will study a selected topic through a variety of medium – web based research, books, magazines, videos, maps, etc. Once completed, the class does a site visit to further the study of a topic and to immerse adjustment students in an authentic, motivating environment that builds knowledge through experiential learning.

**8543                    LEADERSHIP THROUGH ADVENTURE (AD)                    10, 11, 12                    2.5 Cr.**

Leadership Through Adventure engages students through various games and initiatives. Within the context of these activities, students explore the themes of effective communication, productive teamwork, creating trust, and successful problem-solving. Participants work collaboratively to develop and utilize strategies to accomplish the tasks and goals of presented challenges. Students will evaluate and debrief adventure activities in order to make connections to effective leadership. This course utilizes both low and high energy activities and is primarily based outdoors.

**8547/8548            SOCIAL DYNAMICS 1 (AD)                    9R, 10                    2.5/2.5 Cr.**

Social Dynamics 1 supports students in their school experience. The curriculum is designed to teach goal-setting and problem-solving strategies; increase students' empathy and self-awareness; help students understand and respond to their disabilities; and assist students as they work to create healthy interpersonal relationships. Students will learn to confront and manage the roadblocks that impede their academic and social success. Students will be given the opportunity to integrate and generalize the skills taught, and will increase their capacity to assimilate into the community. The goal is for students to stay academically engaged, attain graduation status, and become productive citizens of society. This course is intended to be a full year course for a total of 5 credits.

**8549/8550            SOCIAL DYNAMICS 2 (AD)                    11, 11R                    2.5/2.5 Cr.**

Social Dynamics 2 builds upon the themes introduced in Fundamentals of Social Dynamics I, including in-depth analysis of social/emotional issues and how these issues impact everyday life. A major focus of FSD 2 is fostering greater independence and planning for life after high school. This course also introduces students to various community services and resources. In addition to group discussions and reflective writing, students will participate in authentic learning activities.





## SPECIAL EDUCATION SUPPORT COURSES

<b>8851/8852</b>	<b>Instructional Support 1</b>	<b>9</b>	<b>2.5/2.5</b>
<b>8853/8854</b>	<b>Instructional Support 2</b>	<b>9 non-clustered, 10</b>	<b>2.5/2.5</b>
<b>8855/8856</b>	<b>Instructional Support 3</b>	<b>11</b>	<b>2.5/2.5</b>
<b>8857/8858</b>	<b>Instructional Support 4</b>	<b>12</b>	<b>2.5/2.5</b>
<b>8859/8860</b>	<b>Instructional Support (HI)</b>	<b>9, 10, 11, 12</b>	<b>2.5/2.5</b>
<b>8873/8874</b>	<b>Instructional Support (AD)</b>	<b>9R, 10, 11, 12</b>	<b>2.5/2.5</b>

Instructional Support provides direct instruction in the individual goals and objectives listed in each student’s IEP. Instruction occurs in small group and/or one on one to support completion of general education class assignments. Special Education teachers monitor students’ progress in general education classes and provide assistance and re-teaching as needed. Students learn organizational skills and study skills in this class to help them successfully access the general education curriculum. Assessment data is used to determine the need for remedial instruction and support students as they take the MCAS tests required for high school graduation.

<b>8081/8082</b>	<b>Decoding 1</b>	<b>9, 10, 11, 12</b>	<b>2.5/2.5</b>
<b>8083/8084</b>	<b>Decoding 2</b>	<b>9, 10, 11, 12</b>	<b>2.5/2.5</b>
<b>8085/8086</b>	<b>Decoding 3</b>	<b>9, 10, 11, 12</b>	<b>2.5/2.5</b>
<b>8087/8088</b>	<b>Decoding 4</b>	<b>9, 10, 11, 12</b>	<b>2.5/2.5</b>
<b>8089/8090</b>	<b>Decoding 5</b>	<b>9, 10, 11, 12</b>	<b>2.5/2.5</b>
<b>8091/8092</b>	<b>Decoding (HI)</b>	<b>9, 10, 11, 12</b>	<b>2.5/2.5</b>

Decoding provides a structured, systematic, multi-sensory approach to teach students how to decode and encode. The skills taught in this course enhance fluency, comprehension, and improve reading skills to enhance independence and success within the general education curriculum.



**8315/8316 SCIENCE (JP) 9, 10, 11, 12 2.5/2.5 Cr.**

Science covers such areas as General Science, Earth & Space Science, Life Science, basic Biology and Human Anatomy. It streamlines content vocabulary, comprehension materials and communication skills throughout the course. Students will use a variety of visuals, flashcards, functional boards, videos, manipulative and hands-on materials, as well as paper application skills.

**8551/8552 SOCIAL DYNAMICS (JP) 9, 10, 11, 12 2.5/2.5 Cr.**

Social Dynamics offers students the opportunity to learn, practice and generalize pragmatic language (e.g., making inferences, determining solutions, problem solving, interpreting perspectives, transferring insights), nonverbal and verbal communication skills (e.g., eye contact, feedback, turn taking, personal space, topic maintenance, body language, commenting, clarification, tone of voice), social skills (e.g., speaking with formal and informal communication partners, beginning and maintaining relationships), and self-advocacy skills.

**8601 Computer Basics (JP) 11, 12 2.5/2.5 Cr.**

Students will learn how to manage and utilize technology effectively to help them succeed in school and in a career. The course consists of introduction to basic Microsoft Office, Google and Internet-based applications, working with email and learning how to browse the web. Students will also demonstrate safe practices for sharing personal information on the internet. Students will become familiar with computer hardware and software as well as increase typing speed and accuracy.

**8701/8702 FUNCTIONAL ACADEMICS 1 (JP) 9, 10, 11, 12 2.5/2.5 Cr.**

Functional Academics develops and enhances communication skills through oral and written language in English Language Arts and U.S. History. The Language Arts and writing skills while explicitly and directly taught can also be found embedded in content area curriculum in order to maximize student's success in generalizing skills. This includes, but not limited to, reading, vocabulary, sentence structure and discussion surrounding given topics. Significant historical events and/or people, geography, and calendar concepts are explored in the Social Studies component of the course.

**8703/8704 FUNCTIONAL ACADEMICS 2 (JP) 9, 10, 11, 12 2.5/2.5 Cr.**

Functional Academics uses the skills acquired in Life Skills Academics to build on reading, vocabulary, communication and written language by integrating it into functional, real world applications. This class covers topics that include Math; money, checkbooks, budgeting and measurement through cooking. It also includes content in the areas of functional writing; job applications, letter writing for jobs, using computer programs to type, as well as, reading functional vocabulary, recipes, and content related to given job units.

