



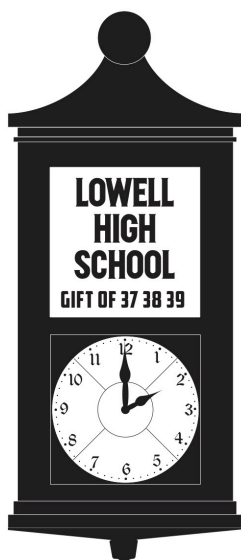
**Lowell High School**  
**2026- 2027**  
**Program of Studies**

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**LOWELL HIGH SCHOOL**  
**50 Father Morissette Boulevard**  
**Lowell, Massachusetts 01852**



## **INTRODUCTION**

Lowell High School is a teaching and learning community that strives to inspire, educate, and prepare our students for the 21st century through holistic and innovative curriculum, a deep sense of responsibility, diversity of thought, and the development of critical skills for life after high school. We are dedicated to providing high-quality education and multiple post-high school pathways for the purpose of achieving equitable outcomes.

At Lowell, we view student success as a joint responsibility between Lowell faculty and staff, the student's primary support network, and community members. Operating with this interconnectedness and shared focus is essential to building and sustaining a high-quality high school culture at Lowell High School that disrupts inequitable systems and enables all students to thrive.

We provide students with the opportunities and resources to freely embrace plans for life after graduation. We understand the power of future-focused, side-by-side guidance for high school students; and to that end, we help each Lowell student navigate their own educational journey and start to think ahead.

# WELCOME MESSAGE FROM HEAD OF SCHOOL

Welcome to the Lowell High School Program of Studies!

We are excited to introduce you to the wide variety of courses and opportunities available at Lowell High. Our offerings are designed to be both engaging and challenging, ensuring that every student has the chance to grow, explore, and achieve their academic and personal goals. Whether you are looking to pursue your interests or challenge yourself with advanced coursework, Lowell High has something for you.


Our course offerings and programs are designed with the Lowell Public Schools Portrait of a Graduate elements in mind:

- MIND – Excel in a Complex and Ever-Changing World
- HEART – Demonstrate Self-Knowledge and Value Diversity
- SPIRIT – Persist in School and Life
- SKILL – Develop and Apply Real-World Skills
- NETWORK – Communicate, Collaborate, and Follow Through
- LEADERSHIP – Engage, Empower, and Achieve Positive Change

These core values guide our curriculum and extracurricular offerings, ensuring that you not only succeed academically but also grow as a well-rounded individual who is ready to tackle the challenges of the future.

This Program of Studies serves as a valuable resource to help you understand the full scope of what Lowell High has to offer. We encourage you to use it to plan your courses, explore new subjects, and make informed decisions about your educational path. Your teachers and school counselors are always available to provide guidance, offer recommendations, and help you select courses that align with your interests, strengths, and future aspirations.

We are here to support you every step of the way, ensuring that your high school experience is both fulfilling and rewarding. Take advantage of the opportunities ahead and let this guide serve as a tool to help you succeed!



Mike Fiato  
Head of School

# EQUAL EDUCATIONAL OPPORTUNITY STATEMENT

In recognition of the School Committee's policy against discrimination, the School Committee and all staff of Lowell Public Schools will make every effort to comply with the letter and spirit of the Massachusetts Equal Educational Opportunities Law that prohibits discrimination in public school admissions and programs and all implementing provisions issued by the Massachusetts Department of Elementary and Secondary Education will be followed. It is the policy of the Lowell Public Schools not to exclude or discriminate against a student in the admission to school in Lowell, or in obtaining the advantages, privileges and course study within Lowell Public Schools on the basis of race, color, religion, ancestry, national origin, sex, socioeconomic status, homelessness, gender identity or expression, pregnancy or pregnancy related condition, parenting status, sexual orientation, disability or by association with a person who has or is perceived to have one or other of these characteristics in our educational programs, activities, as envisioned by Title IX of the 1972 Education Amendments and Chapter 622 of the Acts of 1971, in addition to Massachusetts General Laws Chapter 76 section 5, and 603 CMR 26.00, and 603 CMR 28.00. This also means that every student will be given equal access/opportunity in school admission, admissions to courses, course content, guidance, scholarship, prizes, awards, and extracurricular and athletic activities.

## LOWELL HIGH SCHOOL INSTRUCTIONAL VISION

Excellent instruction should meet the needs of every student in accordance with grade-level standards and develop the additional skills and competencies needed for graduates to excel after high school in their preferred postsecondary pathway. Students should be actively engaged with the content (**Mind**) and each other (**Heart**), with a focus on student-led conversations (**Network, Leadership**), productive struggle (**Spirit**), and inquiry-based learning (**Skill**). Students will have opportunities to engage in and demonstrate their learning in different ways. Gaps in learning will be identified and addressed through frequent formative assessment and tiered supports that allow students to access the grade-level material. At LHS, our mission is to create a learning environment where all students, regardless of their race, ethnicity, or disability, or any other part of their identity, achieve at high levels. This Instructional Vision is aligned with Lowell Public Schools Portrait of a Graduate.

# STUDENT SUPPORT SERVICES

To obtain a diploma of graduation from Lowell High School, each student in the class of 2026 and beyond must satisfy the following requirements:

- Fulfill the standard requirement of earning at least 90 credits.
- Pass the MCAS exams in ELA, Mathematics, and Science or meet Local Competency Determination\*\*\*

<b>Content Area</b>	<b>Number of Credits Each semester course is 2.5 credits</b>
<b>English **</b>	<b>20 credits</b>
<b>Social Studies**</b> <ul style="list-style-type: none"> <li>● World History (2 semesters) 5 credits</li> <li>● U.S. History (4 semesters, one of which must include American Civics) 10 credits</li> </ul>	<b>15 credits</b>
<b>Mathematics</b> (Algebra I A/B, Geometry A/B)	<b>15 credits</b>
<b>Science</b>	<b>15 credits</b>
<b>Wellness</b> <ul style="list-style-type: none"> <li>● Physical Education 10 credits</li> <li>● Health (A and B) 5 credits</li> <li>● PE/Health Equivalent               <ul style="list-style-type: none"> <li>○ AFROTC</li> <li>○ Band</li> <li>○ Show Choir</li> <li>○ Dance</li> </ul> </li> </ul>	<b>15 credits</b>

\*Physical Education and Health Equivalent Courses listed below:  
 ROTC, Band , Show Choir & Dance

\*\* No more than two core US History courses may be taken during a semester without the approval of the Social Studies Department Chair.

\*\* No more than two core English courses may be taken during a semester without the approval of the English Department Chair.

# MASSCORE\*

## What is MassCore?

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

## Why MassCore?

Challenging Courses equals

- Preparation for College Success
  - It's not just about getting in – it is about finishing.
- What Employers Want
  - Employers expect you to arrive with essential workplace skills, including speaking and writing clearly, analyzing information, conducting research, and solving complex problems.
- More Career Options
  - Good jobs require education beyond high school. MassCore gives you more options and more opportunities to find a career with a real future.
- Big Financial Rewards
  - Graduates of four-year colleges earn an average of \$1.4 million more over a lifetime than high school dropouts.

\* Massachusetts DESE Office of College and Career Technical Education Parent Resource guide

## The recommended MassCore program of studies includes:

Subject	Credit Requirements
English	4 Years
Mathematics	4 Years including Algebra 2 (Algebra 1, Algebra 2 and Geometry or Trigonometry, or comparable coursework.)  Mathematics is recommended during the final year of high school
Science	3 Years (from Natural Science and/or Physical Science and/or Technology/Engineering), including 3 courses with laboratory work
Social Studies	3 years including U.S. History and World History
Foreign Language	2 years of the same language
Physical Education	1 class each year as required by law
Arts	1 Year
Electives	10 classes years from the above subjects or from the Arts, Business or Computer Sciences or additional classes from above

*It is recommended that students interested in attending a 4 year college follow MassCore.  
School Counselors will assist students in tracking progress towards MassCore.*

## UNDERGRADUATE ADMISSIONS STANDARDS FOR THE COMMUNITY COLLEGES OF MASSACHUSETTS

The fifteen Community Colleges offer open access to high quality, affordable and no-cost academic programs, including associate degree and certificate programs. They are committed to excellence in teaching and learning and provide academic preparation for transfer to four-year institutions, career preparation for entry into high demand occupational fields, developmental coursework, and lifelong learning opportunities.

To enroll in a Massachusetts Community College, students must have a high school diploma or the equivalent. There are prerequisite requirements to enter select programs, especially in the healthcare field. Check each college for their individual requirements.

## UNDERGRADUATE ADMISSIONS STANDARDS FOR THE MASSACHUSETTS STATE UNIVERSITY SYSTEM AND THE UNIVERSITY OF MASSACHUSETTS

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 Freshman
English	4 Years
Mathematics	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 3 courses with laboratory work
Social Sciences	2 courses (including 1 course in U.S. History)
Foreign Language	2 years (in a single language) Note: American Sign Language (ASL) is a foreign language.
Electives	2 years (from the above subjects or from the Arts & Humanities or Computer Sciences)

# 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 all students.

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

- A- Advanced
  - AP – Advanced Placement
  - EC – Early College
  - DE - Dual Enrollment
- HH – High Honors
- H – Honors
- C – College
- N – 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/their 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, Dual Enrollment, and Early College) level courses are the most intense academic level. They are the maximum challenge for the most intellectually curious students.

**High Honors** level courses are the highest level in academic rigor 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 academic rigor 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 present challenging standards-based curriculum material and require high-order thinking skills with scaffolded support. Students will be expected to strengthen their independent learning and academic skills.

**Non-weighted** courses are designed for students of all skill levels. In these courses, students of different abilities are grouped together.

## PREREQUISITE GUIDELINES FOR CONTINUING COURSES

The following guidelines can 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

## GUIDELINES FOR SELECTING COURSES

Planning an educational program is an ongoing process and involves the student, family, teachers, and school counselors.

During the second semester, students and parents will be able to refer to the Program of Studies available online on the LHS webpage. Teachers, counselors, and administration will be available for consultation.

The faculty make specific recommendations about student placement in required and sequential courses. In scheduling a student's program, the school will attempt to meet the immediate and future objectives of each student.

The following factors are used to determine individual achievement levels: an evaluation of previous academic performance as indicated by teachers and the recommendation of teachers.

### Actions Steps for Students:

- Review your transcript to make sure you are meeting graduation requirements.
- Consider your future plans and select electives that are related to the field you may wish to pursue or required by the college/university you wish to attend.
- Explore the possibility of enrolling in a pathway
- Choose the electives that you are interested in taking (make sure to select alternates)
- Consult with your individual teachers about course recommendations
- Attend your individual meeting with your school counselor

*Please understand that not all student choices can be accommodated due to scheduling constraints and school placement policies. It is highly recommended that students identify alternatives for elective selections in order of preference.*

### Notes:

Course placement into College, Honors, High Honors, Advanced, or Advanced-AP/EC/DE depends on a student's performance in their class during the previous year and the recommendation of their current teacher. Students may appeal to the Department Chair to take a course for which they have not been recommended or for which they have not met the stated prerequisites.

# English Department

Suzanne Keefe, Department Chair

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.

A Lowell High School student must earn 20 credits in sequential, core English courses to qualify for a diploma. Students must enroll in a minimum of one English course per semester. Students must also take the state's Grade 10 ELA MCAS test. All courses offered in the English Department are aligned with and fulfill the content requirements of the Massachusetts State Curriculum Frameworks.

	9th Grade	10th Grade	11th Grade	12th Grade
<b>Core Courses</b>	English 1 C English 1 H English 1 HH Topics in English 1A Topics in English 1B	English 2 C English 2 H English 2 HH Topics in English 1A Topics in English 1B Topics in English 2A Topics in English 2B	English 3 C English 3 H English Composition, EC Topics in English 2A Topics in English 2B Reading and Writing in the 21st Century	<i>Students must enroll in one ELA course per semester and may choose from:</i> English 4C English Composition, EC Creative Writing (C/H) Expository Writing (C/H) Reading and Writing in the 21st Century Graphic Novel (C) Diverse Voices (C) British Traditions (H) Gender in Literature (H) Literature of the Holocaust (H) Other Worlds (H) Race, Ethnicity, and the Written Word (H) Short Fiction and Poetry (H) Social Justice and Modern Media (H) Sports in Literature (H) Write, Camera, Action (H) African American Literature (MCC) Graphic Novel (MCC) Intro to Film Studies (MCC) Literature of the Holocaust (MCC) Modern American Literature (MCC) Public Speaking (MCC)
	9th Grade	10th Grade	11th Grade	12th Grade
<b>Elective Courses</b>		Grade 11 & 12 electives with permission from Dept. Chair	Grade 11 and 12 students may take any topics course for elective credit. Topics courses are listed in the 12th grade column above.  To enroll in an Early College (EC) elective, students must have taken and earned credit in English Composition 1 and 2.	
<b>Support Courses</b>	Balanced Literacy 1	Balanced Literacy 2		

## Core Courses

### **0131/0132/0133 English I**

**Level: College/Honors/High Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Placement is based on a combination of middle school grades, a student's iReady and MCAS scores, and teacher recommendations. Enrollment in high honors requires the completion of a summer assignment.**

This course is designed to help students successfully transition to high school by building essential, foundational communication skills. The course provides strategies and routines to help students become active readers, stronger writers, and confident speakers and listeners. Students read a range of text-types, with diverse points of view, and learn to interact with these texts in order to make meaningful personal connections. Particular emphasis is placed on the writing process as students practice narrative, informational and argument writing.

**Grade Level: 9**

**Fulfills: ELA Graduation Requirement**

### **0231/0232/0233 English II**

**Level: College/Honors/High Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Placement is based on English I grades and teacher recommendation. Enrollment in high honors requires the completion of a summer assignment.**

This course explores the universal nature of storytelling and its unique ability to capture our imaginations, propel us into action, and compel us to observe and engage with the world around us. Students will read a broad range of texts and digital resources that tell stories from diverse perspectives. Through critical reading and discussion of these texts, students will closely examine the varied methods authors use to connect with their audience and bring their stories to life. Students will analyze texts for the use of perspective, diction, rhetoric, and purpose. Writing practice will focus on students utilizing these same methods to craft thoughtful and impactful narrative, expository, and persuasive responses. This course places a strong emphasis on MCAS preparation, as students take this exam in the spring of their sophomore year.

**Grade Level: 10**

**Fulfills: ELA Graduation Requirement**

### **0331/0332 English III**

**Level: College/Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Placement is based on English II grades and teacher recommendation.**

This course focuses on reading, writing and thinking skills in the context of American Literature. Students study selected works by notable American authors as a means of exploring the American experience through diverse voices and over time. Continued emphasis is placed on the writing process, with special attention paid to the development of logical argument and the use of persuasive techniques. Emphasis is placed on increasing levels of competence in mechanics, content, organization and style in various types of writing situations. 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.

**Grade Level: 11**

**Fulfills: ELA Graduation Requirement**

**0606 English Composition I and II - MCC****Level: Post-Secondary****Credits: 2.5 LHS/3 MCC per semester**

**Prerequisites:** *Successful completion of English 2A/2B and 3A/3B, with a minimum grade of 80 in high honors, 85 in honors and 90 in college level course AND ELA teacher recommendation. A grade of 70 or better in English Composition I is required to continue in English Composition II. This course requires the completion of a summer assignment. Failure to complete the summer assignment will result in removal from the course.*

English Composition focuses on developing students' academic writing, close reading, and critical thinking skills. Using a writing process that includes pre-writing, drafting, instructor and peer feedback, and revision, students will produce written essays with arguable thesis statements and appropriate use of standard English. Students will produce a total of 18-24 pages of formal polished writing in three or more source-based essays.

During the second semester, students continue to build on skills learned in English Composition I. Students will sharpen their academic writing, close reading, and critical thinking skills, as well as develop research skills. Students will produce thesis-driven, evidence-based essays that employ appropriate rhetorical strategies. In English Composition 2, students will be introduced to at least two documentation styles and will produce a total of 18-24 pages of polished formal writing in three or more source-based essays. Students who successfully complete this course will receive both LHS English graduation credit and MCC credit.

**Grade Level: 11, 12****Fulfills: ELA Graduation Requirement****0134/0135 Topics in ELA 1 A and B****Level: College****Credits: 2.5 per semester/5 per year****Prerequisites: Non-Completion of ELA 1**

The course provides strategies and routines to help students become active readers, stronger writers, and confident speakers and listeners. Students read a range of text-types, with diverse points of view, and learn to interact with these texts in order to make meaningful personal connections. Particular emphasis is placed on the writing process as students practice narrative, informational and argument writing.

**Grade Level: 9, 10****Fulfills: ELA Graduation Requirement****0234/0235 Topics in ELA 2 A and B****Level: College****Credits: 2.5 per semester/5 per year****Prerequisites: Non-Completion of ELA 2**

This course explores the universal nature of storytelling and its unique ability to capture our imaginations, propel us into action, and compel us to observe and engage with the world around us. Students will read a broad range of texts and digital resources that tell stories from diverse perspectives. Through critical reading and discussion of these texts, students will closely examine the varied methods authors use to connect with their audience and bring their stories to life. Students will analyze texts for the use of perspective, diction, rhetoric, and purpose. Writing practice will focus on students utilizing these same methods to craft thoughtful and impactful narrative, expository, and persuasive responses.

**Grade Level: 10, 11****Fulfills: ELA Graduation Requirement**

## **Support Courses**

**0023/0024 Balanced Literacy 1 and 2****Level: Support****Credits: 2.5 per semester/5 per year****Prerequisites: Placement is based on a combination of middle school grades, a student's iReady and MCAS scores, and teacher recommendations.**

Balanced Literacy is designed to support 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 and English 2.**

**Grade Level: 9, 10****Fulfills: Elective credit and credit recovery**

**0025/0026 Reading and Writing in the 21st Century**    **Grade Level: 11, 12**  
**Level: College**    **Fulfills: ELA Graduation Requirement**  
**Credits: 2.5 per semester/5 per year**  
**Prerequisites: English 1, 2, or 3**

Reading and Writing in the 21st Century supports students to strengthen 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. **This course is designed to support students working to recover graduation credits.**

## **Grade 12 Courses and Department Electives**

**0431 English IV**    **Grade Level: 12**  
**Level: College**    **Fulfills: ELA Graduation Requirement**  
**Credits: 2.5 per semester/5 per year**  
**Prerequisites: English III**

This course explores the art of storytelling with an emphasis on personal narratives, as students work to fine-tune their voices and share their own stories with the world. Students read and analyze a variety of storytelling platforms, paying particular attention to form, style, and purpose. Through guided reflection and regular writing assignments, students explore significant moments, challenges, triumphs and turning points in their lives. The writing, discussion, and inquiry protocols emphasized in this course assist students to confidently analyze the stories they encounter. These practices will also prepare students to share themselves with the larger, post-high school world.