**8813/8814      INTRO TO COMMUNITY & INDEPENDENT LIVING (JP)**

**9, 10, 11, 12      2.5/2.5 Cr.**

Intro to Community & Independent Living focuses on the introduction to topics surrounding job skills, activities of daily living and community awareness. The Pre-vocational content will include but is not limited to; introduction to kitchen safety and vocabulary surrounding recipes, meal planning, grocery shopping, and cooking. Laundry skills, as well as, cleaning and organizing will be discussed throughout the courses. Skills surrounding self-identification, hygiene, interpersonal relations and community awareness, with concentration on the school community as a whole, will be included within the curriculum. Controlled, real world application will occur throughout the course for the above skills learned.

**8815/8816      COMMUNITY AND INDEPENDENT LIVING (JP)**

**9, 10, 11, 12      2.5/2.5 Cr.**

Community And Independent Living focuses on skills needed in order to live and work towards a successful, independent life. Students in this program will learn skills that include, but not limited to, Independent Living (Activities of Daily Living), Job Skills, Community Awareness and Social Emotional training. Job Skills will include; how to dress for a job, interview skills, practical application of jobs, phone skills and skills surrounding rules and maintaining placement in the work environment. They will be working towards independence within the Kitchen; including but not limited to; planning recipes/meals, grocery lists/shopping and meal preparation. Skills will be built upon from the ones learned in Intro to Community/Independent Living. This also includes basic household maintenance and personal hygiene. Community Awareness will include; riding the public transportation, navigating directions, community signs and community helpers. Information will be given on identification of and access to post-secondary services.

**8817/8818      BUSINESS PRACTICES (JP)**

**9, 10, 11, 12      2.5/2.5 Cr.**

Business Practices is a work based, learning opportunity in the school's Copy Center for students in the Job Prep Program. Students will have opportunities to develop skills in the areas related to: reading order forms, following multistep directions, functions and use of Copy Machines, recording and maintaining records of copies, as well as, completing deliveries to various locations within the Lowell High School Community. Students are also provided opportunities to practice Work Place Etiquette and are provided feedback through surveys and observation.

**8921/8922      HEALTH (JP)**

**9, 10, 11, 12      2.5/2.5 Cr.**

Health focuses on a variety of topics such as wellness, human anatomy and its systems, nutrition, drug and alcohol awareness, first aid & personal safety, CPR, and personal hygiene skills. The course is designed to help prepare the students for adolescent and adult social interaction and situations and how to deal with them at as high an independent level as possible.









**8815/8816      COMMUNITY & INDEPENDENT LIVING (JP)      9, 10, 11, 12      2.5/2.5 Cr.**

Community & Independent Living focuses on skills needed in order to live and work towards a successful, independent life. Students in this program will learn skills that include, but not limited to, Independent Living (Activities of Daily Living), Job Skills, Community Awareness and Social Emotional training. Job Skills will include; how to dress for a job, interview skills, practical application of jobs, phone skills and skills surrounding rules and maintaining placement in the work environment. They will be working towards independence within the Kitchen; including but not limited to; planning recipes/meals, grocery lists/shopping and meal preparation. Skills will be built upon from the ones learned in Intro to Community/Independent Living. This also includes basic household maintenance and personal hygiene. Community Awareness will include; riding the public transportation, navigating directions, community signs and community helpers. Information will be given on identification of and access to post-secondary services.

**8901/8902      LIFE SKILLS PHYSICAL EDUCATION (JP)      9, 10, 11, 12      2.5/2.5 Cr.**

Life Skills Physical Education classes are designed for individuals with special needs. Classes offer students a challenging range of activities to improve coordination, attention, physical health and self-esteem. Participants are offered a variety of activities such as walking, volleyball, soccer, hockey, biking, whiffle ball and jump rope.



**8921/8922 HEALTH (JP) 9, 10, 11, 12 2.5/2.5 Cr.**

Health focuses on a variety of topics such as wellness, human anatomy and its systems, nutrition, drug and alcohol awareness, first aid & personal safety, CPR, and personal hygiene skills. The course is designed to help prepare the students for adolescent and adult social interaction and situations and how to deal with them at as high an independent level as possible.

**8315/8316 SCIENCE (JP) 9, 10, 11, 12 2.5/2.5 Cr.**

Science covers such areas as General Science, Earth & Space Science, Life Science, basic Biology and Human Anatomy. It streamlines content vocabulary, comprehension materials and communication skills throughout the course. Students will use a variety of visuals, flashcards, functional boards, videos, manipulative and hands-on materials, as well as paper application skills.

**8133/8134 FUNCTIONAL MATH (JP) 9, 10, 11, 12 2.5/2.5 Cr.**

Functional Math teaches students functional mathematical skills and concepts that can be applied to real world situations. This will include calculation skills, money skills, operations, time, calendars, time management, measurement, basic fractions and other functional concepts. The course will teach students to apply topics covered in the classroom that can be applied across the curriculum and generalize skills in different settings. Concepts will be introduced and taught using a variety of flashcards, manipulative materials, functional boards, and hands on materials, as well as paper application skills.

**8701/8702 FUNCTIONAL ACADEMICS 1 (JP) 9, 10, 11, 12 2.5/2.5 Cr.**

Functional Academics develops and enhances communication skills through oral and written language in English Language Arts and U.S. History. The Language Arts and writing skills while explicitly and directly taught can also be found embedded in content area curriculum in order to maximize student's success in generalizing skills. This includes, but not limited to, reading, vocabulary, sentence structure and discussion surrounding given topics. Significant historical events and/or people, geography, and calendar concepts are explored in the Social Studies component of the course.

**8703/8704 FUNCTIONAL ACADEMICS 2 (JP) 9, 10, 11, 12 2.5/2.5 Cr.**

Functional Academics uses the skills acquired in Life Skills Academics to build on reading, vocabulary, communication and written language by integrating it into functional, real world applications. This class covers topics that include Math; money, checkbooks, budgeting and measurement through cooking. It also includes content in the areas of functional writing; job applications, letter writing for jobs, using computer programs to type, as well as, reading functional vocabulary , recipes, and content related to given job units.



# ACADEMIC PROGRAMS

## LOWELL LATIN LYCEUM

The Lowell High School Latin Lyceum is a selective admissions exam program within Lowell High School that engages academically promising students in a challenging college preparatory curriculum intended to broaden and deepen their knowledge, skills, understandings, and civic commitment with an emphasis on a classical education.

Objectives of the academic program include: development of critical and logical thinking, precise communication, scientific analysis, creative problem solving, and empathetic understanding of the social, scientific and political backgrounds of civilization. Communicating clearly and effectively as well as reasoning quantitatively will extend across the disciplines through a constant collaboration among the Lowell Latin Lyceum faculty team.

The Lowell Latin Lyceum strives to create young scholars in the classical tradition who are well-rounded, cultured, self-disciplined, critical thinkers who can compete at the highest academic levels. The Lowell Latin Lyceum will:

- Provide a fully integrated environment.
- Promote regular and continuous intellectual growth.
- Promote cultural and linguistic sensitivity.
- Encourage teachers, parents, and students to be partners in the educational process.
- Ensure that learning occurs in both the cognitive and affective dimensions.
- Provide the opportunities for independent learning and research.

### Latin Lyceum Course Selection Information

#### Graduation Requirements:

Math	4 years
English	4 years
Social Studies	4 years
Science	4 years
World Language	2 years Latin (3 years for class of 2019)
Health A/B*	1 year
Physical Education*	4 years
LL Freshman Seminar	1 year
LL Senior Seminar	1 semester (recommended)

\*Band or Dance can substitute for PE; ROTC can substitute for PE & Health.

# LATIN LYCEUM

## ~ COURSE REQUIREMENTS ~

<b>Grade 9</b>	HH-English 1 HH-World History H-Integrated Science H-Algebra 1 <u>or</u> HH-Geometry H-Latin LL Seminar Physical Education/Health*
<b>Grade 10</b>	HH-English 2 AP European History H-Biology H-Geometry <u>or</u> HH-Geometry <u>or</u> HH-Algebra 2/Trig H-Latin 2 Physical Education/Health*
<b>Grade 11</b>	HH-American Studies AP-US 1 (Class of 2019) or AP-US 2 H-level or higher Science course H or AP level Math H-Latin 3 or AP-Latin 3 <i>(Required beginning with the Class of 2019/Recommended for others)</i> Physical Education*
<b>Grade 12</b>	AP-English 4 AP-US 2 (Class of 2019) or H-Level Social Studies course H-level or higher Science course H or AP level Math H-Latin 4 or AP-Latin 4 (Recommended) LL Senior Seminar (1 semester – Recommended) Physical Education*

\*Band, Dance or Show Choir can substitute for PE; ROTC can substitute for PE & Health.

# **CLEMENT GREGORY McDONOUGH FRESHMAN ACADEMY**

The vision of Lowell High School's Freshman Academy is to provide students with an environment that supports and sustains continued learning and mutual respect. Our goal is to insure that all students who enter as freshmen successfully leave with the skills and knowledge needed to enter grade 10. The Freshman Academy operates on a cluster model comprised of teams of 8 -12 academic teachers, a guidance counselor, and student support specialist who share the same students with the assistance of a school social worker. These teams provide instruction and support addressing the importance of academics, discipline, and attendance to further academic growth and achievement for all students. The cluster model nurtures individual students to become active participants in a community of learners. This learning environment is most responsive to the emerging needs and talents of students who are making the transition to a high school setting. The challenges students meet and the experiences they gain in the Freshmen Academy will help to insure their continued academic success at Lowell High School.

The cluster teams are comprised of teachers from four core courses: English, Social Studies, Math, and Science. Three levels of courses are offered: High Honors, Honors and College. Students must be enrolled at the same levels in the humanities courses and at the same levels in the STEM courses. For example, if a student is enrolled in high honors English, he or she must also be enrolled in high honors history. Students also take one of the non-weighted Freshman Seminars. The traditional Seminar course provides students content-based literacy skills, organization and time management techniques, as well as units on academic requirements, goal setting, career awareness, and MCAS skill building. Math Seminar is an intervention course designed to meet the needs of students with math skills below grade level.

All freshman students must take a semester of Health and a semester of Physical Education. However, Band or Show Choir may be substituted for this Physical Education requirement and AFJROTC may be substituted for both this Physical Education and Health requirement.

Please choose your freshman courses carefully. Course changes after an assignment to a cluster cannot be routinely granted. Our past experience indicates that proper initial placement within the freshman cluster is the key to a student's overall success in high school.

Parents should consult with school counselors and/or eighth grade teachers, if they are not sure of the appropriate academic level for the ninth grade courses.

# FRESHMAN ACADEMY

## ~ Sample Schedules ~

### College – Level College – Level

<b>0131/0132</b>	English 1
<b>4121/4122</b>	Essential Skills in World History
<b>1121/1122</b>	Algebra 1
<b>3131/3132</b>	Integrated Science
<b>9201/9202</b>	Freshman Seminar
<b>9001/9011*</b>	Physical Education/Health
xxxx/xxxx	Elective

### (English and Math Assigned)

<b>0111/0112</b>	Explorations in English
<b>4121/4122</b>	Essential Skills in World History
<b>1111/1112</b>	Transitions to Algebra
<b>3221/3222</b>	Explorations in Integrated Science
<b>9201/9202</b>	Freshman Seminar
<b>9001/9011*</b>	Physical Education/Health
xxxx/xxxx	Elective

### Honors – Level

<b>0141/0142</b>	English 1
<b>4141/4142</b>	World History
<b>1141/1142</b>	Algebra 1
<b>3141/3142</b>	Integrated Science
<b>9201/9202</b>	Freshman Seminar
<b>9005/9011*</b>	Physical Education/Health
xxxx/xxxx	Elective

### High Honors – Level

<b>0151/0152</b>	English 1
<b>4181/4182</b>	World History
<b>1251/1252</b>	Geometry
<b>3141/3142</b>	Integrated Science
<b>9201/9202</b>	Freshman Seminar
<b>9005/9011*</b>	Physical Education/Health
xxxx/xxxx	Elective

### Latin Lyceum

<b>0151/0152</b>	English 1
<b>4181/4182</b>	World History
<b>1141/1142</b>	Algebra 1 or <b>1251/1252</b> Geometry & Analytic Geometry
<b>3141/3142</b>	Integrated Science
<b>9205/9206</b>	Latin Lyceum Seminar
<b>9005/9011*</b>	Physical Education/Health
<b>2113/2114</b>	Latin

Students will be placed in Geometry and Analytic Geometry based on their Math Placement Exam score.