**0441 British Traditions**    **Grade Level: 11, 12**  
**Level: Honors**    **Fulfills: Grade 12 ELA Graduation Requirement**  
**Credits: 2.5 per semester/5 per year.**  
**Prerequisites: Grade of 70 in honors English 3 or 80 in college-prep English 3**

This survey course challenges students through an intensive critical analysis of representative masterpieces of British Literature from the Anglo- Saxon Period forward, students will examine the intellectual, philosophical and social forces that have shaped English society and its literary works. A variety of World Literature selections complement this study. This challenging course will place an emphasis on improving the skills of interpretation and critical analysis of readings. 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. Particular attention is paid to writing mastery, improving the content, form, variety and style of student writing.

**0519 Other Worlds**    **Grade Level: 11, 12**  
**Level: Honors**    **Fulfills: Grade 12 ELA Graduation Requirement**  
**Credits: 2.5 per semester/5 per year**  
**Prerequisites: Grade of 70 in honors English 3 or 80 in college-prep English 3**

Other Worlds explores the dark, strange, and disturbingly familiar worlds of dystopian literature. We will examine the twisted realities of literary works such as *Fahrenheit 451* and *The Handmaid's Tale*, as well as other notable texts from the genre. Students will consider how these imagined worlds represent universal ideas that are rooted in reality. The writing, discussion, and inquiry protocols emphasized in this course reinforce grade-level content standards as outlined by the Massachusetts State ELA Curriculum Frameworks.

**0528 Sports Literature and Writing****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: Grade of 70 in honors English 3 or 80 in college-prep English 3**

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. The writing, discussion, and inquiry protocols emphasized in this course reinforce grade-level content standards as outlined by the Massachusetts State ELA Curriculum Frameworks.

**Grade Level: 11, 12****Fulfills: Grade 12 ELA Graduation Requirement****0552 Race and Ethnicity in Literature****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: Grade of 70 in honors English 3 or 80 in college-prep English 3**

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. The writing, discussion, and inquiry protocols emphasized in this course reinforce grade-level content standards as outlined by the Massachusetts State ELA Curriculum Frameworks.

**Grade Level: 11, 12****Fulfills: Grade 12 ELA Graduation Requirement****0555 Literature of the Holocaust****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: Grade of 70 in honors English 3 or 80 in college-prep English 3**

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, graphic novel, and film. Students will engage in discussions, writing assignments, and creative projects related to the readings. Topics covered include: the history of anti-Semitism, the rise of the Nazi Party in Germany, 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. A great deal of time will also be spent discussing current events as they relate to the Holocaust. The writing, discussion, and inquiry protocols emphasized in this course reinforce grade-level content standards as outlined by the Massachusetts State ELA Curriculum Frameworks.

**Grade Level: 11, 12****Fulfills: Grade 12 ELA Graduation Requirement****0561 Diverse Voices in Literature****Level: College-prep****Credits: 2.5 per semester/5 per year.****Prerequisites: English 3**

Diverse Voices in Literature explores cultural diversity through the reading and discussion of writings by Native American, Latin, Asian, African American, and Middle Eastern authors. The course is designed to bring awareness to various cultural issues and give 'voice' to authors and perspectives often underrepresented in literature classes. Students will be challenged to analyze their preconceived notions of the world around them, and to be critical and reflective on how everyone functions and cohabitates in the world. The course will examine a variety of sources including novels, short stories, poems, journal and newspaper articles, and various digital media. The writing, discussion, and inquiry protocols emphasized in this course reinforce grade-level content standards as outlined by the Massachusetts State ELA Curriculum Frameworks.

**Grade Level: 11, 12****Fulfills: Grade 12 ELA Graduation Requirement**

**0577 The Graphic Novel**  
**Level: College-prep**  
**Credits: 2.5 per semester/5 per year**  
**Prerequisites: English 3**

**Grade Level: 11, 12**  
**Fulfills: Grade 12 ELA Graduation Requirement**

Students will develop their capacity to read, analyze, and talk about graphic narratives. Students will acquire and apply the basic vocabulary of graphic storytelling as they develop the skills needed for visual and textual analysis. The course will introduce a range of text, such as Maus I, Persepolis, and American Born Chinese. These works will be read with special attention paid to the cultural perspectives they offer. Students will learn how to develop written analysis of this genre, and the characteristics specific to it, through application of the writing process. The writing, discussion, and inquiry protocols emphasized in this course reinforce grade-level content standards as outlined by the Massachusetts State ELA Curriculum Frameworks.

**0526 Short Fiction and Poetry**  
**Level: Honors**  
**Credits: 2.5 per semester**

**Grade Level: 11, 12**  
**Fulfills: Grade 12 ELA Graduation Requirement**

**Prerequisites: Grade of 70 in honors English 3 or 80 in college-prep English 3**

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. The writing, discussion, and inquiry protocols emphasized in this course reinforce grade-level content standards as outlined by the Massachusetts State ELA Curriculum Frameworks.

**0531/0533 Creative Writing**  
**Level: College, Honors**  
**Credits: 2.5 per semester**

**Grade Level: 11, 12**  
**Fulfills: Grade 12 ELA Graduation Requirement**

**Prerequisites for Honors Level: Grade of 70 in honors English 3 or 80 in college-prep English 3 to enroll in Honors**

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. The writing, discussion, and inquiry protocols emphasized in this course reinforce grade-level content standards as outlined by the Massachusetts State ELA Curriculum Frameworks. It is recommended that this course be paired with **Expository Writing**.

**0537/0538 Expository Writing**  
**Level: College, Honors**  
**Credits: 2.5 per semester**

**Grade Level: 11, 12**  
**Fulfills: Grade 12 ELA Graduation Requirement**

**Prerequisites for Honors Level: Grade of 70 in honors English 3 or 80 in college-prep English 3 to enroll in Honors**

Expository Writing teaches practical and effective strategies for preparing for the demands of post-high school 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. The writing, discussion, and inquiry protocols emphasized in this course reinforce grade-level content standards as outlined by the Massachusetts State ELA Curriculum Frameworks. It is recommended that this course be paired with **Creative Writing**.

**0567 Gender in Literature**  
**Level: Honors**  
**Credits: 2.5 per semester**

**Grade Level: 10, 11, 12**  
**Fulfills: Grade 12 ELA Graduation Requirement,**

**Prerequisites: Grade of 70 in honors English 3 or 80 in college-prep English 3**

Gender and Identity looks at gender from multiple aspects. Starting with ancient myths and views around gender and moving to modern texts which explore the social construct of gender. 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. This course fulfills the program requirements of the Education Pathway. This course fulfills program requirements of the Education Pathway.

**0580 Social Justice and Modern Media**  
**Level: Honors**  
**Credits: 2.5 per semester**

**Grade Level: 10, 11, 12**  
**Fulfills: Grade 12 ELA Graduation Requirement**

**Prerequisites: Grade of 70 in honors English 3 or 80 in college-prep English 3**

Social Justice and Modern Media is a project-based course where collaborative groups will work together using traditional mass media and modern social media to examine issues of current social importance. Student groups will work to identify, research, describe, and highlight possible solutions for the social problems they identify. A project management process used by professionals in communications media will be taught to students, who will be responsible for creating storyboards, voice-over narratives, short stories, short social media, and longer documentary videos. Basic standards of videography and broadcast writing, along with ethical journalism, will be applied. Speaking and interpersonal abilities are integral to this class for interviews and appearances on camera. This course will address the hands-on use of related technologies, including work in a professional multi-media center. Students will develop a topic of interest to them and present a positive solution and potential outcome to a local, state, national or global issue.

**0585 Write, Camera, Action**  
**Level: Honors**  
**Credits: 2.5 per semester**

**Grade Level: 10, 11, 12**  
**Fulfills: Grade 12 ELA Graduation Requirement**

**Prerequisites: Grade of 70 in honors English 3 or 80 in college-prep English 3**

This course explores the power of storytelling and the craft of filmmaking. Students learn to write scripts and dialogue, and produce, direct, and act in their own scenes and short films. Students will analyze iconic scenes in film and television, create scripts with a focus on character development, and learn about voice, presence and on-camera techniques to create believable characters on film. Students will develop directorial and post-production skills for a final film project. The writing, discussion, and inquiry protocols emphasized in this course reinforce grade-level content standards as outlined by the Massachusetts State ELA Curriculum Frameworks.

## **AP Courses**

**0591 AP Literature and Composition**  
**Level: Honors**  
**Credits: 2.5 per semester**  
**Prerequisites:**

**Grade Level: 12**  
**Fulfills: Grade 12 ELA Graduation Requirement**

Literature and Composition AP (English 4) is 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 readings 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. Participation in the Advanced Placement Test, given in May of the senior year, is expected of every student in 0591. ***PREREQUISITES: Successful completion of English 3A/3B (with a minimum grade of 80 in high honors, 85 in honors, and 90 in college level course) and the recommendation of the junior English teacher. This course requires the completion of a summer assignment. Failure to complete the summer assignment will result in removal from the course.***

## Early College Courses

### **English Composition I and II - MCC**

**Level: Post-Secondary**

**Credits: 2.5 LHS/3 MCC per semester**

**Prerequisites: Successful completion of English 2A/2B and 3A/3B, with a minimum grade of 80 in high honors, 85 in honors and 90 in college level course AND ELA teacher recommendation. A grade of 70 or better in English Composition I is required to continue in English Composition II. This course requires the completion of a summer assignment. Failure to complete the summer assignment will result in removal from the course.**

**Grade Level: 11, 12**

**Fulfills: ELA Graduation Requirement**

English Composition focuses on developing students' academic writing, close reading, and critical thinking skills. Using a writing process that includes pre-writing, drafting, instructor and peer feedback, and revision, students will produce written essays with arguable thesis statements and appropriate use of standard English. Students will produce a total of 18-24 pages of formal polished writing in three or more source-based essays.

During the second semester, students continue to build on skills learned in English Composition I. Students will sharpen their academic writing, close reading, and critical thinking skills, as well as develop research skills. Students will produce thesis-driven, evidence-based essays that employ appropriate rhetorical strategies. In English Composition 2, students will be introduced to at least two documentation styles and will produce a total of 18-24 pages of polished formal writing in three or more source-based essays. Students who successfully complete this course will receive both LHS English graduation credit and MCC credit.

### **Public Speaking - MCC**

**Level: Post-Secondary**

**Credits: 2.5 LHS/3 MCC**

**Prerequisites: Successful completion of, or concurrent enrollment in, English Composition - MCC**

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..

**Grade Level: 11, 12**

**Fulfills: Grade 12 ELA Graduation Requirement**

**This is a one semester course.**

### **African American Literature - MCC**

**Level: Post-Secondary**

**Credits: 2.5 LHS/3 MCC**

**Prerequisites: Successful completion of, or concurrent enrollment in, English Composition - MCC**

Students will explore the work of African American writers past and present. The course is designed to give students an understanding and appreciation of African American Literature, including some or all of the following forms from earlier periods to contemporary Black literature: early poetry, spirituals, essays, oratory, and fiction. Students will explore the multi-faceted traditions of African American Literature as a means of exploring the culture of those people of African descent to better understand their socio-political origins, traditions, customs and contributions in the shaping and development of popular culture. ***This course is equivalent to EC-MCC: ENG 165 African American Literature.***

**Grade Level: 11, 12**

**Fulfills: Grade 12 ELA Graduation Requirement**

**This is a one semester course.**

### **Introduction to Film Studies & Analysis - MCC**

**Level: Post-Secondary**

**Credits: 2.5 LHS/3 MCC**

**Prerequisites: Successful completion of, or concurrent enrollment in, English Composition - MCC**

This course introduces students to the language of film analysis (mise-en-scene, cinematography, editing, and sound), as well as the elements of film form and narrative structure. Additionally, students are exposed to a broad overview of the historical developments and social implications of the medium. ***This course is equivalent to EC-MCC: COM 106 Film & Society.***

**Grade Level: 11, 12**

**Fulfills: Grade 12 ELA Graduation Requirement**

**This is a one semester course.**

**The Graphic Novel - MCC**

**Level: Post-Secondary**

**Credits: 2.5 LHS/3 MCC**

**Prerequisites: Successful completion of, or concurrent enrollment in, English Composition - MCC.**

This course offers a study of graphic narratives, including the conventions unique to this genre. Students have the opportunity to examine a range of stories told through this unique, vital medium. The focus is on graphic novels, but will also explore other graphic narratives such as comics and digital comics.

**Grade Level: 11, 12**

**Fulfills: Grade 12 ELA Graduation Requirement**

**This is a one semester course.**

**Literature of the Holocaust - MCC**

**Level: Post-Secondary**

**Credits: 2.5 LHS/3 MCC**

**Prerequisites: Successful completion of, or concurrent enrollment in, English Composition - MCC**

In this course, students will explore 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, and film. Topics covered include: the history of anti-Semitism, 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.

**Grade Level: 11, 12**

**Fulfills: Grade 12 ELA Graduation Requirement**

**This is a one semester course.**

**Modern American Literature - MCC**

**Level: Post-Secondary**

**Credits: 2.5 LHS/3 MCC**

**Prerequisites: Successful completion of, or concurrent enrollment in, English Composition - MCC**

This course introduces students to representative American authors from the mid-19th century to the present day. Selections vary and may include Whitman, Twain, Dickinson, Hughes, Hansberry, Steinbeck, Kerouac, O'Brien, Angelou, Orange, and others. ***This course is equivalent to EC-MCC: ENG 161 Modern American Literature***

**Grade Level: 11, 12**

**Fulfills: Grade 12 ELA Graduation Requirement**

**This is a one semester course.**

## English Courses Quick Reference

0023	C-Balanced Literacy	Grade 9
0131	C-English 1	Grade 9
0132	H-English 1	Grade 9
0133	HH-English 1	Grade 9
0024	C-Balanced Literacy	Grade 10
0134/0135	C-Topics in English 1 A and B	Grade 9, 10
0231	C-English 2	Grade 10
0232	H-English 2	Grade 10
0233	HH-English 2	Grade 10
0234/0235	C-Topics in English 2 A and B	Grade 9, 10
0331	C-English 3	Grade 11
0332	H-English 3	Grade 11
0431	C-English 4	Grade 12
0441	H-British Traditions	Grade 11,12
0025/0026	C-Reading and Writing in the 21st Century	Grade 11,12
0519	H-Other Worlds	Grade 11,12
0528	H-Sports Literature and Writing	Grade 11,12
0552	H-Race and Ethnicity in Literature	Grade 11,12
0555	H-Literature of The Holocaust	Grade 11,12
0561	C-Diverse Voices in Literature	Grade 11,12
0591	AP-Literature and Composition	Grade 12
0526	H-Short Fiction and Poetry	Grade 11,12
0531	C-Creative Writing	Grade 11,12
0533	H-Creative Writing	Grade 11,12
0537	C-Expository Writing	Grade 11,12
0538	H-Expository Writing	Grade 11,12
0567	H-Gender in Literature	Grade 12
0580	H-Social Justice and Modern Media	Grade 10,11,12
0585	H-Write, Camera, Action	Grade 10,11,12
0601	EC-Public Speaking	Grade 11,12
0602	EC-Literature of the Holocaust	Grade 11,12
0603	EC-African American Literature	Grade 11,12
0604	EC-Modern American Literature	Grade 11,12
0605	EC-Intro to Film Studies and Analysis	Grade 11,12
0606	EC-English Composition	Grade 11,12
0609	EC-The Graphic Novel	Grade 11,12

# SOCIAL STUDIES

Dr. Amy Gerade, Department Chair

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 analytic, evaluative, and communication skills; prepare students for college and career; and nurture active, productive, and responsible civic engagement..

Each student must pass five (5) credits in World History and ten (10) credits in U.S. History to graduate from LHS. Some Social Studies department courses are also linked with the Education Pathway. Most elective courses have prerequisites that are listed in their course description. *Exceptions to any prerequisites require written permission from the Social Studies Department Chair.*

	9th Grade	10th Grade	11th Grade	12th Grade
<i>Core Courses</i>	Survey of World History (CP, H, HH)	United State History 1 (CP, H) Topics in World History (CP) AP US 1 AP European History (Lyceum) US History to 1876 (DE-MCC) US History from 1877 to present (DE-MCC)	United States History 2 (CP, H) AP US 2 Topics in US 1 A and B US History to 1876 (DE-MCC) US History from 1877 to present (DE-MCC)	AP US 2 Topics in US 2 A and B US History to 1876 (DE-MCC) US History from 1877 to present (DE-MCC)
<i>Possible Electives</i>		Teaching in an Inclusive Classroom (DE-UML)	Introduction to Global Studies (H) Education in America (H) Constitutional Law (H) History of Sport (H) Intro to Sociology (H) Child and Adolescent Psychology (H) Lowell: Immigration and Industrialization (CP) Intro to Criminal Justice (CP) AP African American Studies AP US Government and Politics AP European History Teaching in an Inclusive Classroom (UML) Intro to Sociology (MCC) Intro to Psychology (MCC) Intro to Philosophy (MCC)	

## Core Courses

### **4121/4122/4123 Survey of World History**

**Level: College/Honors/High Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: None**

Survey of World History begins with an introduction to the study of the world, and then looks at how world history shapes what we see today, focusing on world religions, regional history, patterns of interaction among different parts of the world, the development of ideas of law and rights, and other topics found in the Massachusetts Curriculum Framework for History and Social Science, and the Common Core State Standards. It integrates global studies, world history, geography, economics, religion, demographics, 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.

Specific sections of this course will be designed specifically for students who are in the early stages of English language acquisition, with an ACCESS score of 1.0-1.9 and who have been in the U.S. for one year or less.

### **4124/4125 Topics in World History A and B**

**Level: College/Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Non-Completion of Survey of World History**

Topics of World History is an available course for students who did not successfully pass Survey of World History A or B. This course will focus on skill development by walking through major historical world events from ancient times until the 1700s. Students will be able to examine diverse perspectives through the use of primary and secondary sources with an emphasis on reading comprehension and writing output.

### **4225/4226 United States History 1**

**Level: College/Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Completion of Survey of World History**

This course represents a political, sociocultural, and economic study of the United States from 1400 - 1918. Students will explore identity in the context of the developing American landscape as they engage with themes of culture, colonization, government, and resistance. Students will be empowered to be critical thinkers, equity advocates, and engaged citizens as they analyze US History through different lenses. Through this process, students will examine diverse experiences and perspectives, and reflect on the ways in which power is used, maintained, and challenged through the early 20th century. The curriculum focuses on change and continuity over time to gain the historical skills of evaluation and comparison from multiple narratives.

Specific sections of this course will be designed specifically for students who are in the early stages of English language acquisition, with an ACCESS score of 1.0-1.9 and who have been in the U.S. for one year or less.

**Grade Level: 9**

**Fulfills: History Graduation Requirement**

**Grade Level: 9, 10**

**Fulfills: History Graduation Requirement**

**Grade Level: 10**

**Fulfills: History Graduation Requirement**

**4228/4229 Topics in US History 1 A and B****Level: College****Credits: 2.5 per semester/5 per year****Prerequisites: Non-Completion of US History 1**

Topics of US History 1 is an available course for students who did not successfully pass US History 1 A or B. This course will focus on skill development by walking through major historical events from United States history from the colonial era to World War 1. Students will be able to examine diverse perspectives through the use of primary and secondary sources with an emphasis on reading comprehension and writing output.

**Grade Level: 9, 10****Fulfills: History Graduation Requirement****4333/4334 United States History 2****Level: College/Honors****Credits: 2.5 per semester/5 per year****Prerequisites: Completion of US 1**

This course represents a political, sociocultural, and economic study of the United States from 1920 to the present. Topics include immigration patterns, the changing role of government, and shifts in foreign policy. Students will be empowered to be critical thinkers, equity advocates, and engaged citizens as they analyze US History through different lenses. Through this process, students will examine diverse experiences and perspectives, and reflect on the ways in which power is used, maintained, and challenged in modern US history. Particular emphasis will be placed on persuasive writing, historical analysis, and interpersonal communication skills. This course includes student engagement in a Civics project.

**Grade Level: 11****Fulfills: History Graduation Requirement**

Specific sections of this course will be designed specifically for students who are in the early stages of English language acquisition, with an ACCESS score of 1.0-1.9 and who have been in the U.S. for one year or less.

**4336/4337 Topics in US History 2 A and B****Level: College****Credits: 2.5 per semester/5 per year****Prerequisites: Non-Completion of US History 2**

Topics of US History 2 is an available course for students who did not successfully pass US History 2 A or B. This course will focus on skill development by walking through major historical events from United States history from the 1930's through present day. Students will be able to examine diverse perspectives through the use of primary and secondary sources with an emphasis on reading comprehension and writing output.

**Grade Level: 9, 10****Fulfills: History Graduation Requirement**

## **AP Courses**

**4227 AP United States History 1****Level: High Honors****Credits: 2.5 per semester/5 per year****Prerequisites: Completion of World History and Eng 1 as well as teacher recommendation**

Advanced prepares students to take the Advanced Placement exam in U.S. History, taken during the spring semester of 4362 AP US History 2 - Advanced. Beginning with European colonization and ending 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 during their junior year. Students who take U.S. History 1 - Advanced are expected to take AP U.S. History 2 - Advanced to complete their US History graduation requirement.*

**Grade Level: 10, 11, 12****Fulfills: History Graduation Requirement**

**4335 AP United States History 2****Level: AP****Credits: 2.5 per semester/5 per year****Prerequisites: AP United States History 1**

Advanced analyzes the development of the United States from Reconstruction through the 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 using College Board AP standards. The course is reading and writing intensive. This course is required for students enrolled in the Latin Lyceum. *Transfer into AP U.S. History 2 from any other course is reviewed on a case-by-case basis by the Department Chair for approval.*

**Grade Level: 10, 11, 12****Fulfills: History Graduation Requirement****4561 AP European History****Level: AP****Credits: 2.5 per semester/5 per year****Prerequisites: Completion of World History (HH) OR AP US 2 OR Teacher Recommendation**

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.

**Grade Level: 10, 11, 12****Fulfills: History Graduation Requirement****4661 AP Government and Politics****Level: AP****Credits: 2.5 per semester/5 per year****Prerequisites: Completion of US I OR US 2 and teacher recommendation**

U.S. Government and Politics focuses on the study of 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 course must take the AP College Board subject test.

**Grade Level: 11, 12****Fulfills: History Graduation Requirement****4663 AP African American Studies****Level: AP****Credits: 2.5 per semester/5 per year****Prerequisites: Completion of US I or US 2 and teacher recommendation**

AP African American Studies is an interdisciplinary course that examines the diversity of African American experiences through direct encounters with authentic and varied sources. Students explore key topics that extend from early African kingdoms to the ongoing challenges and achievements of the contemporary moment. Given the interdisciplinary character of African American studies, students in the course will develop skills across multiple fields, with an emphasis on developing historical, literary, visual, and data analysis skills. This course foregrounds a study of the diversity of Black communities in the United States within the broader context of Africa and the African diaspora.

**Grade Level: 11, 12****Fulfills: History Graduation Requirement****4445 AP Psychology****Level: AP****Credits: 2.5 per semester/5 per year****Prerequisites: Completion of US I OR US 2 and teacher recommendation**

The Psychology AP 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.

**Grade Level: 11, 12****Fulfills: History Graduation Requirement**

## Early College Courses - MCC

### **4335 Intro To Sociology - MCC**

**Level: Early College**  
**Credits: 2.5 LHS/3 MCC**  
**Prerequisites: None**

This course is an introduction to the study of society and social behavior. Topics covered include sociological theory, research methods, culture, socialization, deviance, social institutions, social stratification, global inequalities, gender, race, ethnicity, social movements and social change.

**Grade Level: 11,12**

**Fulfills: Credit towards Graduation**

### **4447 Intro To Psychology - MCC**

**Level: Early College**  
**Credits: 2.5 LHS/3 MCC**  
**Prerequisites: None**

This course introduces students to the scientific study of the mind and behavior and to the applications of psychological theory to life. Topics include: research methods; biopsychology; lifespan development; memory; learning; social psychology; personality; and psychological health and disorders. This course will establish a foundation for subsequent study in psychology.

**Grade Level: 11,12**

**Fulfills: Credit towards Graduation**

### **4475 Intro To Philosophy - MCC**

**Level: Early College**  
**Credits: 2.5 LHS/3 MCC**  
**Prerequisites: None**

An introductory study of traditional and contemporary philosophies and an analysis of how their ideas apply to living today. Students in the course explore such issues as: the meaning and purpose of life, the nature of religious belief, the justification of moral values, and the meaning of human freedom.

**Grade Level: 12**

**Fulfills: Credit towards Graduation**

### **4665 US History Through 1876 - MCC**

**Level: Early College**  
**Credits: 2.5 LHS/3 MCC**  
**Prerequisites: None**

This course is a survey of the social, political, economic, cultural, and intellectual history of the United States from the pre-Columbian era to the Civil War/Reconstruction period. United States History I includes the study of pre-Columbian, colonial, revolutionary, early national, slavery and sectionalism, and the Civil War/Reconstruction eras. Themes that may be addressed in United States History I include: American settlement and diversity, American culture, religion, civil and human rights, technological change, economic change, immigration and migration, and creation of the federal government.

**Grade Level: 10, 11, 12**

**Fulfills: Credit towards Graduation**

### **4666 US History 1877 to Present - MCC**

**Level: Early College**  
**Credits: 2.5 LHS/3 MCC**  
**Prerequisites: None**

In this course, students will trace the history of the United States from the end of the Reconstruction Era to the present day. Topics will include but are not limited to the rise of industrialization, the United States emergence as an actor on the world stage, Constitutional amendments and their impact, the Progressive Era, World War I, the Great Depression and New Deal, World War 2, the Civil Rights Era, the Cold War, and the United States since 1989. Students will describe the factual details of the substantive historical episodes under study. Students will identify and analyze foundational developments that shaped American history since 1877 using critical thinking skills. Students will demonstrate an understanding of the primary ideas, values, and perceptions that have shaped American history.

**Grade Level: 10, 11, 12**

**Fulfills: Credit towards Graduation**

## Dual Enrollment Courses - UML

### **4701 Teaching in the Inclusive Classroom - UML**

**Level: Post-Secondary**

**Credits: 2.5 LHS/3 UML**

**Prerequisites: None**

**Grade Level: 10, 11, 12**

**Fulfills: Credit towards Graduation**

This course introduces students to what it means to teach in an inclusive elementary classroom, that values the diversity that all students bring to the classroom and operates from the lens of anti-racism and social justice. You will be introduced to designing standards-based lesson plans with measurable learning outcomes. Additionally, you will begin to learn the importance of both formative and summative assessments. You'll be introduced to classroom management techniques to create a safe and effective learning community. You will also be introduced to effective strategies for differentiation of instruction to make learning accessible to all students. Google Classroom will be used as a platform throughout the course, for online discussions, submission of all assignments, and sharing of all course information.

## Elective Courses

### **4375 Lowell Immigration and Industrialization**

**Level: College**

**Credits: 2.5 per semester**

Lowell: Immigration and Industrialization 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.

**Grade Level: 11, 12**

**Fulfills: Credits Towards Graduation**

**Prerequisites: Completion of US I OR US 2**

### **4551 Intro to Criminal Justice**

**Level: College**

**Credits: 2.5 per semester**

This elective course is designed to give students an overview of the Criminal Justice system as an introduction to our Criminal Justice Pathway. Over the course of the semester, students will be introduced to the structures, systems and stakeholders that make up both the adult and juvenile justice systems. They will investigate the impact of crime on both society at large as well as rights afforded the victims, the accused and the convicted. This course will count towards the Criminal Justice Pathway designation.

**Grade Level: 10, 11, 12**

**Fulfills: Credits Towards Graduation**

**Prerequisites: Completion of US I OR US 2**

### **4369 Constitutional Law**

**Level: Honors**

**Credits: 2.5 per semester**

With the U.S. Constitution and the 27 Constitutional Amendments at its core, U.S. Government and Constitutional Law challenges students to think critically about the function of civil rights in our everyday lives. The course begins by examining the way in which our government is structured, giving particular attention to our justice system and the reason and purpose of the Bill of Rights and other Constitutional Amendments. The course then turns its attention to a history of the U.S. Judicial System and the processes inherited from Ancient Societies, Great Britain and early colonial tradition. Next, we examine the most important Supreme Court cases in American History and how they play a role in our everyday lives. Finally, through an action civics program inspired by Generation Citizen, U.S. Government and Constitutional Law challenges students to be active, productive, and responsible participants in the civic life of Lowell, Massachusetts, and the United States. This one-semester course covers the founding principles and governmental structures of the United States and Commonwealth of Massachusetts, protocols around governance, citizen engagement, voting, and symbols of the Commonwealth and nation, all through the lens of important Supreme Court cases. This course can count towards the Criminal Justice Pathway designation.

**Grade Level: 11, 12**

**Fulfills: Credits Towards Graduation**

**Prerequisites: Completion of US I OR US 2**

**4371 Education in America****Level: Honors****Credits: 2.5 per semester**

In the United States of America, education is required for all youth up to age 16 to 18 years of age. It is the single most important common experience of all Americans. 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. The Education in America course introduces 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. It is a required course within the Education Pathway.

**Grade Level: 11, 12****Fulfills: Credits Towards Graduation****Prerequisites: Completion of US I OR US 2****4367 History of Sport****Level: Honors****Credits: 2.5 per semester**

From the dawn of man to the present day, sport has shaped our society in both positive and negative ways. This course is designed to delve into the role sports have played in society from the colonial era until today. It will investigate how unorganized games turned into multimillion dollar leagues and how those decisions influence collegiate athletics. Students will learn how sports serve as a vehicle for political statements and social justice movements. Topics in this course will include but not limited to the ways in which sports reflected and informed issues of race, class, gender, ethnicity and international politics, amateurism and the rise of athletic clubs; women's sports; racial segregation in sports; athletic rivalries during the Cold War; and the globalization of American sports.

**Grade Level: 11, 12****Fulfills: Credits Towards Graduation****Prerequisites: Completion of US I****4801 Intro to Economics and Finance****Level: Honors****Credits: 2.5 per semester**

Intro to Economics & Finance introduces the study of Microeconomics, the analysis of the smaller, individual pieces of larger economic structures, and Macroeconomics, the analysis of the economic behavior of states and governments. This course begins with a survey of basic economic concepts, and then applies these concepts to personal, institutional, and social economic decisions. Students look at how decisions to buy and sell affect prices, output, and employment. Students also study the various factors that influence individual economic decisions and how the market reacts to the decisions of individuals. Students analyze the impact of price changes on supply and demand and the relationship between consumers and producers; and students analyze different market structures. In the macroeconomic realm, students survey and apply basic macroeconomic concepts relating to institutional, governmental, and social decision-making. The focus of this part of the course is on how decisions to buy, sell, lend, and regulate effect output, employment, income distribution, and the balance of trade. Students examine the factors that determine national income, employment, and prices. Students analyze patterns of consumption and saving, private investment, government policy, business fluctuations, and the interaction between money and national income. The last part of the course looks at international economics including exchange rates, markets, and monetary systems.

**Grade Level: 11, 12****Fulfills: Credits Towards Graduation****Prerequisites: Completion of US I****4431 Intro to Sociology****Level: Honors****Credits: 2.5 per semester**

This one-semester course is designed to introduce students to sociology as a discipline, a science, and a way of examining the social world. Students will learn the analytical tools and concepts of sociology by engaging in a purposeful survey of the discipline, as well as a more focused study of selected topics. This course will emphasize a sociological perspective on structural and cultural inequalities, particularly those of race, class, and gender. Students will also learn to become knowledgeable consumers of sociological data as presented in the media and academic sources. This course is offered both semesters. **Students may take 4435 EC-MCC Intro to Sociology after taking this course.**

**Grade Level: 11, 12****Fulfills: Credits Towards Graduation****Prerequisites: Completion of US I OR US 2**

**4443 Intro to Psychology****Level: Honors****Credits: 2.5 per semester**

This course is an introduction to the study of society and social behavior. Topics covered include sociological theory, research methods, culture, socialization, deviance, social institutions, social stratification, global inequalities, gender, race, ethnicity, social movements and social change. ***Students may take AP Psychology after taking this course.***

**Grade Level: 11, 12****Fulfills: Credits Towards Graduation****Prerequisites: Completion of US I OR US 2****4451 Child and Adolescent Development****Level: Honors****Credits: 2.5 per semester**

This one-semester course explores the physical, cognitive, and social development of children from the prenatal stage through adolescence. Exploring important theories of development, the objective of this course is for students to comprehend the different ways that children and adolescents can be understood through the use of different psychological domains. This course is especially relevant for students interested in going into education as their profession. ***Students may take AP or EC-MCC Psychology after taking this course.***

**Grade Level: 11, 12****Fulfills: Credits Towards Graduation****Prerequisites: Completion of US I OR US 2**

## Social Studies Course Quick Reference

4121	C-Survey in World History	Grade 9
4122	H-Survey in World History	Grade 9
4123	HH-Survey of World History	Grade 9
4124/4125	C-Topics in World History A and B	Grade 9,10
4225	C-US History 1	Grade 10
4226	H-US History 1	Grade 10
4228/4229	C-Topics in US 1 A and B	Grade 10,11
4227	AP - US History 1	Grade 10
4333	C-US History 2	Grade 11
4334	H-US History 2	Grade 11
4336/4337	C-Topics in US 2 A and B	Grade 11, 12
4335	AP-US History 2	Grade 10,11,12
4371	H-Education In America	Grade 11,12
4375	C-Lowell: Immigration and Industrialization	Grade 11,12
4431	H-Introduction to Sociology	Grade 11,12
4435	EC-Intro To Sociology	Grade 11,12
4443	H-Intro to Psychology	Grade 11,12
4445	AP-Psychology	Grade 11,12
4447	EC-Intro to Psychology	Grade 11, 12
4451	H-Child & Adolescent Development	Grade 11,12
4475	EC -Intro To Philosophy	Grade 12
4551	C-Intro to Criminal Justice	Grade 10,11,12
4561	AP-European History	Grade 10,11,12
4661	AP-Government and Politics	Grade 11,12
4663	AP-African American Studies	Grade 11,12
4367	H-History of Sport	Grade 11,12
4369	H-Constitutional Law	Grade 11,12
4701	DE-Teaching In The Inclusive Classroom	Grade 10,11,12
4801	H-Economics and Finance	Grade 11,12

# Mathematics Department

Timothy Patterson, Department Chair

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 15 credits in Mathematics (5 credits of Algebra, 5 credits of Geometry, and 5 additional credits in mathematics).

	9th Grade	10th Grade	11th Grade	12th Grade
<i>Core Classes</i>	Algebra 1C Algebra 1H Algebra 1HH  Math Seminar  Topics in Alg 1A and B	Geometry C Geometry H Geometry/Analytic Geometry HH  Algebra II C Algebra II H Algebra II/Trigonometry HH  Topics in Alg 1A and B  Topics in Geo A and B	Algebra IIC Algebra IIH Algebra II/Trigonometry HH  Precalculus C Precalculus H Advanced Precalculus/Calculus HH  Topics in Geo A and B	Precalculus C Precalculus H Advanced Precalculus/Calculus HH  Calculus H Calculus AP AB Calculus AP BC  Topics in Geo A and B  Topics in Alg 2A and B
<i>Possible Electives</i>	Exploring Computer Science C	Exploring Computer Science C Mobile Computer Science Principles H Web Development H Computer Science A H Computer Science A AP	Math 3C Math 4C Financial Algebra C Statistics C Statistics H Statistics AP SAT Math Prep Advanced Quantitative Reasoning C Advanced Quantitative Reasoning H	

## Core Classes

### **1131/1132/1133 Algebra 1**

**Level: College/Honors/High Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites:** (Honors) *Eligibility for this course is established by teacher recommendation, placement test 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. For Students in the Freshman Academy (High Honors) Eligibility for this course is established by teacher recommendation, placement test scores, and a grade of at least 90 in eighth grade mathematics or 80 or above in a full year eighth grade Algebra 1 class. For Students in the Freshman Academy.*

Algebra 1 develops reasoning skills in a way that will help students in their future courses and careers. The topics of Algebra 1 allow students to deepen and extend their understanding and engage in methods for analyzing and solving in these critical focus areas: expressions, equations in one variable, relations and functions, linear and nonlinear functions, creating linear equations, linear inequalities, systems of linear equations and inequalities, exponents and roots, exponential functions, polynomials, and quadratic functions. This course satisfies a mathematics graduation requirement.

Sections of this course will be designed specifically for students who are in the early stages of English language acquisition, with an ACCESS score of 1.0-1.9 and who have been in the U.S. for one year or less.