**Elective Offerings:** Please see the LHS Course Catalog for a full listing of course electives.

\* Band (7141/7142), Dance (7901/7902) or Show Choir (7301/7302) can substitute for Physical Education. ROTC (9321/9322) can substitute for Physical Education and Health\*\*\*



# ADVANCED PLACEMENT

Lowell High School offers 15 Advanced Placement (AP) courses throughout its curriculum. Advanced Placement is a nationwide program that is designed to prepare high school students for higher education. AP classes provide rigorous, college-level curriculum in various subjects and the opportunity to earn college credits or advanced college standing. The AP program is made possible by the close cooperation of secondary schools, colleges, and the College Board.

Students at Lowell High School are encouraged to take Advanced Placement courses so that they will experience rigorous, college-level work in high school. LHS currently offers 15 Advanced Placement courses in five different departments. A complete list of courses is available below. Students and parents are urged to read the AP course descriptions to understand the level of work expected. In addition, they are encouraged to seek advice from teachers, counselors, and department chairs about which AP classes would be the best fit with their high school program and their college and career plans.

## LHS AP Course Offerings

0461/0462	English 4 AP	English	12	2.5/2.5
1651/1652	Computer Programming AP	Math, Technology	11, 12	2.5/2.5
1475/1476	Calculus AB AP	Math	11, 12	2.5/2.5
1477/1478	Calculus BC AP	Math	12	2.5/2.5
1465/1466	Statistics AP	Math	11, 12	2.5/2.5
2545/2546	Spanish 4 AP	World Language	11, 12	2.5/2.5
2145/2146	Latin 4 AP	World Language	12	2.5/2.5
3461/3462	Physics 1 AP	Science	11, 12	5/5
3463/3464	Physics 2 AP	Science	11, 12	5/5
3465/3466	Physics C: Mechanics	Science	11,12	2.5/2.5
4261/4262	U. S. History 1 - AP	Social Studies	10	2.5/2.5
4361/4362	U. S. History 2 - AP	Social Studies	11	2.5/2.5
4561/4562	European History - AP	Social Studies	11, 12	2.5/2.5
4661/4662	U.S. Government and Politics AP	Social Studies	12	2.5/2.5
4445/4446	Psychology AP	Social Studies	12	2.5/2.5

AP courses require Department Head Approval

# DUAL ENROLLMENT PROGRAM

Qualified students can earn both high school and college credit through this program by taking select Massachusetts State Universities and Community Colleges courses. These courses are part of the regular credit-earning program of U-Mass Lowell or Middlesex Community College with instruction provided by college and/or Lowell High School teachers. Students are awarded High School credit and College credit at their respective institutions.

## MCC

- Students must be of Junior or Senior Standing
- Students must take the Accuplacer Exam and achieve qualifying scores
- Instruction given by Lowell High School teachers

## UMASS – LOWELL

- Students must be of Junior or Senior Standing
- Students must meet course prerequisites
- Instruction given by college professors and Lowell High School teachers
- In some cases, no grades are assigned for first or third marking periods. This may impact rank in class during these marking periods.
- A final grade is awarded at the completion of each course. This will coincide with second and fourth marking periods.

## LHS DUAL ENROLLMENT COURSE OFFERINGS

0463/0464	English Composition - MCC	English	12	2.5/2.5
1453/1454	Pre-Calculus I for Science MCC	Math	11,12	2.5
3971	Intro to Engineering – MCC	Science	12	2.5
3731/3732	Principles of Biology – UML	Science	11, 12	5/5
3250	General Biology 1 – MCC	Science	11, 12	2.5
3735	Environmental Studies- MCC	Science	11, 12	2.5
3721/3722	Chemistry – UML	Science	11, 12	4/4
3723/2724	Chemistry Lab – UML	Science	11, 12	1/1
4435	Intro to Sociology - MCC	Social Studies	12	2.5
4447	Intro to Psychology MCC	Social Studies	12	2.5
7871	Film, Video and Society – MCC	Fine Arts	12	2.5

# ARTICULATION AGREEMENTS

Lowell High School has articulation agreements for select courses with Middlesex Community College, Johnson and Wales, Lincoln Culinary Institute and Central Maine Community College. Articulation Agreements provide students with college credits for successfully completing Lowell High School courses should they attend the school specified.

Each school has a minimum grading and attendance requirement in addition to other criteria that need to be met before credit is recognized by the colleges. Students must attend the school issuing credits through the Articulation Agreement. Students should consult their Guidance Counselor for more information.

## MIDDLESEX COMMUNITY COLLEGE

### Business

6111/6112 Accounting I or  
6113/6114 Accounting I

BUS 120 Intro to Accounting I

6211/6212 Business Law or  
6213/6214 Business Law

LGL 102 Business Law

6141 Personal Finance or  
6143 Personal Finance

BUS121 Personal Money Management

6161 Introduction to Financial Services and  
6162 Introduction to Financial Services

BUS 124 Cooperative Field Experience I

6311/6312 Marketing and Entrepreneurship or  
6313/6314 Marketing and Entrepreneurship

BUS 240 Principles of Marketing

### TV Production

7825/7826 Introduction to TV Production

COM 121 Introduction to TV Production  
(3 Credits)

### Programming

1621/1622 Visual Basic Programming

CSC 101 Introduction to Computer Science  
(4 Credits)

### Health and Bioscience

9023/9024 Medical Terminology

MAS 101 Medical Terminology

## **Culinary**

Culinary Arts – Beginners and  
Culinary Arts – Intermediate and  
Culinary Arts – Advanced

BUS 155 Culinary Theory (3 Credits) and  
BUS 156 Culinary Skills (3 Credits) and  
BUS 157 Bakery and Pastry Skills (3 Credits) and  
BUS 158 Sanitation and Food Service Operations  
(3 Credits)

## **Lincoln Culinary Institute**

Culinary Arts – Beginners and  
Culinary Arts – Intermediate and  
Culinary Arts – Advanced

CUL 140 Introduction to Culinary Arts

## **Johnson and Wales University**

Culinary Arts – Beginners and  
Culinary Arts – Intermediate and  
Culinary Arts – Advanced

CUL 1345 Introduction to Baking and Pastry  
CUL 1355 New World Cuisine  
CUL 1385 Fundamentals of Food Service  
Production  
(9 Credits)

## **Central Maine Community College**

Culinary Arts – Beginners and  
Culinary Arts – Intermediate and  
Culinary Arts – Advanced

CUA 121 Food Preparation Sanitation  
CUA 171 Nutrition and Food Quality

# LHS PATHWAYS

The Lowell High School Pathway Programs are directly connected to the skills and knowledge students need for post-secondary education and careers in some of the fastest growing professions in the world today.