**Grade Level: 9, 10**

**Fulfills: Algebra Graduation Requirement**

### **1081 Math Seminar**

**Level: Non-Weighted**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Co-requisite with Algebra 1**

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.

**Grade Level: 9**

**Fulfills: Graduation Elective**

### **1231/1232/1233 Geometry**

**Level: College/Honors/High Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: None**

Geometry develops 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. (Honors) There is much greater emphasis on geometry as a postulate based and deductive system. Patterns of inference and other aspects of logical thinking and Applied Algebra are discussed and results are obtained by proof. (High Honors) Geometry and Analytic Geometry (Pre-Calculus A) is a fast paced in-depth course that places emphasis on Geometry as a postulate based and deductive system and includes Coordinate and Analytic Geometry and 3-Dimensional figures. This course satisfies a mathematics graduation requirement.

Sections of this course will be designed specifically for students who are in the early stages of English language acquisition, with an ACCESS score of 1.0-1.9 and who have been in the U.S. for one year or less.

**Grade Level: 10**

**Fulfills: Geometry Graduation Requirement**

**1331/1332/1333 Algebra II****Grade Level: 10, 11, 12****Level: College/Honors/High Honors****Fulfills: Algebra Graduation Requirement****Credits: 2.5 per semester/5 per year**

**Prerequisites:** *Successful completion of Algebra 1 with teacher recommendation is required. High Honors Algebra II may be taken concurrently with High Honors Geometry & Analytical Geometry by students with at least 90 in Algebra 1 - Honors and a score of meeting expectations in the MCAS test. Honors Algebra II may be taken concurrently with Honors Geometry by students with at least an 80 in Honors Algebra I and 95 in College Algebra I.*

Algebra 2 includes how various properties of numbers are derived from Postulates for the real number system. Topics include relations and functions, linear equations, inequalities, and systems, quadratic functions, inverses and radical functions, exponential functions, logarithmic functions, rational functions, trigonometric functions, trigonometric identities and equations. (High Honors) Algebra 2 & Trigonometry combines the three semesters of courses Algebra 2 and Pre-Calculus (Trigonometry) into two semesters. This course satisfies a mathematics graduation requirement.

**1431/1441 Precalculus****Grade Level: 11, 12****Level: College/Honors****Fulfills: Graduation Requirement****Credits: 2.5 per semester/5 per year**

**Prerequisites:** (Honors) *Successful completion of Geometry and Algebra 2 - Honors with a minimum grade of 80 and a score of at least meeting expectations in the MCAS math test, (College) Successful completion of course Geometry and Algebra 2. Students must attain at least a 70 in both Geometry and Algebra 2 and a score of at least meeting expectations in the MCAS math test.*

Pre-Calculus - Honors provides a deeper detail of Analytic Geometry using rectangular coordinates with special attention given to the second-degree equations that describe the conic sections, exposure to the properties of parabolas, hyperbolas, circles and ellipses, and includes further study of functions, rational functions, logarithmic and exponential functions. Also provided is an introduction to concepts of limits and continuity of functions, which are further examined in calculus. Trigonometric functions are defined and discussed, trigonometric identities are studied, and a variety of standard problems involving the use of trigonometric functions are solved. A deeper understanding of angles is pursued. This course satisfies a mathematics graduation requirement.

**1445/1446 Advanced Precalculus/Calculus A****Grade Level: 11, 12****Level: High-Honors****Fulfills: Graduation Requirement****Credits: 2.5 per semester/5 per year**

**Prerequisites:** *Successful completion of Geometry /Analytic Geometry and Algebra 2 - Honors with a minimum grade of 85 and a score of at least meeting expectations in the MCAS math test.*

Advanced Pre-Calculus/Calculus A includes further study of functions, especially logarithmic and exponential, and an introduction to concepts of limits and continuity of functions, which are further examined in Calculus. The trigonometric functions are defined and discussed, trigonometric identities are studied, and a variety of standard problems involving the use of trigonometric functions are solved. This course satisfies a mathematics graduation requirement.

**1443 Calculus****Grade Level: 12****Level: Honors****Fulfills: Graduation Requirement****Credits: 2.5 per semester/5 per year**

**Prerequisites:** *Successful completion of Pre-Calculus; Recommendation of Pre-Calculus teacher and successful completion of a diagnostic exam.*

Fundamentals of Calculus explores graphs, limits and topics of differential and integral calculus are covered. There is more emphasis on problem solving than on theory. This course satisfies a mathematics graduation requirement.

**1465/1467 Statistics****Grade Level: 11, 12****Level: College/Honors****Fulfills: Graduation Requirement****Credits: 2.5 per semester/5 per year**

**Prerequisites:** (Honors) *Successful completion of Algebra 2 - Honors with a minimum grade of 75/College with a minimum grade of 90. (College) Successful completion of Algebra 2 - College with a minimum grade of 70.*

Statistics introduces the students to statistical analysis through problems, simulations and projects. Topics include probability, random variables, and measures of central tendency, variance, discrete and continuous

probability distributions, sampling theory and hypothesis testing. This course satisfies a mathematics graduation requirement.

**1134/1135 Topics in Algebra 1 A and B**

**Grade Level: 9, 10, 11**

**Level: College**

**Fulfills: Graduation Requirement**

**Credits: 2.5 per semester**

**Prerequisites: Non-Completion of Algebra 1**

Algebra 1 develops reasoning skills in a way that will help students in their future courses and careers. The topics of Algebra 1 allow students to deepen and extend their understanding and engage in methods for analyzing and solving in these critical focus areas: expressions, equations in one variable, relations and functions, linear and nonlinear functions, creating linear equations, linear inequalities, systems of linear equations and inequalities, exponents and roots, exponential functions, polynomials, and quadratic functions. This course satisfies a mathematics graduation requirement.

**1234/1235 Topics in Geometry A and B**

**Grade Level: 10, 11, 12**

**Level: College**

**Fulfills: Graduation Requirement**

**Credits: 2.5 per semester**

**Prerequisites: Non-Completion of Geometry**

Geometry develops 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. (Honors) There is much greater emphasis on geometry as a postulate based and deductive system. Patterns of inference and other aspects of logical thinking and Applied Algebra are discussed and results are obtained by proof. (High Honors) Geometry and Analytic Geometry (Pre-Calculus A) is a fast paced in-depth course that places emphasis on Geometry as a postulate based and deductive system and includes Coordinate and Analytic Geometry and 3-Dimensional figures. This course satisfies a mathematics graduation requirement.

**1334/1335 Topics in Algebra 2 A and B**

**Grade Level: 12**

**Level: College**

**Fulfills: Graduation Requirement**

**Credits: 2.5 per semester**

**Prerequisites: Non-Completion of Algebra 2**

Algebra 2 includes how various properties of numbers are derived from Postulates for the real number system. Topics include relations and functions, linear equations, inequalities, and systems, quadratic functions, inverses and radical functions, exponential functions, logarithmic functions, rational functions, trigonometric functions, trigonometric identities and equations.

## **Math Electives**

**1062 SAT Math Preparation**

**Grade Level: 11, 12**

**Level: Honors**

**Fulfills:**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: None**

SAT Preparation Math is a one semester course that is recommended for students wishing to increase their PSAT/SAT math scores. The KHAN Academy website on SAT math problems along with test taking strategies and SAT math tests will be used throughout the entire course.

**1425/1427 Advanced Quantitative Reasoning**

**Grade Level: 12**

**Level: College/Honors**

**Fulfills: Graduation Requirement**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Successful completion of Algebra 1 and Algebra 2.**

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. 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.** This course satisfies a mathematics graduation requirement.

**1355 Math 3**

**Level: College**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: None**

Math 3 will reinforce algebraic problem-solving skills by working with Systems of Linear Equations and Inequalities, Exponents and Roots, Exponential Functions, Polynomials, Quadratic Functions, Relations and Functions, Linear Equations, Linear Inequalities, and Linear Systems. This course satisfies a mathematics graduation requirement.

**Grade Level: 11, 12**

**Fulfills: Algebra Graduation Requirement**

**1429 Math 4**

**Level: College**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: None**

Math 4 will reinforce algebraic problem-solving skills by working with Relations and Functions, Linear Equations, Linear Inequalities, and Linear Systems, Quadratic Functions, Polynomials and Polynomial Functions, Polynomial Equations, Inverses and Radical Functions (time permitting). This course satisfies a mathematics graduation requirement.

**Grade Level: 12**

**Fulfills: Algebra Graduation Requirement**

**1353 Financial Algebra**

**Level: College**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Successful completion of Algebra 1 and Geometry.**

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. This course satisfies a mathematics graduation requirement.

**Grade Level: 12**

**Fulfills: Graduation Requirement**

**1611 Exploring Computer Science**

**Level: College**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: None**

Exploring Computer Science provides students with a comprehensive, hands-on, inquiry-based overview of the vast area of study that is computer science, and is intended for students who have little to no computer science experience. Students will begin the year by studying the societal impact of computing as well as the influence that technology has had on our world and the workforce. Students will then gradually begin to explore more complex topics, such as problem-solving strategies, algorithms, Scratch programming, data analysis, and robotics. The course is designed to provide an equitable, justice-based approach to the study of computer science. By the end of the course, students will be able to effectively use computers not only to solve problems but also for self-expression and social good, and students will come to understand and appreciate not only that computer science has impacted virtually every aspect of today's world, but also that computer science is for everyone, regardless of race, gender, socioeconomic status, or any other aspect of one's identity and/or background. This course satisfies a mathematics graduation requirement.

**Grade Level: 9, 10, 11, 12**

**Fulfills: Graduation Requirement**

**1615 Mobile Computer Science Principles**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: None**

Mobile Computer Science Principles introduces fundamental computer science concepts in an accelerated environment that emphasizes the societal impact of computers and the development of socially useful mobile apps. Students will design and evaluate solutions to problems, incorporate algorithms and abstraction into programs, and use data to discover new knowledge. Students will also explain how computing innovations and computing systems, including the Internet, work, explore their potential impacts, and contribute to a computing culture that is collaborative and ethical. This course satisfies a mathematics

**Grade Level: 10, 11, 12**

**Fulfills: Graduation Requirement**

graduation requirement.

**1631 Web Development**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Successful completion of Algebra 1, Exploring Computer Science, or Mobile Computer Science Principles.**

Web Development introduces students to the process of building their own web pages using the languages HTML and CSS. Students will use HTML to structure their pages so that the content is organized and easy to read and use CSS to style their pages so they are appealing and accessible to the viewer. By the end of the course, students will be able to explain how web pages are developed and viewed on the Internet, analyze and fix errors in existing websites, and create their very own multi page websites. Students will learn the foundations of user interface design, rapid prototyping and user testing, and will work together to create professional, mobile responsive websites. Students will also come to understand and appreciate that learning to design websites is an incredibly useful skill for any career path, since web pages are the most common medium for sharing ideas and information in today's world. This course satisfies a mathematics graduation requirement.

**Grade Level: 10, 11, 12**

**Fulfills: Graduation Requirement**

**1641 Computer Science A**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Successful completion of Algebra 1, Exploring Computer Science, or Mobile Computer Science Principles.**

Introduces students to computer science through programming. Fundamental topics in this course include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems. The course emphasizes object-oriented programming and design using the Java programming language. This course satisfies a mathematics graduation requirement.

**Grade Level: 10, 11, 12**

**Fulfills: Graduation Requirement**

## **AP Courses**

**1475 AP Calculus AB**

**Level: AP**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Completion of Precalculus, Advanced Precalculus/Calculus A.**

Calculus AB gives the student a more thorough knowledge of differential and integral calculus. The topics covered are set forth in guidelines supplied by the AP Calculus Program of the College Board. In part A, the principal topics involve functions, limits, continuity and derivatives. In part B, integrals and anti-derivatives are the main topics. This course satisfies a mathematics graduation requirement.

**Grade Level: 11, 12**

**Fulfills: Graduation Requirement**

**1477 AP Calculus BC**

**Level: AP**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Completion of AP Calculus AB or Calculus.**

Calculus BC gives the student a more thorough knowledge of differential and integral calculus. Topics covered in part C, include parametric, polar, and vector functions, their derivatives and integrals; slope fields and solution curves; convergence and divergence; L'Hospital's rule; Euler's method; and Taylor series. The student is required to take the College Board AP Calculus BC exam, administered in May of senior year. Successful completion of this exam may enable the student to receive credit for first year calculus from colleges throughout the country. Students are required to obtain a graphing calculator, which is necessary for the AP exam. This course satisfies a mathematics graduation requirement.

**Grade Level: 12**

**Fulfills: Graduation Requirement**

**1469 AP Statistics****Level: AP****Credits: 2.5 per semester/5 per year****Prerequisites: *Successful completion of Geometry - Honors with a minimum grade of 80 and successful completion of Algebra 2 - Honors with a minimum grade of 80.***

Statistics AP will cover the AP Statistics syllabus prepared by the Advanced Placement committee of the College Board. Students will take the AP exam in Statistics. This course satisfies a mathematics graduation requirement.

**Grade Level: 12****Fulfills: Graduation Requirement****1643 AP Computer Science A****Level: AP****Credits: 2.5 per semester/5 per year****Prerequisites: *Successful completion of Algebra 1, Exploring Computer Science, or Mobile Computer Science Principles.***

Introduces students to computer science through programming. Fundamental topics in this course include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems. The course emphasizes object-oriented programming and design using the Java programming language. This course satisfies a mathematics graduation requirement.

**Grade Level: 11, 12****Fulfills: Graduation Requirement**

# Math Courses Quick Reference

## MATHEMATICS CORE COURSES

1131	C-Algebra 1	Grade 9
1132	H-Algebra 1	Grade 9
1133	HH-Algebra 1	Grade 9
1134/1135	C-Topics in Algebra 1 A and B	Grade 9, 10
1231	C-Geometry	Grade 10, 11, 12
1232	H-Geometry	Grade 10, 11, 12
1233	HH-Geometry & Analytic Geometry	Grade 10
1234/1235	C-Topics in Geometry A and B	Grade 10, 11, 12
1331	C-Algebra 2	Grade 11, 12
1332	H-Algebra 2	Grade 10, 11, 12
1333	HH-Algebra 2 & Trigonometry	Grade 10, 11
1234/1235	C-Topics in Algebra 2 A and B	Grades 11, 12
1431	C-Pre-Calculus	Grade 11, 12
1441	H-Pre-Calculus	Grade 11, 12
1445/1446	HH-Advanced Pre-Calculus / Calculus A	Grade 11, 12
1443	H-Calculus	Grade 12
1475	AP-Calculus AB	Grade 11, 12
1477	AP-Calculus BC	Grade 12
1465	C-Statistics	Grade 12
1467	H-Statistics	Grade 12
1469	AP-Statistics	Grade 11, 12

## MATHEMATICS SUPPORT & ELECTIVE COURSES

1062	C-SAT Math Preparation	Grade 11, 12
1081	N-Math Seminar	Grade 9 (FA)
1425	C-Advanced Quantitative Reasoning	Grade 11, 12
1427	H-Advanced Quantitative Reasoning	Grade 11, 12
1355	C-Math 3	Grade 11
1429	C-Math 4	Grade 12
1353	C-Financial Algebra	Grade 11, 12

## COMPUTER SCIENCE

1611	C-Exploring Computer Science	Grade 9, 10, 11, 12
1615	H-Mobile Computer Science Principles	Grade 10, 11, 12
1631	H-Web Development	Grade 10, 11, 12
1641	H-Computer Science A	Grade 10, 11, 12
1643	AP-Computer Science A	Grade 10, 11, 12

# Science Department

Dr. Tara Goodhue, Department Chair

The Science Department is dedicated to fostering curiosity, critical thinking, and a deep understanding of the natural world through engaging, hands-on learning experiences aligned with the Massachusetts Science and Engineering/Technology Frameworks. Our curriculum emphasizes inquiry, collaboration, and the application of scientific principles to real-world challenges. Students develop essential skills such as analyzing and interpreting data, constructing evidence-based explanations, and designing innovative solutions to complex problems.

To meet graduation requirements, students must earn 15 lab science credits. Science elective courses explore advanced topics and allow students to tailor their learning to their interests while continuing to develop critical skills in scientific investigation and engineering practices. The Department's rigorous yet supportive approach prepares students to excel in higher education and contribute meaningfully to a scientifically literate society.

	9th Grade	10th Grade	11th Grade	12th Grade
<i>Core Courses</i>	Integrated Science & Engineering C  Integrated Science & Engineering H  Biology HH	Biology C  Biology H  Topics in Biology A and B		
<i>Possible Electives</i>		Chemistry H ( <b>From HH ISE only</b> ) Intro to Engineering Design H Robotics H Introduction to Robotics and Automation (Chapter 74) Introduction to Health Assisting	Conceptual Chemistry C Chemistry H Physics C Physics H Physics 1 AP (GRADE 12 Only) Anatomy & Physiology C Human Anatomy & Physiology H Astronomy C Earth Science C Microbiology H Genetics H Forensic Science H (GRADE 12) Environmental Studies H Introduction to Renewable Energy H Principles of Biomedical Science H Foundations of Engineering H Applied Engineering H Robotics H Life Science I & II (UML - GRADE 12 Only) General Biology 1 (MCC) Chemistry (UML - GRADE 12 Only) Chemistry Lab (UML - GRADE 12 Only) Environmental Studies (MCC) Intro to Engineering (MCC)	

## Core Courses

### **3131/3132 Integrated Science & Engineering**

**Level: College/Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Placement is based on a combination of middle school grades, a student's iReady and MCAS scores, and teacher recommendations**

Integrated Science & Engineering provides a foundation in the study of Introductory Physical Science, Chemistry, Biology, and Engineering. Students will be expected to develop a qualitative understanding of fundamental course concepts through teacher-guided inquiry that includes hands-on activities, laboratory investigations, and teacher demonstrations.

Specific sections of this course will be designed specifically for students who are in the early stages of English language acquisition, with an ACCESS score of 1.0-1.9 and who have been in the U.S. for one year or less.

**Grade Level: 9**

**Fulfills: Graduation Requirement**

### **3242 High Honors Biology Grade 9**

**Level: High Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Placement is based on a combination of middle school grades, a student's iReady and MCAS scores, and teacher recommendations**

Biology provides students with the opportunity to investigate complex phenomena related to genetics, the functioning of organisms, and interrelationships between organisms, populations, and the environment. Students will explore four core ideas of biology: 1) *From molecules to organisms: structures and processes*, 2) *Ecosystems: interactions, energy, and dynamics*, 3) *Heredity: inheritance and variation of traits*; and 4) *Biological evolution: unity and diversity*. Students will develop their fluency with science and engineering practices throughout the course, which include developing and using models; constructing explanations; engaging in argumentation from evidence; and obtaining, evaluating, and communicating information.

**NOTE: This is a pilot course for High Honors 9th grade students only with the goal of expanding to College and Honors levels for the 27-28 school year.**

**Grade Level: 9**

**Fulfills: Graduation Requirement**

### **3132/3241 Biology**

**Level: College/Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: H-Bio prerequisites: 80 or above in Honors Integrated Science & Engineering, 90 or above in College Integrated Science & Engineering**

Biology provides students with the opportunity to investigate complex phenomena related to genetics, the functioning of organisms, and interrelationships between organisms, populations, and the environment. Students will explore four core ideas of biology: 1) *From molecules to organisms: structures and processes*, 2) *Ecosystems: interactions, energy, and dynamics*, 3) *Heredity: inheritance and variation of traits*; and 4) *Biological evolution: unity and diversity*. Students will develop their fluency with science and engineering practices throughout the course, which include developing and using models; constructing explanations; engaging in argumentation from evidence; and obtaining, evaluating, and communicating information.

Specific sections of this course will be designed specifically for students who are in the early stages of English language acquisition, with an ACCESS score of 1.0-1.9 and who have been in the U.S. for one year or less.

**Grade Level: 10**

**Fulfills: Graduation Requirement**

**3233/3244 Topics in Biology A and B****Level: College****Credits: 2.5****Prerequisites: Non-completion of Biology**

Topics in Biology provides students with the opportunity to investigate various topics in biology including the functioning of organisms, and interrelationships between organisms, populations, and the environment. Students will explore four core ideas of biology: 1) From molecules to organisms: structures and processes, 2) Ecosystems: interactions, energy, and dynamics, 3) Heredity: inheritance and variation of traits; and 4) Biological evolution: unity and diversity. Students will develop their fluency with science and engineering practices throughout the course, which include developing and using models; constructing explanations; engaging in argumentation from evidence; and obtaining, evaluating, and communicating information.

**Grade Level: 11, 12****Fulfills: Graduation Requirement**

## AP Courses

**Physics 1****Level: AP****Credits: 2.5/2/5****Prerequisites: This course requires a strong background in Algebra. Students must have had an 85 or above in Honors Algebra II or 95 or above in College Algebra II**

AP Physics 1 explores principles of Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and fluid dynamics. 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.

**Grade Level: 12****Fulfills: Graduation Requirement**

## Dual Enrollment Courses

**3731 Life Science I & II - UML****Level: Dual Enrollment****Credits: 2.5/2.5 LHS/3/3 UML****Prerequisites: 85 or above in H-Biology; 90 or above in C-Biology**

This course presents environmental and organismal structural interrelationships and relates these to the chemical evolutionary basis of life.

**Grade Level: 12****Fulfills: Elective, NOT graduation requirement****3721 Chemistry - UML****Level: Dual Enrollment****Credits: 4/4 LHS/3/3 UML****Prerequisites: 85 or above in H-Chemistry**

Dual Enrollment Chemistry is an advanced weighted University of Massachusetts course introducing the basic principles of chemistry and includes 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 (two class periods).

*\* This UML course and the UML lab must be taken concurrently*

**Grade Level: 12****Fulfills: Graduation Requirement****3723 Chemistry Lab - UML****Level: Dual Enrollment****Credits: 1/1 LHS/1/1 UML****Prerequisites: 85 or above in H-Chemistry**

Dual Enrollment Chemistry is an advanced weighted University of Massachusetts course introducing the basic principles of chemistry and includes 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 (two class periods).

*\* This UML course and the UML lab must be taken concurrently.*

**Grade Level: 12****Fulfills: Graduation Requirement**

## Early College Courses

### **3250 General Biology 1 - MCC**

**Level: Early College**

**Credits: 2.5 LHS/4 MCC**

**Prerequisites: 85 or above in H-Biology**

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.

**Grade Level: 11, 12**

**Fulfills: Elective**

### **3735 Environmental Studies - MCC**

**Level: Early College**

**Credits: 2.5 LHS/3 MCC**

**Prerequisites: 80 or above in H-Biology; 85 or above in C-Biology**

Students will 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. Weather permitting, this class requires outdoor learning as a routine part of the course.

**Grade Level: 11, 12**

**Fulfills: Elective**

### **3971 Introduction to Engineering - MCC**

**Level: Early College**

**Credits: 2.5 LHS/3 MCC**

**Prerequisites:** Juniors should have already taken or be concurrently enrolled in Calculus or Trigonometry.

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.

**Grade Level: 11, 12**

**Fulfills: Elective**

## Elective Courses

### **3783 Microbiology**

**Level: Honors**

**Credits: 2.5**

**Prerequisites:** 85 or above in Honors Biology.

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. **Prerequisites:** 85 or above in Honors Biology.

**Grade Level: 11, 12**

**Fulfills: Graduation Requirement**

### **3550 Introduction to Health Assisting**

**Level: Honors**

**Credits: 2.5**

**Prerequisites:** None.

This introductory course is designed for Grade 10 students interested in Health Assisting. Students will explore a wide range of career opportunities within the health care field, one of the fastest-growing industries in the nation. Through engaging lessons, hands-on classroom and laboratory activities, and career exploration experiences, students will develop foundational skills and knowledge while assessing their interests and readiness for future study and careers in health care. As part of the course, students will become OSHA certified by earning the OSHA 10-Hour Safety in Healthcare credential, providing an essential foundation in workplace safety standards.

**Grade Level: 10**

**Fulfills: Graduation Requirement**

**3331 Conceptual Chemistry****Level: College****Prerequisites: None**

Conceptual Chemistry is a course designed for students who will most likely be pursuing Humanities based majors in college. This inquiry-based course develops qualitative understanding of fundamental chemistry concepts such as atomic theory, kinetic molecular theory, and properties of solutions through teacher guided inquiry that includes hands-on class activities, laboratory investigations, and demonstrations.

**Grade Level: 11, 12****Fulfills: Graduation Requirement****3341 Chemistry****Level: Honors****Credits: 2.5/2.5****Prerequisites: 75 or above in Honors or High Honors Algebra 1**

Honors Chemistry is a course designed to prepare students for STEM-based majors in college. This 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.

**Grade Level: 11, 12****Fulfills: Graduation Requirement****3440/3441 Physics****Level: College/Honors****Credits: 2.5/2.5****Prerequisites: Honors Grade 11: 80 or higher in Honors Geometry; 90 or above in College Geometry; concurrently enrolled in Algebra II, Honors Grade 12: 80 or above in Honors Algebra II, 90 or above in College Algebra II. College: None**

Physics is an introduction to classical mechanics covering kinematics, Newton's laws, conservation laws, elasticity, oscillations, wave mechanics, sound phenomena, gravitation, electricity, magnetism, and electric circuits. This is a mathematically based course. Students' proficiency with mathematics will determine placement into honors or college level.

**Grade Level: 11, 12****Fulfills: Graduation Requirement****3531 Earth Science****Level: College****Credits: 2.5/5.0****Prerequisites: None**

This full-year Earth Science course examines Earth's interconnected system phenomena, while also studying the impacts of human influence on these systems. Students study the different geological processes, including the creation and destruction of earth's landforms, weather systems and climate, Sun's energy uses, Earth's geography, and the movement of air and water between ecosystems. Students will analyze human use of natural resources and the resulting impacts on Earth systems and the environment. By the end of this course students will be able to understand and explain the interrelationship between earth's activities and cycles, while also modeling the flow of energy through earth systems.

**Grade Level: 11, 12****Fulfills: Graduation Requirement****3528 Astronomy****Level: College****Credits: 2.5****Prerequisites: None**

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; constellations; the lives and deaths of stars; telescopes and the nature of light; the structure and composition of our moon, planets, stars, solar systems and galaxies; the history, future, and sustainability of human space exploration and solar energy. Students will be able to model the motion of celestial objects, model the lives of stars, and explain Earth's place in the universe.

**Grade Level: 11, 12****Fulfills: Graduation Requirement**

**3543 Anatomy & Physiology****Level: Honors****Credits: 2.5/5.0****Prerequisites: Honors: 75 or above in Honors Biology; 85 or above in College Biology.**

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 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. Meets Lab Science Standards, Meets Lab Science standards

**Grade Level: 11, 12****Fulfills: Graduation Requirement****3539 Anatomy & Physiology****Level: College****Credits: 2.5/5.0****Prerequisites: College: None**

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 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. Meets Lab Science Standards, Meets Lab Science standards

**Grade Level: 11, 12****Fulfills: Graduation Requirement****3548 Genetics****Level: Honors****Credits: 2.5****Prerequisites: 75 or above in Honors Biology; 85 or above in College Biology**

Genetics covers basic concepts of inheritance, variation and evolution in plants and animals, including a survey of Mendelian, molecular, cellular, and population genetics. Students will learn about recent advances in biotechnology that have genetic implications, including the Human Genome Project and advances in genetic engineering technology.

**Grade Level: 11, 12****Fulfills: Graduation Requirement****3560 Forensic Science****Level: Honors****Credits: 2.5**

Forensic Science offers an engaging exploration of the biological aspects of forensic science through hands-on lab activities. Students will learn to process crime scenes, collect and analyze trace evidence, and conduct mock investigations. The curriculum includes microscopy, fingerprint investigation, toxicology studies, and the role of entomology in determining time of death. Emphasizing lab safety and critical thinking, students will evaluate real-world case studies, gaining practical skills and insights into how biological sciences aid criminal investigations. ***This course is highly recommended for students with an interest in the field of criminal justice.***

**Grade Level: 12****Fulfills: Graduation Requirement****Prerequisites: None****3733 Environmental Studies****Level: Honors****Credits: 2.5****Prerequisites: 75 or above in Honors Biology; 85 or above in College Biology**

Environmental Science is a multifaceted 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. This class includes the study of the structure and function of ecosystems, thermodynamics, and an examination of selected environmental problems and will lay the foundation for students to further their understanding of the world we live in. Students will be required to complete necessary readings, participate in group discussions, and offer written opinions on a regular basis.

**Grade Level: 11, 12****Fulfills: Graduation Requirement**

**3785 Introduction to Renewable Energy****Level: Honors****Credits: 2.5****Prerequisites: None**

Students engage in a semester-long class where they research information about fossil fuels, renewable resources, pollution, and sustainability initiatives. The final product of the course will be a student presentation where they share their vision and plan with their peers and community partners. Throughout the course, students will explore topics related to energy usage, climate change, and water availability by engaging in inquiry-based experiments that will inform their plan for a more sustainable Lowell. Students will keep a portfolio of their work that will be used for assessment.

**Grade Level: 11, 12****Fulfills: Graduation Requirement****3611 Principles Of Biomedical Science****Level: Honors****Credits: 2.5/2.5****Prerequisites: None**

In the introductory course students explore concepts of biology and medicine to determine factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person's life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.

**Grade Level: 11, 12****Fulfills: Graduation Requirement****3911 Foundations of Engineering****Level: Honors****Credits: 2.5/2.5****Prerequisites: 85 or above in College level Freshman Math course or 75 or above in Honors level Freshman Math course to enter as a sophomore.**

Foundations of Engineering is a high school level course that is appropriate for students who are interested in design and engineering. The major focus of the course is to expose students to the design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards, and technical documentation. Foundations of Engineering gives students the opportunity to develop skills and understanding of course concepts through activity-, project-, and problem-based learning. Used in combination with a teaming approach, problem-based 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. The course applies and concurrently develops secondary level knowledge and skills in mathematics, science, and technology. Meets Lab Science standards.

**Grade Level: 10, 11, 12****Fulfills: Graduation Requirement****3921 Applied Engineering****Level: Honors****Credits: 2.5/2.5****Prerequisites: 80 or above in Introduction to Engineering Design (PLTW)**

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 careers. 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.

**Grade Level: 11, 12****Fulfills: Graduation Requirement****3953 Robotics****Level: Honors****Credits: 2.5****Prerequisites: None**

Robotics is a hands-on environment designed to help students understand and master the fundamentals of robotics and the related principles of science. Students start out learning the basics of robotics, electricity and progress to controller/programmable robot platforms. Students also develop an understanding of robot applications from research projects, videos, class visits from academic and industry representatives and visits to companies specializing in the design or use of robots.

**Grade Level: 10, 11, 12****Fulfills: Graduation Requirement**

# Science Courses Quick Reference

## Science Core Courses

3131	C-Integrated Science & Engineering	Grade 9
3132	H-Integrated Science & Engineering	Grade 9
3242	HH-Biology	Grade 9
3231	C-Biology	Grade 10
3241	H-Biology	Grade 10
3233/3234	C-Topics in Biology A and B	Grade 10, 11

## Science Elective Courses

3731	DE-Life Science I & II (UML)	Grade 11,12
3250	EC-General Biology 1 (MCC)	Grade 11,12
3783	H-Microbiology	Grade 11,12
3331	C-Conceptual Chemistry	Grade 11,12
3341	H-Chemistry	Grade 10, 11,12
3721	DE-Chemistry (UML)	Grade 11,12
3723	DE-Chemistry Lab (UML)	Grade 11,12
3441	H-Physics	Grade 11,12
	C-Physics	Grade 11, 12
3461	AP-Physics 1	Grade 11,12
3531	C-Earth Science	Grade 11,12
3528	C-Astronomy	Grade 11,12
3539	C-Anatomy & Physiology	Grade 11, 12
3543	H-Anatomy & Physiology	Grade 11,12
3545/3546	EC-Anatomy & Physiology 1 and 2 (MCC)	Grade 12
3548	H-Genetics	Grade 11,12
3548	H-Health Assisting	Grade 10
3560	H-Forensics Science	Grade 12
3787	EC-Nutrition (MCC)	Grade 11, 12
3611	H-Principles of Biomedical Science	Grade 11,12

## Environmental Science Electives

3534	C-Environmental Science	Grade 10, 11, 12
3735	EC-Environmental Studies (MCC)	Grade 11,12
3733	H-Environmental Studies	Grade 11,12
3785	H-Introduction to Renewable Energy	Grade 11,12

## Engineering Electives

3911	H- Foundations of Engineering	Grade 10,11,12
3921	H-Applied Engineering	Grade 11,12
3953	H-Robotics	Grade 10,11,12
3971	EC-Introduction to Engineering	Grade 11,12

# World Language Department

Stephen L. Gervais Jr., Department Chair

It is the goal of the World 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 world 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 that developing greater proficiency in more languages means you can use your language and communication skills for travel, work and for further study.

It is strongly recommended that all students select one (1) World 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 after the initial scheduling process. They may choose from a World 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 unless there are extenuating circumstances. 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 Chair for an interview or a placement exam. Heritage Language speakers will also take a placement exam to determine proper scheduling. During the 2025-2026 academic year, Latin will have Honors and Advanced sections; Spanish will have separate sections for most levels; and French, Khmer and Portuguese will have the Honors level. We hope that many World Languages and MLE students will qualify for the State Seal of Biliteracy based on demonstration of language skills in reading, writing, speaking and listening.

**Novice Level:** A novice language learner can use small, repetitive, and memorized phrases on familiar topics. They can identify some cultural practices and products, as well as give opinions.

**Intermediate Level:** An intermediate language learner can use strings of simple sentences, begin to ask original questions and has a wider variety of vocabulary on a range of topics. They can use connector words to put different ideas together and make connections among products, practices, and perspectives of the target culture.

**Intermediate Mid-/Advanced Low Level:** A high intermediate or advanced low language learner can use strings of sentences to explain their ideas, ask original questions, and speak at length on a variety of familiar and unfamiliar topics. They can use different tenses in speaking and writing and make connections among products, practices, and perspectives of the target culture.

## Student Learning Goals in World Language:

- Students will develop their interpersonal, interpretive, and presentational communication skills in the target language.
- Students will increase their cultural understanding by comparing their own culture to other cultures.

## Latin

### **2111 Latin 1**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: None** Latin 1 Honors is an accelerated course for students who have demonstrated honors level work. Students will read stories in Latin about life in the ancient city of Pompeii and the Roman provinces of Britain and Egypt. Students will learn about Roman culture, history, and classical mythology through these stories. Thorough training is given in the basic vocabulary, forms and elementary grammar of the language along with practice in sight reading. Students will explore Latin roots in English, and learn ways to figure out English words based on their Latin elements. This course prepares students to take the level 1 National Latin Exam in March.

**Grade Level: 9, 10,11,12**

**Fulfills: Elective**

### **2112 Latin 2**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Latin 1 or Department Chair approval** Latin 2 Honors begins with an accelerated review of the material covered in Latin I, and the story line continues as our characters move from Egypt to Greece, and back to Britain. In this course, the greedy Roman official, Salvius, tries to control the British tribes. Sometimes he is successful, and sometimes his plans backfire. There is plenty of drama to accompany our studies of more advanced grammatical concepts, such as participles and subjunctive mood. Students will further expand their knowledge of Latin vocabulary and Latin derivatives in English. Students will read and analyze Latin at an intermediate level, and learn more about Roman culture in the provinces. Students will also learn about life in the thriving city of Rome in the first century CE. In addition, students will learn about the gods and heroes of Greece and Rome. This course prepares students to take the level 2 National Latin Exam.

**Grade Level: 9, 10, 11,12**

**Fulfills: Elective**

### **2113 Latin Prose**

**Level: High Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Latin 2 or Department Chair approval** Advanced Latin Prose is a survey of selected prose authors, and their writings on Roman culture and history. The underlying goal of the course is to develop an understanding of Latin literature through the words of Roman writers Tacitus, Caesar, Pliny the Elder, Pliny the Younger, and Cicero. As we learn about the history and culture of the ancient Roman civilization, we will recognize and appreciate the connections between Roman and modern political and social developments. History does repeat itself. Note: This course is offered in alternating years with Advanced Latin Poetry. (Odd years)

**Grade Level: 11, 12**

**Fulfills: Elective**

### **2114 Latin Poetry**

**Level: High-Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Latin 2 or Department Chair approval** Advanced Latin Poetry is a survey of selected Roman poets, and their writings on life and love in the ancient world. The underlying goal of this course is to develop an understanding of Latin literature through the reading and study of Martial, Catullus, Vergil, Ovid, and Phaedrus. We will learn about the life and culture of the ancient Romans, and recognize and appreciate the connections between Roman and modern social development. We will marvel that the Romans of the first century dealt with the same issues we do in the 21st century. Note: This course is offered in alternating years with Advanced Latin Prose. (Even years)

**Grade Level: 11, 12**

**Fulfills: Elective**

# Portuguese

## **2613 Portuguese 1**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: None**

Portuguese 1 - Honors is an accelerated course for students with no previous knowledge of Portuguese who are doing honors level work. Grammatical and idiomatic structures, reading, correct pronunciation, oral practice, listening comprehension, and customs and traditions of Portuguese speaking countries are introduced. Note: This is not generally an appropriate course for native speakers of Portuguese.