Our Pathway Programs provide opportunities for all students and their different abilities, interests and talents. Whether a student is planning to work immediately after high school, or will continue learning by attending a training program, a technical institute, a college or university, there are courses in our Pathway Programs that are right for every student.

## **LHS PATHWAY PROGRAMS:**

**Air Force Junior ROTC**  
**Business: Finance & Marketing**  
**Civics, Citizenship & Communities**  
**Communications (STEM)**  
**Culinary Arts**  
**Engineering (STEM)**  
**Environmental Sustainability (STEM)**  
**Fine Arts**  
**Health & Bioscience (STEM)**

Our Pathway Programs use an applied, hands-on/minds-on approach to learning that is connected to real-world work experiences. Students in these programs have access to some unique facilities, including: a newly renovated restaurant, the J'eanne D'Arc Credit Union, the 1826 School Store, an in-house television/media center, and state-of-the-art robotics equipment and MakerSpace. We also partner with local employers as we grow our externship/internship programs providing students an opportunity to apply the classroom skills to intern positions in the workplace.

## **Benefits of the Pathway Programs include:**

- Courses tailored to a specific area of study, with a strong post-secondary and career focus.
- Teachers with industry experience as well as educational certifications.
- Skill-building around career trajectories and paths of study.
- Opportunities for students, parents, teachers and community members to be partners in the educational process.
- Internships within the community and Dual-Enrollment opportunities with UML and Middlesex Community College.
- Opportunities for independent learning and research.

For more information about our Pathway Programs, please contact:

Amy McLeod, Director of Curriculum, Instruction, and Assessment at (978) 937-8901

# AIR FORCE JUNIOR ROTC PATHWAY

The Air Force Junior ROTC Pathway is a four-year citizenship program designed to develop citizens of character dedicated to serving their nation and community. The objectives of JROTC are to educate and train high school cadets in citizenship, promote community service, instill responsibility, character, and self-discipline, and provide instruction in air and space fundamentals.

The AFJROTC program is grounded in the Air Force core values of integrity first, service before self, and excellence in all we do. The curriculum emphasizes the Air Force heritage and traditions, the development of flight, applied flight sciences, military aerospace policies, and space exploration. The curriculum shows students how to reach their full potential while serving society through self-discipline, structure, followership, and leadership. Students are challenged by assuming various leadership positions throughout the Lowell High School Cadet Corps. Senior Cadets get a taste of management organizing, planning, and coordinating numerous activities, cadets get “hands on” application of lessons learned in class.

In addition to the classroom curriculum, AFJROTC Pathway students have the opportunity to get involved in the community through a myriad of community service projects that are organized and led by cadets. Students are also eligible for learning field trips that enhance and supplement the classroom environment.

## **Curriculum opportunities include:**

- Academic studies
- Character education
- Life skills education
- Leadership opportunities
- Team-building experiences
- Intramural competition
- Extracurricular activities including Drill Team and Honor Guard
- Field trips and other training opportunities

## **AFJROTC CORE COURSES (Years 1 & 2):**

9321/9322 AFJROTC 1 - Aviation History  
9323/9324 AFJROTC 2 - Science of Flight

## **AFJROTC CORE COURSES (Years 3 & 4)**

9325/9326 AFJROTC 3 - Life Skills/Careers  
9327/9328 AFJROTC 4 - Mgmt/Cadet Corps or  
9337/9338 AFJROTC 4 - Principles of Management

## **ELECTIVE COURSES AVAILABLE:**

9351/9352 Flight Commander  
9393/9394 Aviation Ground School  
9381 Cadet Leadership Course

**\*All Pathway students must earn a minimum of 10 credits in the Air Force Junior ROTC Pathway to receive the designation of Air Force Junior ROTC Concentration status on the student’s final transcript.**

# BUSINESS: FINANCE & MARKETING PATHWAYS

The Lowell High School Business Department offers Pathways with concentrations in Finance or Marketing for students interested in majoring in Business Administration in college or entering the workforce in the areas of management, finance, accounting, or marketing. Students in these Pathways are eligible to join Business Professionals of America (BPA). This co-curricular student organization provides students with the opportunity for educational and leadership development, personal and professional growth, and career related competencies.

The Business Pathways offer students authentic learning opportunities. Our students have the ability to work in the 1826 School Store, with a site in the high school and another in the downtown. Students experience the excitement and challenges of being a small business owner. Our partnership with the Jeanne D'Arc Credit Union allows students to work in the LHS branch of the Jeanne D'Arc Credit Union where students learn the day-to-day operations of the banking industry. All of these valuable business opportunities allow students to earn high school credit and real world experiences at the same time.

The Business Department has recently articulated a number of its courses with Middlesex Community College, providing students an opportunity to complete entry-level requirements for MCC while earning credit for these courses at LHS.

## Financial Concentration

### Survey Courses:

6013	Google This - College
6111/6112	Accounting 1 - College
6113/6114	Accounting 1 - Honors
6141	Personal Finance - College
6143	Personal Finance - Honors
6211/6212	Business Law - College
6213/6214	Business Law - Honors

### Upper-level/Concentrated Courses:

6161/6162	Intro to Financial Services (JDCU) - H
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## Marketing Concentration

### Survey Courses:

6013	Google This - College
6311/6312	Marketing & Entrepreneurship - College
6313/6314	Marketing & Entrepreneurship - Honors
6350	Sports and Entertainment Marketing - College
6353	Tourism and Hotel Management - College
6352	Fashion Merchandising - College

### Upper-level/Concentrated Courses:

6315/6316	Retail Marketing - Honors
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**\*All Pathway students must earn a minimum of 10 credits in either the Financial Concentration or the Marketing Concentration to receive the designation of Financial or Marketing Concentration status on the student's final transcript.**

# CIVICS, CITIZENSHIP & COMMUNITIES PATHWAY

The Civics, Citizenship, and Communities Pathway is dedicated to educating student to be competent citizens who understand the rights and responsibilities of individuals in their community at the local, state, national, and international level. Within the Pathway, students will examine the various communities that make up Lowell and the United States, in order to probe the voice, contributions, and responsibilities of citizens in the 21st century. By providing students with challenging, thought-provoking courses grounded in the humanities and the social sciences, students will be prepared to pursue academic and professional goals in the fields of social services, community advocacy, conflict resolution, law, and education. Using a curriculum that adheres to state and national standards – and emphasizes issues of moral and responsible citizenship – students within the CCC Pathway will be prepared to participate in all aspects of our civic democratic structures. Pathway students will have requirements to fulfill each semester of their junior and senior year. During their senior year, students in the CCC Pathway will participate in a senior seminar and an internship, designed to prepare students for college, careers, and active citizenship.

- The CCC Pathway strives to provide a respectful learning community that allows students to realize their potential as compassionate and knowledgeable citizens who impact and support communities both locally and globally.
- The CCC Pathway nurtures the following critical skills in students before graduation:
  - Enhanced critical thinking, literacy, research, and technological skills;
  - Deep awareness of local, national, and global issues and cultural diversity;
  - Understanding of the complexity of social action and reaction;
  - Recognition of the consequences of individual choice in society; and,
  - The ability to apply coursework to real life experiences in the community.

## CIVICS, CITIZENSHIP & COMMUNITIES PATHWAY COURSES:

### Required Courses:

#### Grade 11:

4382	We the People: The Citizen and the Constitution – Honors (semester 1)
4563	The City of Lowell and American Industrialization and Immigration – Honors

#### Grade 12:

4570	Seminar on American Diversity - Honors
4571	Internship and Capstone Project in CCC – Honors

### Recommended Electives:

0542	Race and Ethnicity and the Written Word – Honors
0544	Literature of the Holocaust – Honors
4371	Education in American – Honors
4431 or 4435	Introduction to Sociology – H or DE (MCC)
4524	Cambodia: Culture and Conflict – Honors
4513	Topics in Facing History and Ourselves – Honors
4541/4542	Political Science – Honors
4566	Gender and Identity – Honors

**\*All Pathway students must earn a minimum of 10 credits in the Civics, Citizenship, and Communities Pathway courses to receive the designation of Civics, Citizenship, and Communities Concentration status on the student’s final transcript.**



# COMMUNICATIONS PATHWAY (STEM)

The Communications Pathway provides an opportunity for students to explore the art of communication, with an emphasis on inquiry, reading, writing, research, and presentation skills. Advanced-level multimedia instruction will include journalism, video production, graphic design and digital photography. The Communications Pathway is not just textbook learning; students generate finished products such as video documentaries, magazines, and live-aired television. Students who participate in the TV Production courses will have the opportunity to engage in pre-production, production, and post-production processes as well as participate in the creation of the Red Raider Report, which airs at LHS daily.

## Communications/Media Core Courses:

7747/7748	Introduction to Graphic Design - Honors
7758/7759	Advanced Graphic Design – Honors
7825/7826	Introduction Digital Media Production – Honors
7827/7828	Intermediate Digital Media Production - Honors
7829/7830	Advanced Digital Media Production – Honors
7833/7834	TV Newsroom: The Live Broadcast/The Raider Report - Honors
7871	Film, Society and Video (Dual Enrollment) - Advanced
7715/7716	Digital Photography - Honors
7363/7364	Digital Audio Production - Honors
7773	Animation - Honors

## Related Media Electives:

4568	Digital Journalism - Honors
0523	Public Speaking, Persuasion and Presentations - College
0524	Public Speaking, Persuasion and Presentations – Honors

**\*All Pathway students must earn a minimum of 10 credits in Communications Pathway courses to receive the designation of Communications Concentration status on the student’s final transcript.**

# CULINARY ARTS PATHWAY

The Culinary Arts Department is designed for students interested in careers within the Food Service Industry, one of the largest and fastest growing industries in the world. This Pathway is ideally a three-year program that can be tailored to one or two years on an individual basis. This Pathway integrates a rigorous academic curriculum, but it also provides “hands-on” training in a student-operated restaurant. Students are exposed to different baking and cooking techniques, a variety of table services, and customer relations. This Pathway provides a professional environment so students will culminate a basic, well-rounded education in Culinary Arts. All students complete the program with a portfolio and enough experience to secure an entry-level position within the Food Service Industry or pursue careers through higher education. Students also have the opportunity to train and test for the ServeSafe Certification.

## **Restaurant-Based Courses:**

### **Year One:**

5111/5112 Culinary Arts Beginners - College

5311/5312 Culinary Arts Beginners - Honors

### **Year Two:**

5113/5114 Culinary Arts Intermediate - College

5313/5314 Culinary Arts Intermediate - Honors

### **Year Three:**

5121/5122 Culinary Arts Advanced - College

5315/5316 Culinary Arts Advanced - Honors

## **Related Food Electives:** (1 semester courses)

5085 The Science of Cooking - College

5087 Nutrition and Dietary Choices - College

5086 Regional Cuisine - College

5088 International Foods - College

**\*All Pathway students must earn a minimum of 10 credits in Restaurant-Based Culinary Arts Pathway courses to receive the designation of Culinary Arts Concentration status on the student’s final transcript.**

# ENGINEERING PATHWAY (STEM)

The Lowell High School Engineering Pathway provides students the opportunity to investigate engineering-related courses for career exploration and future interest in engineering. Students are provided a combination of academic and hands-on activities to build their subject knowledge and develop the skills of teamwork, verbal and written communication and project management.

**Articulation:** Students may receive college credits upon enrolling at colleges that acknowledge articulation with the LHS course. Eligibility to receive college credit varies by the specific agreement with each college.