**Grade Level: 9, 10, 11, 12**

**Fulfills: Elective**

## **2623 Portuguese 2**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Portuguese 1 or Department Chair approval** Portuguese 2 - Honors continues the study of grammar, speaking, reading, listening, and writing are all strengthened. Since most students are highly motivated and college-bound, this class proceeds as rapidly as possible to meet the standards of college entrance requirements.

**Grade Level: 9, 10, 11, 12**

**Fulfills: Elective**

## **2633 Portuguese 3**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Portuguese 2 or Department Chair approval**

Portuguese 3 - Portuguese 3 emphasizes grammar and the finer points and idiomatic usage of the language. The skills in writing, reading, aural comprehension and oral expression are strengthened with an introduction to Portuguese literature.

**Grade Level: 9, 10, 11, 12**

**Fulfills: Elective**

## **2643 Portuguese 4**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Portuguese 3 or Department Chair approval**

Portuguese 4 - Portuguese 4 is for the student who wishes to further his/her knowledge of the Portuguese language, and to help fulfill college graduation requirements while still in high school. This course will emphasize the practical use of Portuguese in everyday situations as well as strengthen the four language skills of reading, writing, listening and speaking.

**Grade Level: 10, 11, 12**

**Fulfills: Elective**

## **2651 Portuguese 1 Heritage Speaker**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Placement or Department Chair approval**

Portuguese 1 - Heritage Speaker is for students who have native listening/speaking skills in Portuguese, 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 Portuguese-speaking people. It will initially move at a quicker pace than Portuguese 1 - Honors, and will have a different emphasis, - more on reading and writing structure, with a rapid review of basic vocabulary.

**Grade Level: 10, 11, 12**

**Fulfills: Elective**

**2653 Portuguese 2 Heritage Speaker****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: Placement or Department Chair approval**

This course is designed for successful learning of the Portuguese (Luso) world language and cultures. It includes fundamentals of the Portuguese Language: a) speaking, b) reading, c) writing d) listening (and variations). Regardless of their experience, in addition to grammar, learners will be exposed to the cultural and linguistic heritage of Portuguese-speaking people

The model will be a combination of traditional and nontraditional (experiential-based) and all participants will be exposed to proven language learning strategies.

**Grade Level: 9, 10, 11, 12****Fulfills: Elective**

## French

**2313 French 1****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: None**

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. Note: This is not generally an appropriate course for native speakers of French.

**Grade Level: 9, 10, 11, 12****Fulfills: Elective****2323 French 2****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: French 1 or Department Chair approval**

French 2 - Honors provides a more detailed oral-aural continuation of speaking and listening skills, 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 for many colleges and universities. (Many competitive colleges and universities require 3 years of a world language, just for admission. For students who want to major in French, some require 4 or 5 years of French)

**Grade Level: 9, 10, 11, 12****Fulfills: Elective****2333 French 3****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: French 2 or Department Chair approval**

French 3 - Honors entails written and oral work, based on 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.

**Grade Level: 9, 10, 11, 12****Fulfills: Elective**

**2343 French 4****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: French 3 or Department Chair approval**

French 4 - Honors encompasses an introduction to French literature through the reading of selected excerpts of masterpieces of the major genres and philosophies. Reading and analysis of text used as a basis for conversation including the study of the finer points of grammar and written expression.

**Grade Level: 10, 11, 12****Fulfills: Elective****2361 French Text Film and Media****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: French 3 or Department Chair approval**

This course presents a study of the contemporary language and culture of France and the Francophone world through authentic materials including the French press, the internet, television, literature and film. At the end of this course students should have attained a more sophisticated level of communication in French, the ability to use their skills in French for a variety of purposes including research in other disciplines, and a full appreciation of the intellectual challenge of learning a foreign language and its cultures

**Grade Level: 10, 11, 12****Fulfills: Elective**

## Spanish

**2511 Spanish 1****Level: College****Credits: 2.5 per semester/5 per year****Prerequisites: None**

A course for students who seem to meet college requirements, and for those who are following a college preparatory program. This course introduces the basics of a world language with an emphasis on correct pronunciation, formal grammar (verb tenses, pronouns, etc.) , listening comprehension, reading and writing in a world language, and the study of the customs and traditions of the Spanish-speaking people. Note: This is not generally an appropriate course for native speakers of Spanish

**Grade Level: 9, 10, 11, 12****Fulfills: Elective****2513 Spanish 1****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: Generally, an Honors schedule**

Honors is an accelerated course focusing on grammatical and idiomatic structures, reading, correct pronunciations, oral practice, aural comprehension, and customs and traditions of Spanish-speaking countries are introduced at a quicker pace than Spanish 1 - College. Note: This is not generally an appropriate course for native speakers of Spanish.

**Grade Level: 9, 10, 11, 12****Fulfills: Elective****2521 Spanish 2****Level: College****Credits: 2.5 per semester/5 per year****Prerequisites: Spanish 1**

Reviews the work of Spanish 1 with an increased emphasis on the skills learned in the first year: speaking, listening comprehension, reading comprehension, writing in the world language, and more in-depth study of the history and geography of Spain and Latin America.

**Grade Level: 9, 10, 11, 12****Fulfills: Elective**

**2523 Spanish 2****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: Honors Spanish 1 (80) or Department Chair approval**

Spanish 2 - Honors continues the development of grammar, aural and reading comprehension, speaking and writing for enjoyment. This class proceeds as rapidly as possible to meet the standards of college entrance requirements.

**Grade Level: 9, 10, 11, 12****Fulfills: Elective****2531 Spanish 3****Level: College****Credits: 2.5 per semester/5 per year****Prerequisites: College Spanish 2 or Department Chair approval**

Spanish 3 - College continues the work of Spanish 2 and introduces Spanish literature and art

**Grade Level: 9, 10, 11, 12****Fulfills: Elective****2533 Spanish 3****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: Honors Spanish 2 (80) or Department Chair approval**

Spanish 3 - Honors includes deeper work with grammar and emphasizes the finer points and idiomatic usage. The skills in writing, reading, and aural comprehension, together with oral expression are strengthened, and literature in Spanish is introduced.

**Grade Level: 9, 10, 11, 12****Fulfills: Elective****2541 Spanish 4****Level: College****Credits: 2.5 per semester/5 per year****Prerequisites: Spanish 3**

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.

**Grade Level: 11, 12****Fulfills: Elective****2543 Spanish 4****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: Honors Spanish 3 (80) or Department Chair approval**

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.

**Grade Level: 11, 12****Fulfills: Elective****2545 AP Spanish Language****Level: Advanced****Credits: 2.5 per semester/5 per year****Prerequisites: Honors Spanish 3 or Department Chair approval**

Spanish 4 Advanced 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.

**Grade Level: 11, 12****Fulfills: Elective**

**2553 Spanish Conversation****Grade Level: 10, 11, 12****Level: Honors****Fulfills: Elective****Credits: 2.5 per semester/5 per year****Prerequisites: Honors Spanish 2 (70) or Department Chair approval**

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 selected in addition to them.

**2561 Spanish Literature****Grade Level: 10, 11, 12****Level: Honors****Fulfills: Elective****Credits: 2.5 per semester/5 per year****Prerequisites: Honors Spanish 3 or Department Chair approval**

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.

**2503 Spanish 1 - Heritage Speaker****Grade Level: 9, 10, 11, 12****Level: Honors****Fulfills: Elective****Credits: 2.5 per semester/5 per year****Prerequisites: Placement or Department Chair approval**

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.

**2507 Spanish 2 - Heritage Speaker****Grade Level: 10, 11, 12****Level: Honors****Fulfills: Elective****Credits: 2.5 per semester/5 per year****Prerequisites: Placement or Department Chair approval**

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.

# Khmer

## **2713 Khmer 1**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: None**

Khmer 1 - Honors is an accelerated course offered to students who are doing honors level work. This course is an introduction to the Khmer language: basic grammar, conversation, reading, writing, and an introduction to the customs, traditions, and culture of Khmer-speaking people.

**Grade Level: 9, 10, 11, 12**

**Fulfills: Elective**

## **2723 Khmer 2**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Khmer 1 or Department Chair approval**

Khmer 2 - Honors reviews the work of Khmer 1 and continues with a more concentrated study of grammar and the alphabet, sounds and characters, reading and writing. Since most students are highly motivated and college-bound, this class proceeds as rapidly as possible to meet the standards of college entrance requirements.

**Grade Level: 9, 10, 11, 12**

**Fulfills: Elective**

## **2733 Khmer 3**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Khmer 2 or Department Chair approval**

Khmer 3 – Khmer 3 emphasizes grammar and the finer points and idiomatic usage of the language. The skills in writing, reading, aural comprehension and oral expression are strengthened with an introduction to Khmer literature.

**Grade Level: 9, 10, 11, 12**

**Fulfills: Elective**

## **2743 Khmer 4**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Khmer 3 or Department Chair approval**

Khmer 4 - Khmer 4 is for the student who wishes to further his/her knowledge of the Khmer language, and to help fulfill college graduation requirements while still in high school. This course will emphasize the practical use of Khmer in everyday situations as well as strengthen the four language skills of reading, writing, listening and speaking.

**Grade Level: 10, 11, 12**

**Fulfills: Elective**

# World Language Courses Quick Reference

## Latin

2111	H-Latin 1	Grade 9, 10, 11, 12
2112	H-Latin 2	9, 10, 11, 12
2113	H-Latin Prose	11, 12
2114	H-Latin Poetry	11, 12

## Portuguese

2613	H-Portuguese 1	9, 10, 11, 12
2623	H-Portuguese 2	9, 10, 11, 12
2633	H-Portuguese 3	10, 11, 12
2643	H-Portuguese 4	11, 12
2651	H-Heritage Portuguese 1	9, 10, 11, 12
2653	H-Heritage Portuguese 2	10, 11, 12

## French

2313	H-French 1 - Honors	Grade 9, 10, 11, 12
2323	H-French 2 - Honors	Grade 9, 10, 11, 12
2333	H-French 3 - Honors	Grade 10, 11, 12
2343	H-French 4 - Honors	Grade 11, 12
2361	H-French Text, Film and Media	Grade 11, 12

## Spanish

2511	C-Spanish 1	Grade 9, 10, 11, 12
2513	H-Spanish 1	Grade 9, 10, 11, 12
2521	C-Spanish 2	Grade 9, 10, 11, 12
2523	H-Spanish 2	Grade 9, 10, 11, 12
2531	C-Spanish 3	Grade 9, 10, 11, 12
2533	H-Spanish 3	Grade 9, 10, 11, 12
2541	C-Spanish 4	Grade 10, 11, 12
2543	H-Spanish 4	Grade 10, 11, 12
2545	AP-Spanish Language	Grade 11, 12
2553	H-Spanish Conversation	Grade 10, 11, 12
2561	H-Spanish Literature	Grade 10, 11, 12
2503	H-Spanish 1 - Heritage Speaker	Grade 9, 10, 11, 12
2507	H-Spanish 2 - Heritage Speaker	Grade 10, 11, 12

## Khmer

2713	H-Khmer 1	Grade 9, 10, 11, 12
2723	H-Khmer 2	Grade 9, 10, 11, 12
2733	H-Khmer 3	Grade 10, 11, 12
2743	H-Khmer 4	Grade 12

# Business Department

Stephen L. Gervais Jr., Department Chair

The Business Department offers a diverse range of electives that equip students with valuable, marketable skills in areas such as accounting, personal finance, marketing, entrepreneurship, and retail marketing customer service and sales. In addition, students have the opportunity to earn industry-recognized certifications in OSHA standards, National Retail Federation’s Customer Service and Sales.

Students may engage with the Business Department through multiple pathways: Business Marketing and Finance local Pathways as well as a Chapter 74\* Marketing program for rising Grade 10 students. These provide options for structured courses of study tailored to their specific interests and career goals. Alternatively, students may opt to enhance their education by selecting business-related courses as electives, allowing for a broader exploration of the business field.

## Business, Marketing and Finance

Grade 9	Grade 10	Grade 11	Grade 12
Business Explorations	Accounting	Accounting	Accounting
Marketing	Business Law	Business Law	Business Law
	Business Explorations	Business Explorations	Digital/Social Media Marketing
	Digital/Social Media Marketing	Digital/Social Media Marketing	Entrepreneurship Intro to Financial Services*
	Entrepreneurship	Entrepreneurship	Marketing
	Marketing	Marketing	Personal Finance
		Personal Finance	Retail Marketing*
		Sports & Entertainment Marketing	Sports & Entertainment Marketing

## **Business Explorations**

### **6230 Business Explorations**

**Level: College**

**Credits: 2.5**

**Prerequisites: None**

This is the perfect opportunity to explore the world of business. This course provides students with an opportunity to learn about Business, Entrepreneurship, Marketing, Business Law, and Accounting. Students will formulate their own business by working cooperatively with other members of the class. This is an engaging experience where collaboration, creativity, and critical thinking are the keys to a growth mindset needed by every member of our economy. *This course is intended for students who have not yet taken a business course.*

**Grade Level: 9, 10, 11**

**Fulfills: Elective**

## **Accounting**

### **6111/6113 Accounting**

**Level: College, Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: None**

Whether you are going to work for a small business, work for a multi-million-dollar company, a small business or start your own, you will always use financial skills. Accounting provides financial information to users for making decisions. In this detailed-oriented class, you will develop problem-solving, critical thinking, and financial literacy skills through a step-by-step instructional approach utilizing an Internet-based accounting program. You will learn accounting principles and practical applications as you experience the challenges of operating an event-planning service business.

**Grade Level: 10, 11, 12**

**Fulfills: Elective**

## **Business Law**

### **6211/6213 Business Law**

**Level: College, Honors**

**Credits: 2.5 (one semester)**

**Prerequisites: None**

You will enjoy this course if you have an interest in the law and how our legal system works. Over the semester, you will be introduced to both criminal and civil law along with the Bill of Rights. You will also learn about employment law and the various forms of business. Honors level classes will be participating in mock trials, allowing you to practice your courtroom skills. During the second semester the focus will be contract law along with consumer law; sales contracts; consumer protection laws; cyber law; cybercrime and E-Commerce through Internet transactions. You will also receive industry certification by completing the OSHA 10-hour training course, which is designed to teach workplace safety. *OSHA CERTIFICATION OPPORTUNITY*

**Grade Level: 10, 11, 12**

**Fulfills: Elective**

## Finance

### **6141/6143 Personal Finance**

**Level: College, Honors**

**Credits: 2.5 (one semester)**

**Prerequisites: None**

Personal Finance will enable you to take control of your financial destiny by educating yourself on how finances impact your daily life as well as your future. You will put into practice strategies to manage money responsibly, set financial goals, and make daily financial decisions that affect your life. Each week students will make decisions on how to spend their money such as how much they want to save, paying bills, using a credit card and buying class privileges or even points to help your grade!!! Your ability to manage money is going to be one of the biggest factors going forward, in this class you will have the opportunity to do just that. In the Honors level course you will do a deeper dive into Investing and retirement options.

**Grade Level: 11, 12**

**Fulfills: Elective**

### **6161 Intro to Financial Services (JDCU)**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: 10 credits of Business Courses and Permission of Dept. Chair**

Introduction to Financial Services will include the basic principles and practices of credit unions and the financial industry. You will be exposed to accounting, technology, clerical, and back-office tasks, as they develop confidence under the guidance of a credit union professional. Upon completion of this course, you will have a solid understanding of financial concepts and will possess employable skills including cash handling, member service interaction, organization, and teamwork. This authentic learning permits you to explore hands-on, real-life situations and problem-solving coupled with independent practice. PREREQUISITE: Successful completion of 10 CREDITS of business courses with a passing grade of 80 or above combined with good attendance and permission of the Department Chair or Branch Supervisor. \*Denotes capstone class with strict prerequisites.

**Grade Level: 12**

**Fulfills: Elective**

## Marketing

### **6309 Marketing**

**Level: College**

**Credits: 2.5 (one semester)**

**Prerequisites: None**

This course introduces you to the field of marketing. Marketing is the process of planning, pricing, promoting, selling, and distributing ideas, goods, and services to create exchanges that satisfy customers and return profits to the business. You will be introduced to content marketing, which is a strategic approach that focuses on creating and distributing valuable, relevant, and consistent content to attract and retain a clearly defined audience. That content will focus on the basic marketing functions; finance, market research, sales, and promotions which includes social media. The course addresses areas of publicity, advertisement design, visual merchandising, infographics, branding, and the selling process.

**Grade Level: 9, 10, 11, 12**

**Fulfills: Elective**

**6317 Digital/Social Media Marketing****Level: Honors****Credits: 2.5 (one semester)****Prerequisites: None**

Digital/Social Media Marketing prepares you for this evolving world of technology by providing foundational skills in digital marketing, social network platforms, and analytics. Tweets and emoji are terms that did not exist even a decade ago and yet they are now part of everyday speech and will be replaced by the next best technology trend. While technology trends come and go, longstanding marketing principles are embedded throughout the course so you learn to successfully navigate a continually changing environment while applying tried-and-true marketing methods. You will also create content while working for a fictional company in a simulation. A large portion of your grade will be dependent on how much Income and Impressions your content creates within the Simulation that you will be taking part in.

**Grade Level: 10, 11, 12****Fulfills: Elective****6321 Entrepreneurship****Level: Honors****Credits: 2.5 (one semester)****Prerequisites: None**

You will use your entrepreneurial skills and mindset to evolve a solution to a problem into a business opportunity. The classroom provides a fast-paced, engaging opportunity for you to work weekly in group investigations that require students to present to the class individually and in groups, knowledge explorations, and learning lab days to apply many of the 21st century soft skills needed by any future employee in our world. Towards the end of the semester, you will have opportunities to pitch your business opportunities to judges in local, regional, and national competitions. The course is run in partnership with the University of Massachusetts - Lowell.