## ENGINEERING PATHWAY COURSE OFFERINGS:

### Electives for grades 10, 11 and 12:

3953/3954	Robotics - Honors
3945/3946	Architectural Design - Honors
3911/3912	PLTW- Introduction to Engineering Design - Honors
3921/3922	PLTW- Principles of Engineering - Honors

### Grade 12 Electives:

3971	Introduction to Engineering (Dual-Enrollment) - Advanced
3978	Engineering Internship - Honors - Strongly Recommended

*\*Students must first complete 10 credits in the Engineering Pathway courses before enrolling in the Engineering Externship*

**\*All Pathway students must earn a minimum of 10 credits in Engineering Pathway courses to receive the designation of Engineering Concentration status on the student's final transcript.**

# ENVIRONMENTAL SUSTAINABILITY PATHWAY (STEM)

The Environmental Sustainability Pathway at Lowell High School provides an interdisciplinary approach to the study of human interactions with the environment. The goal of the Environmental Sustainability Pathway is to equip students with the knowledge, intellectual tools and learning experiences that are necessary to understand the causes and consequences of our environmental challenges and to function as highly responsible and engaged citizens. The Environmental Sustainability Pathway seeks to develop in students the creative problem solving skills necessary to design and develop a more sustainable relationship between humans and the rest of the natural world, by guiding students through an exploration of environmental resources, problems, and solutions. This pathway also offers students a unique opportunity to gain essential classroom knowledge along with practical industry experience within the growing field of Clean Energy.

## ENVIRONMENTAL SUSTAINABILITY PATHWAY COURSES:

### Survey Courses:

3547	ESS: Earth & Human Activity- Honors
3535	ESS: Geology- Honors
3537	ESS: Oceanography- Honors
3536	ESS: Meteorology-Honors
3735	Environmental Studies (Dual Enrollment- MCC) - Advanced

### 11<sup>th</sup> & 12<sup>th</sup> Grade Concentrated Courses:

3552	Clean Energy Career Explorations A- Honors
3552	Clean Energy Career Explorations B- Honors

\*After completion of Clean Energy Career Explorations A & B, students will be eligible to participate in a spring/summer internship in the field of Clean Energy.

**\*All Pathway students must earn a minimum of 10 credits in Environmental Sustainability Pathway courses to receive the designation of Environmental Sustainability Concentration status on the student's final transcript.**

# FINE ARTS PATHWAY

The mission of the Fine Arts Pathway is to provide all students with a wide variety of high quality artistic experiences in Dance, Music, Theater and Visual Arts and to encourage creativity, the development of a unique artistic voice, and the enthusiastic pursuit of excellence in the Arts.

## Performing Arts Courses

### **Instrumental:**

- 7141/7142 Band 1
- 7143/7144 Band 2
- 7145/7146 Band 3
- 7147/7148 Band 4
  
- 7151/7152 Jazz Band 1
- 7153/7154 Jazz Band 2
- 7155/7156 Jazz Band 3
- 7157/7158 Jazz Band 4
  
- 7011/7012 String Ensemble 1
- 7013/7014 String Ensemble 2
- 7015/7016 String Ensemble 3
- 7017/7018 String Ensemble 4
  
- 7121/7122 Beginner Piano Keyboard & Theory
- 7123/7124 Advanced Piano Keyboard & Theory
  
- 7131/7132 Beginner Guitar/Theory
- 7133/7134 Advanced Guitar/Theory
  
- 7125/7126 World of Drums

## Visual Arts Courses:

- 7513/7514 Intro to Studio Art
- 7523/7524 Intermediate Studio Art
- 7543/7544 Studio Art Portfolio
- 7451/7452 Art History
  
- 7591/7592 Drawing
- 7631/7632 Sculpture
  
- 7711/7712 Digital Photography
- 7773 Animation
  
- Fine Arts Independent Study

### **Choral:**

- 7341/7342 Concert Chorus 1
- 7343/7344 Concert Chorus 2
- 7345/7346 Concert Chorus 3
- 7347/7348 Concert Chorus 4
  
- 7301/7302 Show Choir 1
- 7303/7304 Show Choir 2
- 7305/7306 Show Choir 3
- 7307-7308 Show Choir 4

### **Dance:**

- 7905/7906 Dance 1/Dance 2
- 7907/7908 Dance 3/Dance 4\*
- 7953/7954 Advanced Dance Studies\*
- 7983/7984 Senior Dance Project\*

\*Articulated Course with MCC

### **Theater:**

- 7411 Drama 1: Fundamentals of Acting
- 7412 Drama 2: The Technical Theater

- 7747/7748 Intro to Graphic Design
- 7758/7759 Advanced Graphic Design
  
- 7825/7826 Introduction to Digital Media Production
- 7827/7828 Intermediate Digital Media Production
- 7829/7830 Advanced Digital Media Production
- 7833/7834 TV Broadcast: The Live Broadcast
- 7871 Film, Society and Video (DE)
  
- 7715/7716 Digital Photography
- 7363/7364 Digital Audio Production

**\*All Pathway students must earn a minimum of 10 credits in Fine Arts Pathway courses to receive the designation of Fine Arts Concentration status on the student's final transcript.**

# HEALTH & BIOSCIENCE PATHWAY (STEM)

The Health and Bioscience Pathway is designed for students with an interest in the fields of allied health and/or the emerging field of biotechnology. The Health and Bioscience Pathway offers students a unique opportunity to gain essential classroom knowledge and practical experience within the local medical or biotechnological community. Courses taken in this Pathway will provide students the foundation of knowledge necessary to enter into college majors in the areas of nursing, medicine, biotechnology and other diversified health fields. The course of study culminates senior year with an externship in the Lowell community for eligible Pathway students.

## HEALTH & BIOSCIENCE PATHWAY COURSES:

### Survey Courses:

3783	Microbiology
9023/9024	Medical Terminology & Body Systems
9042	Careers in Health & Bioscience
9062	Current Health Issues
3541	Introduction to Anatomy
3543/3544	Anatomy & Physiology
9052	Medical Law & Ethics
3548	Genetics
9082	Nutrition, Disease, and You

### 12<sup>th</sup> Grade Concentrated Courses:

9092	Senior Internship (Strongly Recommended)
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\*Students must first complete 10 credits in the Health & Bioscience Pathway courses before enrolling in the Health & Bioscience Internship

**\*All Pathway students must earn a minimum of 10 credits in Health & Bioscience Pathway courses to receive the designation of Health & Bioscience Concentration status on the student's final transcript.**

# LHS INTERNSHIP PROGRAM

At Lowell High School, the Internship experience assists students in furthering their education and knowledge within the “real world”. The main focus is to ensure that all students gain experience in the work force and become more informed about possible career choices. Another focus is to help students be more independent and prepare them for the responsibilities of either the college experience or the world of work. The goal of the program is to provide students with an experience that will help shape their decisions regarding possible college majors and career direction.