**Grade Level: 10, 11, 12****Fulfills: Elective****6315 Retail Marketing****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: 7.5 Business credits, Recommendation**

This specialized hands-on course enables you to refine your business skills in a realistic business setting. Your laboratory is The 1826 School Store in which you will engage in marketing, merchandising, and management as you work directly with the public operating a small store. Due to the unique structure of this course. *Students can only take this course once. PREREQUISITE: Successful completion of 7.5 CREDITS of business courses with a passing grade of 80 or above or permission of Department Chair. NATIONAL RETAIL FEDERATION INDUSTRY CERTIFICATION OPPORTUNITY \*Denotes capstone class with strict prerequisites.*

**Grade Level: 12****Fulfills: Elective****6350 Sports & Entertainment Marketing****Level: College****Credits: 2.5 (one semester)****Prerequisites: None**

The focus of this course is the basic principles of marketing and how they relate specifically to the sports and entertainment industries. You will take part in a semester-long simulation where you are running a stadium, booking concerts, and setting ticket prices to maximize profits. You may also have a unique opportunity to create a marketing plan to present to a member of the New England Patriots Marketing staff as part of a field trip to Gillette Stadium.

**Grade Level: 10, 11, 12****Fulfills: Elective**

## Business Courses Quick Reference

6230	C-Business Explorations	Grade 9, 10, 11
6111	C-Accounting	Grade 10, 11, 12
6113	H-Accounting	Grade 10, 11, 12
6211	C-Business Law	Grade 10, 11, 12
6213	H-Business Law	Grade 10, 11, 12
6141	C-Personal Finance	Grade 11, 12
6143	H-Personal Finance	Grade 11, 12
6161	Intro to Financial Services (JDCU)	Grade 12
6309	C-Marketing	Grade 9, 10, 11, 12
6317	H-Digital/Social Media Marketing	Grade 10, 11, 12
6321	H-Entrepreneurship	Grade 10, 11, 12
6315	H-Retail Marketing	Grade 12
6350	C-Sports & Entertainment Marketing	Grade 10, 11, 12

# Culinary Department

Stephen L. Gervais Jr., Department Chair

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.

	<i>9th Grade</i>	<i>10th Grade</i>	<i>11th Grade</i>	<i>12th Grade</i>
<i>Culinary Electives</i>			<i>Culinary Arts – Intermediate</i>	<i>Culinary Arts - Advanced</i>
<i>Foods Electives</i>	<i>Science of Cooking/Nutrition and Dietary Choices</i>	<i>Science of Cooking/Nutrition and Dietary Choices</i>  <i>Regional Cuisine/International Foods</i>	<i>Science of Cooking/Nutrition and Dietary Choices</i>  <i>Regional Cuisine/International Foods</i>	<i>Science of Cooking/Nutrition and Dietary Choices</i>  <i>Regional Cuisine/International Foods</i>

# Culinary

## **5313 Culinary Arts - Intermediate**

**Level: Honors**

**Credits: 5 per semester/10 per year**

**Prerequisites: *Culinary Arts - Beginner***

Culinary Arts - Intermediate is a follow-up course to Culinary Arts Beginners. Students receive further instruction in food preparation for the Daniel P. Kane Courtyard Restaurant. Several college presentations will explore higher education opportunities in the culinary arts field. Students will update their personal portfolio and have the opportunity to become ServSafe certified, recognized by the National Restaurant Association. NOTE: This class meets every day for two periods.

MCC Articulation Agreement: Completion of 5311/5312 Culinary Arts - Beginner Systems, 5313/5314 Culinary Arts- Intermediate, and 5315/5316 Culinary Arts - Advanced with a minimum grade of 80 in each class.

**Grade Level: 11, 12**

**Fulfills: Elective**

## **5315 Culinary Arts - Advanced**

**Level: Honors**

**Credits: 5 per semester/10 per year**

**Prerequisites: *Culinary Arts - Intermediate***

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. NOTE: This class meets every day for two periods.

MCC Articulation Agreement: Completion of 5311/5312 Culinary Arts - Beginner Systems, 5313/5314 Culinary Arts- Intermediate, and 5315/5316 Culinary Arts - Advanced with a minimum grade of 80 in each class.

**Grade Level: 12**

**Fulfills: Elective**

## **6802 Internship**

**Level: Honors**

**Credits: 5 per semester**

**Prerequisites: *Approval of Department Chair***

High school internships allow students to explore their areas of interest, build skills, get prepared for college, and gain real-world work experience in a workplace environment. Students will be released from school to work with a company as they are exposed and participate in real world experiences in a business setting. Students will work with their counselors to find a proper fit and placement with a local company in their area of interest. NOTE: Coordinator and Parent approval needed to take this course. This is a 2-period course and runs Periods 6B & 7.

**Grade Level: 12**

**Fulfills:**

# Foods

## **5101 The Science of Cooking**

**Level: College**

**Credits: 2.5 (one semester)**

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.

**Grade Level: 9, 10, 11, 12**

**Fulfills: Elective**

**Prerequisites: None**

## **5102 Nutrition and Dietary Choices**

**Level: College**

**Credits: 2.5 (one semester)**

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.

**Grade Level: 9, 10, 11, 12**

**Fulfills: Elective**

**Prerequisites: None**

## **5103 Regional Cuisines**

**Level: College**

**Credits: 2.5 (one semester)**

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.

**Grade Level: 10, 11, 12**

**Fulfills: Graduation Requirement**

**Prerequisites: None**

## **5104 International Foods**

**Level: College**

**Credits: 2.5 (one semester)**

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.

**Grade Level: 10, 11, 12**

**Fulfills: Elective**

**Prerequisites: None**

# Foods and Culinary Courses Quick Reference

## Culinary

5313	Culinary Arts - Intermediate - Honors	Grade 11, 12
5315	Culinary Arts - Advanced - Honors	Grade 12
6802	Internship - Honors	Grade 12

**Culinary Arts classes are block classes and run for 2 periods**

## Foods

5101	The Science of Cooking - College	Grade 9, 10, 11, 12
5102	Nutrition and Dietary Choices - College	Grade 9, 10, 11, 12
5103	Regional Cuisine - College	Grade 10, 11, 12
5104	International Foods - College	Grade 10, 11, 12

# Fine & Performing Arts

Jessica Daviso, Department Chair

## Recommended Course Sequences in Fine & Performing Arts

The Fine and Performing Arts Department of Lowell Public Schools envisions a dynamic educational landscape where creativity, collaboration, and critical thinking converge to cultivate the artistic voices of every student. We are committed to fostering a transformative learning environment that emphasizes innovative practices and integrates the latest trends in education. Our curriculum is designed to enhance not only artistic skills and technical proficiency but also essential 21st-century competencies such as digital literacy, global awareness, and social-emotional development.

*Students in any grade may begin a sequence in the arts.*

	Year 1	Year 2	Year 3	Year 4
Choral Music	Show Choir Sound Impressions (mixed group) Show Choir Soundsations (female-only) Concert Choir (mixed group)			
Band	Beginner Band	Intermediate Band		Advanced Band
Instrumental Music	Beginner Piano Beginner Guitar	Intermediate Piano Intermediate Guitar		AP Music Theory
	Modern Music Percussion Ensemble			
General Music	Evolution of Hip Hop Music Technology & Engineering			AP Music Theory
Dance	Dance 1	Dance 2	Dance 3: Advanced Dance	Dance 4: Senior Dance Project
Studio Art	Art 1	Art 2: Drawing Art 2: Painting Art 2: Digital Photography Art 2: Sculpture		Art 3: Advanced Art
Digital Media	Digital Media 1		Digital Media 2	
	Radio & TV Broadcasting CTE			
Graphic Design	Introduction to Graphic Design		Visual Design I: Dual Enrollment MCC	
Theater	Theater I	Theater 2	Theater 3	
	Theater Design			

# Music Courses

## **7141 Concert & Marching Band - Beginner**

**Level: Honors**

**Credits: 5 per year**

**Prerequisites: none, placement based on ability**

Beginner and Intermediate sections of Concert/Marching Band include the same curriculum, but provide 2 levels of instruction targeted to students' needs. Any students looking to learn/perform on instruments traditionally found in a band are welcome to join. The LHS band performs at local community and regional competitive events. In this course, you will learn music theory, composition/arranging, and traditional band literature for the Winter Concert, Spring Concert, festival performance, and graduation. Student attendance for all in-school and out of school rehearsals and performances are MANDATORY course requirements.

**Meets the Health & PE Graduation Requirements.**

**Grade Level: 9,10,11,12**

**Fulfills: Health & PE Requirement**

## **7143 Concert & Marching Band - Intermediate**

**Level: Honors**

**Credits: 5 per year**

**Prerequisites: none, placement based on ability**

Beginner and Intermediate sections of Concert/Marching Band include the same curriculum, but provide 2 levels of instruction targeted to students' needs. Any students looking to learn/perform on instruments traditionally found in a band are welcome to join. The LHS band performs at local community and regional competitive events. In this course, you will learn music theory, composition/arranging, and traditional band literature for the Winter Concert, Spring Concert, festival performance, and graduation. Student attendance for all in-school and out of school rehearsals and performances are MANDATORY course requirements.

**Meets the Health & PE Graduation Requirements.**

**Grade Level: 10,11,12**

**Fulfills: Health & PE Requirement**

## **7144 Concert & Marching Band - Advanced**

**Level: High Honors**

**Credits: 5 per year**

This advanced level course builds on the curriculum taught in beginner and intermediate band, but caters to the needs of students who have been playing a band instrument 2 or more years. Any students looking to learn/perform on instruments traditionally found in a band are welcome to join. The LHS band performs at local community and regional competitive events. In this course, you will learn music theory, composition/arranging, and traditional band literature for the Winter Concert, Spring Concert, festival performance, and graduation. Student attendance for all in-school and out of school rehearsals and performances are MANDATORY course requirements.

**Meets the Health & PE Graduation Requirements.**

**Grade Level: 11,12**

**Fulfills: Health & PE Requirement**

**Prerequisites: Audition Only**

## **7121 Beginner Piano & Music Theory**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: none**

In Piano & Music 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 acquire basic music theory skills and knowledge to enhance their piano performance. This course is meant for students who have no piano and/or music theory experience. No prerequisites.

**Grade Level: 9,10,11,12**

**Fulfills: Graduation Requirement**

**7122 Intermediate Piano & Music Theory****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: Intro to Piano/Instructor Permission**

In Intermediate Piano, students will develop a deeper understanding of the piano in a lab setting. Each student will have access to a piano and will work at his/her own pace. Students will acquire intermediate music theory skills and knowledge to enhance their piano performance. This course is meant for students who have some understanding of the piano and music theory.

**Grade Level: 10,11,12****Elective****7131 Beginner Guitar & Music Theory****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: none**

In 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.

**Grade Level: 9,10,11,12****Fulfills: Graduation Requirement****7132 Intermediate Guitar & Music Theory****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: Intro to Guitar/Instructor Permission**

In Guitar 2, students will develop a deeper understanding of the guitar in a lab setting. Each student will have access to a guitar and will work at their own pace. Students will also acquire intermediate music theory skills and knowledge to enhance their guitar performance. This course is meant for students who have some understanding of the guitar and music theory.

**Grade Level: 10,11,12****Elective****7133 Percussion Ensemble****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: none**

In Percussion Ensemble, students will learn various techniques of percussion instruments through performing in small or large group performances. While the class is primarily a concert percussion setting you will study hand drumming, pitched percussion, drum set, drum line, body percussion, etc. The styles of music we perform will range from Contemporary, Classical, Drum Circles, and arrangements of Modern songs adapted for percussion instruments. Student attendance for all out of school performances are MANDATORY course requirements.

**Grade Level: 9,10,11,12****Fulfills: Graduation Requirement****7151 Modern Music****Level: Honors****Credits: 5 per year****Prerequisites: successful completion of 1 other music class**

Modern Music Class is an upper-level music elective. It is an opportunity to take your knowledge of an instrument/your voice to the next level by working in groups with classmates to learn songs and be exposed to a wide range of genres in modern music. Students will not only learn how to play in an ensemble setting, but how to arrange for a variety of instruments. Student attendance for all out of school performances are MANDATORY course requirements.

**Grade Level: 10,11,12****Fulfills: Graduation Requirement**

**7297 Show Choir Soundsations (female group)****Level: Honors****Credits: 5 per year****Prerequisites: Audition**

Show Choir Soundsations is a female-only performance-based class where students learn to prepare and perform a range of musical styles. Students learn how to add choreography to songs, as well as text interpretation, facial and body expression, and many performance skills. This co-curricular class includes mandatory afterschool and evening rehearsals, a variety of performances, 4-5 competitions, and a festival each year. There is a financial commitment that must be met for this group through fundraising.

**Meets the Health & PE Graduation Requirements.****Grade Level: 9,10,11,12****Fulfills: Health & PE Requirement****7299 Show Choir Sound Impressions (mixed group)****Level: Honors****Credits: 5 per year****Prerequisites: Audition**

Show Choir Sound Impressions is a performance-based class where students learn to prepare and perform a range of musical styles. Students learn how to add choreography to songs, as well as text interpretation, facial and body expression, and many performance skills. This co-curricular class includes mandatory afterschool and evening rehearsals, a variety of performances, 4-5 competitions, and a festival each year. This is an auditioned class. Students must perform independently or in small groups annually to determine placement in the group. There is a financial commitment that must be met for this group through fundraising.

**Meets the Health & PE Graduation Requirements.****Grade Level: 9,10,11,12****Fulfills: Health & PE Requirement****7339 Concert Choir****Level: Honors****Credits: 5 per year****Prerequisites: None**

Concert chorus is a mixed ensemble for all genders that performs music from various genres, time periods and languages. Students sing at the annual winter and spring concerts and other performance opportunities as they arise. There is no dance requirement for this ensemble and no prior experience is needed.

**Grade Level: 9,10,11,12****Fulfills: Graduation Requirement****7153 Evolution of Hip Hop****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: none**

Whether you're a fan of Tupac or Biggie, this course has something for everyone! Dive into the roots of rap music and explore its artistic, lyrical, and cultural impact on today's society. In this class, you'll transform your understanding of rap and Hip Hop, becoming an expert in the genre. Discover where rap began, explore graffiti art, learn about pioneering rap artists, DJs, and beatboxing, and experience The Evolution of Hip Hop like never before. Join us and embrace the rhythm, creativity, and legacy of one of the most influential music genres of our time!

**Grade Level: 9,10,11,12****Fulfills: Graduation Requirement****7361 Music Technology & Engineering****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: none**

Explore the intersection of music and technology in this hands-on course taught in a state-of-the-art digital piano lab. Students will learn the fundamentals of music production, sound engineering, and digital composition. Topics include MIDI sequencing, audio recording, editing, and mixing techniques, as well as creating original music using professional software and hardware. Whether you're a beginner or have prior

**Grade Level: 9,10,11,12****Fulfills: Graduation Requirement**

music experience, this course will help you develop the technical and creative skills needed to bring your musical ideas to life.

**7357 AP Music Theory**

**Level: Honors**

**Credits: 5 per year**

**Prerequisites: Successful completion of 2 instrumental music classes and permission of the instructor**

This course is designed to enhance your ability to recognize, understand, and describe the fundamental materials and processes of music, both aurally and visually. Through a blend of historical exploration and skill development, you will strengthen your aural skills, sight-singing, composition, and analytical abilities. Activities include listening, performing, writing, and creative exercises to deepen your understanding of music theory. You will master essential musical concepts, such as notating pitches, intervals, scales, keys, chords, meter, and rhythm, while improving your music reading and writing skills. Proficiency in reading and writing musical notation is critical for success, and it is highly recommended that students have basic performance experience with an instrument or voice.

**Grade Level: 11,12**

**Fulfills: Graduation Requirement**

## **Dance Courses**

**7905 Dance 1: Modern & Jazz Technique**

**Level: Honors**

**Credits: 5 per year**

**Prerequisites: None, must be taken in-sequence**

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. 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 the Health & PE Graduation Requirements.

**Grade Level: 9,10,11,12**

**Fulfills: Health & PE Requirement**

**7907 Dance 2: Technique & Composition**

**Level: Honors**

**Credits: 5 per year**

**Prerequisites: Successful completion of Dance 1**

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. 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.

Meets the Health & PE Graduation Requirements.

**Grade Level: 10,11,12**

**Fulfills: Health & PE Requirement**

**7953 Dance 3: Advanced Dance Studies****Level: Honors****Credits: 5 per year****Prerequisites: Successful completion of dance 2**

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.

Meets the Health & PE Graduation Requirements.

**Grade Level: 11,12****Fulfills: Health & PE Requirement****7983 Dance 4: Senior Dance Project****Level: Honors****Credits: 5 per year****Prerequisites: Successful completion of dance 3**

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.

Meets the Health & PE Graduation Requirements.

**Grade Level: 12****Fulfills: Health & PE Requirement**

## **Studio Art Courses**

**7513 Art 1: Introduction to Studio Art****Level: Honors****Credits: 2.5 per semester/5 per year****Prerequisites: None**

Art 1: Introduction to Art is the prerequisite art course that leads to all other courses in the visual arts pathway. Students will explore a variety of art mediums, tools, and techniques while developing foundational skills in drawing, painting, printmaking, and sculpture.

**Grade Level: 9,10,11,12****Fulfills: Graduation Requirement****7521 Art 2: Drawing****Level: Honors****Credits: 5 per year****Prerequisites: Art 1**

This intermediate-level visual art class explores 2D media, like pencil drawing, comic books, and fibers. In this course, students will explore various concepts and ideas from art history, create artworks in a variety of mediums, engage in critiques using the language of visual art, and build on their understanding of the Elements of Art & Principles of Design.

**Grade Level: 10,11,12****Fulfills: Graduation Requirement****7523 Art 2: Sculpture****Level: Honors****Credits: 5 per year****Prerequisites: Art 1**

This intermediate-level visual art class explores 3D forms of art making in clay, plaster, wire, wood, paper, and found objects. Students will create freestanding sculptures, reliefs, mobiles, stabiles, and constructions using both additive and subtractive sculptural processes. With an emphasis on studio production, this course is designed to develop technical skills through the creation of 3D artworks, build higher-level thinking skills through critique and self-assessment, grow an understanding of art history, and encourage the development of unique artistic voices.

**Grade Level: 10,11,12****Fulfills: Graduation Requirement**

**7529 Art 2: Digital Photography****Level: Honors****Credits: 5 per year****Prerequisites: Art 1**

This intermediate-level visual art class explores digital photography, photo manipulation, and editing. Students will explore the artistic qualities of modern digital photography, including the fundamentals of using a digital camera, computer, and printer to create unique images. Additionally, students will learn how to manipulate and transform their images using Adobe Photoshop and Lightroom. A study of professional digital photographers combines with hands-on projects to complement the technical coursework.

**Grade Level: 10,11,12****Fulfills: Graduation Requirement****7522 Art 2: Painting****Level: Honors****Credits: 5 per year****Prerequisites: Art 1**

This intermediate-level visual art class explores painting in all its forms, including watercolor and acrylic painting, printmaking, and the creation of large-scale murals. In this course, students will explore various concepts and ideas from art history, create artworks in a variety of mediums, engage in critiques using the language of visual art, and build on their understanding of the Elements of Art & Principles of Design.