There are many benefits of the Internship experience:

Student Benefits:

- Connects classroom to real world experience
- Helps define areas of interest, educational goals and future plans
- Acquires knowledge and skills about careers and labor market
- Opportunity to understand work place etiquette and practice communication skills
- Builds confidence, responsibility and self-advocacy skills
- Creates network of professionals for future internship and employment opportunities

Employer Benefits:

- Find future employees
- Help support the well -being of the local community
- Test drive talent
- Assistance with projects and office support
- Share knowledge and experience
- Train future leaders
- Inspire youth from the community

Preparation before site placement

- All students will go through a series of workshops that will prepare them for placement prior to internship experience as listed below.
- Resume preparation
- Interview skills
- Dress for success workshop
- Workplace etiquette
- Business communication
- Coursework exposure to related industry

# LHS INTERNSHIP PROGRAM

## COMMUNITY PARTNERS

Students have the opportunities, thank to our community partners, to experience internships at a number of different organizations across the city of Lowell, including:

Anne Sullivan Center	McAvinnue Elementary School
Career Center of Lowell	Mental Health Association of Greater Lowell
Chelmsford Animal Hospital	Mill City Environmental
Coalition for a Better Acre	MITRE
Colleen Creegan TV Studio	Murkland Elementary School
Community Teamworks, Inc.	M2D2
Congressional Office of Niki Tsongas	New England Neurological Care
Courtyard Restaurant	North Shore Merrimack Valley Legal Services
Cultural Organization of Lowell	Rapid Microbiosystems
D'Youville Nursing Home	SCORE Mediation Program
Enterprise Bank	Trinity Ambulance
Greater Lowell Engineering Associates	Therafit Physical Therapy
International Institute	Town and Country Nursing Home
Jeanne D'Arc	Tsongas Center of Industrial History
Lowell City Hall	University of Massachusetts at Lowell
Lowell Community Health Center	Visiting Nurse Association of Greater Lowell
Lowell Dentistry for Children	VNA Nursing Association
Lowell General Hospital	Watermark Environmental
Lowell National Parks	Wingate Nursing Home
Lowell Police Department	Xenith Corporation
MACOM	WCAP

If you are interested in getting more information about the Internship program or you know another community partner who would be willing to host an intern, please contact: Angela Lawler-Brennan, Career Relations Counselor, at (978) 970-3377.



# GUIDANCE

## GRADUATION REQUIREMENTS

To obtain a diploma of graduation from Lowell High School, each student must satisfy the following requirements:

- Must have at least four (4) years' attendance at the high school level.
- Must pass ten (10) credits in U. S. History.
- Must pass twenty (20) credits in English.
- Must pass ten (10) credits in Mathematics.
  - Students need to pass one full year of Algebra and one full year of Geometry.
- Must pass ten (10) credits in Natural or Physical Science.
- Must pass ten (10) credits Physical Education.
  - AFJROTC, Dance, Show Choir or Band may be substituted each year for this requirement.
  - This requirement may be waived only by the Head of School for documented medical excuse, for critical course conflicts, or for other extenuating circumstances.
- Must pass ten (5) credits in Health/Wellness.
  - Must select Health Education A in the Ninth (9th) grade and Health Education B in the tenth (10th) grade.
  - Health Education A or B can be postponed with permission of the Guidance Counselor.
  - Both health courses (2.5 credits each) must be passed for a total of five (5) credits. AFJROTC can substitute for Health.
- Must fulfill the standard requirement of earning at least 90 credits, of which at least 20 credits must be earned in the senior year.
- Must pass the MCAS exams in ELA, Mathematics and Science.

## PROMOTION POLICY

Students must be promoted from the eighth grade to enter Lowell High School. In order to move to the next grade level, students must earn the following credits:

To grade 10 - 20 credits.

To grade 11 - 40 credits.

To grade 12 - 60 credits.

**MASSACHUSETTS  
STATE COLLEGES AND UNIVERSITIES  
MINIMUM COLLEGE ADMISSIONS REQUIREMENTS**

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

Subject	Requirements for Entering College Freshmen		
	Fall 2015	Fall 2016	Fall 2017 and beyond
English	4 courses		
Mathematics	3 courses (Algebra I & II and Geometry or Trigonometry or comparable coursework)	4 courses (Algebra I & II and Geometry or Trigonometry, or comparable coursework) including mathematics during the final year of high school	
Sciences	3 courses (from Natural Science and/or Physical Science and/or Technology/ Engineering, including 2 courses with laboratory work).		3 courses (from Natural Science and/or Physical Science and/or Technology/ Engineering), including 3 courses with laboratory work
Social Sciences	2 courses (including 1 course in U.S. History)		
Foreign Languages	2 courses (in a single language) <i>Note: American Sign Language (ASL) is a foreign language.</i>		
Electives	2 courses (from the above subjects or from the Arts & Humanities or Computer Sciences)		

# MASSCORE

## What is MassCore?

MassCore is a state recommended, rigorous program of study that aligns high school coursework with college and workforce expectations. The recommended program of studies includes:

How Many?	Which Subjects?
4 years	English
4 years	Math
3 years	Lab-based Science
3 years	History/Social Science
2 years	The same foreign language
1 year	The Arts
5 additional “core” courses	Business education, career and technical education, health, technology or any other above subject area
additional learning opportunities including	<ul style="list-style-type: none"> <li>• AP classes</li> <li>• Dual Enrollment</li> <li>• Senior Project/Capstone coursework</li> <li>• Online courses for high school or college credit</li> <li>• Service or Work-Based Learning</li> </ul>

MassCore should be considered to be a critical component of a student’s overall high school experience and may also include work-based or community service learning, athletics, extra-curricular activities and additional learning opportunities that help prepare students for their future.

## Why MassCore?

Challenging Courses = Big Financial Rewards      Preparation for College Success      What Employers Want      More Career Options

Graduates of four year colleges earn an average of \$1.4 million more over a lifetime than high school drop outs.

It’s not just about getting in – it is about finishing.

Employers expect you to arrive with essential workplace skills, including speaking and writing clearly, analyzing information, conducting research, and solving complex problems.

Good jobs require education beyond high school. MassCore gives you more options and more opportunities to find a career with a real future.





# LOWELL HIGH SCHOOL **CORE VALUES**



**RESPONSIBILITY**



**INTEGRITY**



**DETERMINATION**



**ENGAGEMENT**



**RESPECT**