**Grade Level: 10,11,12****Fulfills: Graduation Requirement****7543 Art 3: Advanced Art****Level: Honors****Credits: 5 per year****Prerequisites: Art 1 and 2 intermediate art courses**

Advanced Art is an advanced-level course for junior and senior students who are applying to art school, interested in an art-related career, or whose desire for intensive study in the visual arts will provide the self-motivation necessary to be successful in this year-long course. Students in Advanced Art will develop a body of work that demonstrates a broad understanding of various art mediums while cultivating a depth of artistic vision and creativity. This is an intensive course and students must show a commitment to the production of artworks at a rigorous pace. Students will build from an assignment-based curriculum to set independent goals for each of their final artworks. Students will develop college-ready portfolios that accurately reflect their technical and aesthetic expertise and unique artistic voices.

**Grade Level: 11,12****Fulfills: Graduation Requirement**

## **TV/Film & Digital Media Courses**

**7825 Digital Media 1: Introduction to Digital Media****Level: Honors****Credits: 5 per year****Prerequisites: none**

This class is for students who want to explore the creation of film, animation, TV, podcasting and other forms of digital media through hands-on experience. Students will learn the basics of creating and editing video, images and audio recordings. Students will utilize the Adobe Suite applications such as Photoshop, Illustrator and Premiere Pro.

**Grade Level: 9,10,11,12****Fulfills: Graduation Requirement**

**7827 Digital Media 2: Intermediate Film**

**Level: Honors**

**Credits: 5 per year**

**Prerequisites: Digital Media 1**

This is an intermediate level class. In this class students will gain the skills necessary to create independent films. The course will cover both documentary and narrative filmmaking. Students will be trained to utilize high-end digital video cameras, lighting fixtures and sound equipment. Students will take part in multiple roles of production including director, cinematographer, editor, visual effects artist and audio technician. Students' work will be created with the goal of submission to local and national film festivals.

**Grade Level: 10,11,12**

**Fulfills: Graduation Requirement**

## Graphic Design Courses

**7747 Graphic Design 1: Introduction to Graphic Design**  
**Level: Honors**  
**Credits: 5 per year**  
**Prerequisites: None**

**Grade Level: 9,10,11,12**  
**Fulfills: Graduation Requirement**

Graphic Design 1 merges the strength of solid principles of art and design with the technology of today. In this course, students will learn to manipulate, create and produce digital art forms using Adobe Illustrator and understand how to use the computer as a drawing tool. Students will understand the entire design process and take an idea from the concept state to the finished product. Students will be encouraged to express themselves artistically while discovering the powerful tools of digital technology. In the second semester, students will learn how to use the program Adobe Photoshop and understand how to manipulate and alter photos using the computer. While developing the basic principles of layout design and will take an in-depth look at typography as an art form. Students will be encouraged to develop a creative approach to computers and software as well as a discerning eye towards the visual message.

**7760 Visual Design 1 (EC-MCC)**  
**Level: Early College**  
**Credits: 5 per year**

**Grade Level: 10,11,12**  
**Fulfills: Graduation Requirement**

**Prerequisites: Graphic Design 1 with grade of 80% or higher, a score of 480 or better on the PSAT/SAT verbal test, and teacher recommendation**

In partnership with MCC, this advanced-level course provides an introduction to the basic elements and concepts of graphic design. Emphasis is on developing an ability to create cohesive and expressive designs using graphic principles as a basis. Assigned projects will be produced for presentation and in-class discussion.

## Theater Courses

**7411 Theater 1: Introduction to Theater**  
**Level: Honors**  
**Credits: 5 per year**  
**Prerequisites: None**

**Grade Level: 9,10,11,12**  
**Fulfills: Graduation Requirement**

Theater 1 is an overview of the dramatic and theatrical arts. Students will learn the basic foundations and techniques of acting, improvisation, character analysis, script analysis, and movement, developing ensemble and individual performance skills. Students will be required to perform regularly during class. Actors will focus on enhancing their skills through acting games, improvisation, scene work, and monologues. There is no after school commitment.

**7413 Theater 2: Intermediate Theater**  
**Level: Honors**  
**Credits: 5 per year**  
**Prerequisites: Theater 1**

**Grade Level: 9, 10,11,12**  
**Fulfills: Graduation Requirement**

Theater 2 is a performance-based course. Students will build upon basic foundations and techniques of acting, improvisation, character analysis, script analysis, and movement. Students will be required to perform regularly for the class. Actors will focus on enhancing their skills through rehearsing the school play/musical that will result in a performance at the end of the term. NOTE: Student attendance for all in-school and out of school rehearsals and performances are MANDATORY course requirements. This class prepares students for acting in the LHS drama and musical productions. Students wishing to appear in these events MUST be enrolled in Theater 3/4 or 5/6.

**7415 Theater 3: Advanced Theater**  
**Level: Honors**  
**Credits: 5 per year**  
**Prerequisites: Theater 2**

**Grade Level: 10,11,12**  
**Fulfills: Graduation Requirement**

Theater 3 is a performance-based course where students prepare repertoire for inclusion in the Massachusetts High School Drama Festival/ This competitive program takes place in March, and typically includes 112 one-act plays produced by member high schools. The competition is organized across three levels – preliminary, semi-final and State Finals. Two schools chosen from the State Finalists will go on to represent Massachusetts in the New England Drama Festival, the regional showcase of secondary school theater. At the beginning of the school year we will choose an existing one act play, cut a play, or devise a play. Class time from September through March will be devoted to creating/rehearsing and performing our play. Once Drama Fest is completed, we will begin working on a play for young audiences that we can either bring to local elementary schools or invite young audiences to come to us. This is a full school year commitment. NOTE: Student attendance for all in-school and out of school rehearsals and performances are MANDATORY course requirements. This class prepares students for acting in the LHS drama and musical productions. Students wishing to appear in these events MUST be enrolled in Theater 3/4 or 5/6.

**7425/7426 Theater Design Fall or Spring**  
**Level: Honors**  
**Credits: 2.5 per semester/5 per year**

**Grade Level: 9, 10,11,12**  
**Fulfills: Graduation Requirement**  
**Prerequisites: none**

Students in theater design will explore all aspects of theatrical lights, sound, scenic design, costuming, hair, and makeup. Through project based learning, students will learn to think like designers and gain creative and practical skills to carry out certain aspects of design. Some examples of projects and activities students will participate in are: special effects makeup design and application, how to draw the human form and face to effectively display costume and makeup design, the basics of how to operate a soundboard and light board, and collaborating with other students to create a fully realized design concept for a short play, which may be brought to life with actors from other theater classes. This class will give students the necessary skills to apply to be a designer or stage manager for the yearly school play and/or musical.

## Fine Arts Courses Quick Reference

7141	H-Concert & Marching Band - Beginner	Grade 9,10,11,12
7143	H-Concert & Marching Band - Intermediate	Grade 9,10,11,12
7144	H-Concert & Marching Band - Advanced	Grade 9,10,11,12
7121	H-Piano & Music Theory - Beginner	Grade 9,10,11,12
7122	H-Piano & Music Theory - Intermediate	Grade 9,10,11,12
7131	H-Guitar & Music Theory - Beginner	Grade 9,10,11,12
7132	H-Guitar & Music Theory - Intermediate	Grade 9,10,11,12
7133	H-Percussion Ensemble	Grade 9,10,11,12
7151	H-Modern Music	Grade 9,10,11,12
7297	H>Show Choir Soundsations (all female)	Grade 9,10,11,12
7299	H>Show Choir Sound Impressions (mixed)	Grade 9,10,11,12
7339	H-Concert Chorus	Grade 9,10,11,12
7153	H-Evolution of Hip Hop	Grade 9,10,11,12
7361	H-Music Technology & Engineering	Grade 9,10,11,12
7357	AP - AP Music Theory	Grade 11,12
7905	H-Dance 1 : Modern & Jazz Technique	Grade 9,10,11,12
7907	H-Dance 2: Technique & Composition	Grade 10,11,12
7953	H-Dance 3: Advanced Dance Studies	Grade 11,12
7983	H-Dance 4: Senior Dance Project	Grade 12
7513	H-Art 1: Introduction to Studio Art	Grade 9,10,11,12
7521	H-Art 2: Drawing	Grade 10,11,12
7522	H-Art 2: Painting	Grade 10,11,12
7523	H-Art 2: Sculpture	Grade 10,11,12
7529	H-Art 2: Digital Photo	Grade 10,11,12
7543	H-Art 3: Advanced Art	Grade 11,12
7825	H-Digital Media 1: Introduction to Digital Media	Grade 9,10,11,12
7827	H-Digital Media 2: Intermediate Film	Grade 10,11,12
7747	H-Graphic Design 1: Introduction to Graphic Design	Grade 9,10,11,12
7760	DE-Visual Design 1 (MCC)	Grade 10,11,12
7411	H-Theater 1: Introduction To Theater	Grade 9,10,11,12
7413	H-Theater 2: Intermediate Theater	Grade 10,11,12
7415	H-Theater 3: Advanced Theater	Grade 11,12
7425/7426	H-Theater Design Fall and Spring	Grade 9,10,11,12

# U. S. AIR FORCE JUNIOR ROTC AEROSPACE SCIENCE

Donald E. Felch, CMSgt, USAF (Retired)

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*.

# **Aerospace Science (AFJROTC)**

## **9321 AFJROTC 1: Aviation History**

**Level: Honors**

**Credits: 2.5 credits Per Semester/5 Credits**

**Prerequisites: None**

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.)*

**Grade Level: 9, 10, 11, 12**

**Fulfills: PE & Health Requirement**

## **9323 AFJROTC 2: Science of Flight**

**Level: Honors**

**Credits: 2.5 credits Per Semester/5 Credits**

**Prerequisites: AFJROTC 1**

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.*

**Grade Level: 10, 11, 12**

**Fulfills: PE & Health Requirement**

## **9325 AFJROTC 3: Life Skills/Careers**

**Level: Honors**

**Credits: 2.5 credits Per Semester/5 Credits**

**Prerequisites: AFJROTC 2**

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*

**Grade Level: 11, 12**

**Fulfills: PE**

**9337 AFJROTC 4 Principles of Management****Level: Honors****Credits: 2.5 credits Per Semester/5 Credits****Prerequisites: AFJROTC 3**

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*

**Grade Level: 12****Fulfills: PE Requirement****9327 AFJROTC 4 Management/Cadet Corps****Level: Honors****Credits: 2.5 credits Per Semester/5 Credits****Prerequisites: AFJROTC 3**

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.*

**Grade Level: 12****Fulfills: PE Requirement****9351 AFJROTC Flight Commander****Level: Honors****Credits: 2.5 credits Per Semester/5 Credits****Prerequisites: Dept Approval**

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.*

**Grade Level: 11,12****Fulfills: PE Requirement**

**9381 AFJROTC 4 Cadet Leadership****Level: Honors****Credits: 2.5 credits****Prerequisites: Department Approval**

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***Grade Level: 12****Fulfills: PE Requirement**

## AFJROTC Courses Quick Reference

9321	AFJROTC 1 - Aviation History	Grade 9, 10, 11, 12
9323	AFJROTC 2 - Science of Flight	Grade 10, 11, 12
9325	AFJROTC 3 - Life Skills/Careers	Grade 11, 12
9337	AFJROTC 4 - Principles of Management	Grade 12
9327	AFJROTC 4 - Management/Cadet Corps	Grade 12
9351	AFJROTC - Flight Commander	Grade 11, 12
9381	AFJROTC - Cadet Leadership Course	Grade 10, 11, 12

# Wellness

David Slattery, Department Chair

Massachusetts State Law requires all students to select physical education each year. At Lowell High School, students must complete and pass ten (10) credits in Wellness/Physical Education, as well as five (5) credits in Wellness/Health. The Wellness/Physical Education requirement may only be waived by the Head of School. The Lowell High School Wellness program includes both standalone Physical Education and Health courses. Each of these semester-long courses earns 2.5 credits. The Wellness program aligns with the Massachusetts Comprehensive Health and Physical Education Framework, SHAPE America National Standards, and Lowell High School's Portrait of a Graduate. Our department's mission is to foster a culture of well-being, empowering students to make healthy choices. Wellness is an active process that helps individuals achieve their best well-being by integrating all dimensions of wellness: physical, social, emotional, spiritual, intellectual, and occupational.

Physical activity plays a critical role in developing and maintaining a healthy lifestyle. Students will learn the value and importance of the five health-related components of physical fitness: Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility, and Body Composition. Additionally, students will gain a deeper understanding of the six domains of the Portrait of a Graduate: Mind, Heart, Spirit, Skill, Network, and Leadership.

The goal of this department is to equip students with the knowledge, skills, and confidence needed to lead a lifetime of healthy physical activity and make informed decisions. Upon completing the Wellness and Physical Education graduation requirements, students will demonstrate a comprehensive understanding of the following Massachusetts Comprehensive Health and Physical Education Framework Practices and Skills: **Practice 1:** Decision-Making and Problem Solving, **Practice 2:** Self-Management and Goal Setting, **Practice 3:** Social Awareness, Relationships, and Communication Skills, **Practice 4:** Movement Skills, **Practice 5:** Self-Awareness and Analyzing Influences, **Practice 6:** Information and Resource Seeking, **Practice 7:** Self-Advocacy and Health Promotion.

\* (NW) Non-Weighted

	<i>9th Grade</i>	<i>10th Grade</i>	<i>11th Grade</i>	<i>12th Grade</i>
	<i>Grade 9 Physical Education</i>	<i>Grade 10 Physical Education</i>	<i>Sports Fitness and Fusion</i>	<i>Sports Fitness and Fusion</i>
<i>Core Courses (NW)</i>	<i>Grade 9 Health</i>	<i>Grade 10 Health</i>	<i>Health 1 or 2</i>	<i>Health 1 or 2</i>
<i>Electives</i>	<i>N/A</i>	<i>N/A</i>	<i>Unified Physical Education</i>	<i>Unified Physical Education</i>

# Core Courses

**9151/9152 Grade 9 Physical Education and Health**  
**Level: Non-Weighted**  
**Credits: 2.5 per semester/5 per year**

**Grade Level: 9**  
**Fulfills grade 9 PE and Health Requirements**  
**Prerequisites: none**

## ***Grade 9 Physical Education and Grade 9 Health***

Wellness 1 consists of two standalone courses: Physical Education (FA) and Health 1, each lasting one semester and earning 2.5 credits. These courses are aligned with the Massachusetts Comprehensive Health and Physical Education Framework, SHAPE America National Standards, and Lowell High School's Portrait of a Graduate. The Wellness program is co-educational and integrates health and fitness education, emphasizing the development of skills and knowledge to support lifelong wellness. In the Health 1 course, students will explore the Dimensions of Health while engaging with current health topics such as nutrition, substance misuse, healthy relationships, sexual health, personal skills, and goal setting.

In the Physical Education 1 course, students will focus on the principles of human movement, personal fitness, introductory strength training, mindfulness, communication, decision-making, lifelong leisure activities, community building, and team sports. Together, these courses provide students with the fundamental skills and concepts to make healthy choices and live an active lifestyle. Completion of Wellness 1 satisfies both the health and physical education graduation requirements.

**9153/9154 Grade 10 Physical Education and Health**  
**Level: Non-Weighted**  
**Credits: 2.5 per semester/5 per year**

**Grade Level: 9R,10**  
**Fulfills grade 10 PE and Health Requirements**  
**Prerequisites: none**

## ***Physical Education is a Grade 10 requirement.***

Wellness 2 includes both standalone Physical Education and Health 2 courses. Each of these semester-long courses earns 2.5 credits. Wellness 2 aligns with the Massachusetts Comprehensive Health and Physical Education Framework, SHAPE America National Standards and Lowell High School's Portrait of a Graduate. This co-educational course integrates health and fitness, emphasizing personal development and addressing contemporary challenges faced by young adults. The curriculum spans personal fitness, strength training, cooperative games, intermediate-level team sports, and pertinent social and emotional issues. Building on the foundation of Wellness 1, students embark on a fitness journey by creating and adapting personalized strength training and fitness programs. They actively engage in intermediate-level team sports while also participating in expanded mindfulness activities. Additionally, students analyze their health choices and potential risks, refining decision-making skills through a skills-based curriculum, which delves into Social, Emotional, and Environmental Health. Social Health topics encompass discussions on dating, fostering healthy relationships, bullying prevention, and effective interpersonal skills. Other topics include Personal Health and Safety, Healthy Relationships/Social Health, and Public, Community & Environmental Health. Mental and Emotional Health modules focus on anxiety disorders, personality development, managing emotions, stress coping strategies, accessing mental health services, and fostering mental well-being. Environmental Health segments explore the impact of pollution on health, promoting recycling, conservation practices, and understanding their effects on well-being. Completion of Wellness 2 fulfills the health and physical education requirement.

**9161 Sports and Fitness Fusion**  
**Level: Non-Weighted**  
**Credits: 2.5**

**Grade Level: 11,12**  
**Fulfills PE Requirement**  
**Prerequisites: none**

Sports & Fitness Fusion is a course that aligns with the Massachusetts Comprehensive Health and Physical Education Framework, SHAPE America National Standards and Lowell High School's Portrait of a Graduate. This course blends different elements within our wellness curriculum. It combines team-based sports activities (basketball, soccer, volleyball,) including racket sports (badminton and pickleball) and health and fitness-related exercises or routines. This course combines both elements to create a comprehensive and well-rounded approach to wellness. Students may engage in team sports to foster collaboration, teamwork, and skill development, while also incorporating fitness exercises to promote overall health and physical fitness. Completion of Sports and Fitness Fusion fulfills the physical education requirement.

**9111/9112 Unified Physical Education**  
**Level: Non-Weighted**  
**Credits: 2.5 per semester/**

**Grade Level: 11,12**  
**Fulfills PE Requirement**

**Prerequisites: *Letter of recommendation from School Counselor and Department Head approval***

This course satisfies Sports and Fitness Fusion for grades 11 and 12 students. Unified Physical Education combines students of all abilities to fully participate in developmentally appropriate activities including lifetime activities, physical fitness and sport. UPE is designed for students who are interested in working with students who have cognitive or physical disabilities in an active setting. Students will work together to increase competence and confidence in a variety of developmental activities. Student partners will serve as teaching assistants and modeling peers for the students who have special needs. Students will work one-on-one and/or on small teams to support their special needs peers with developing and enhancing positive communication, social skills, fitness, game strategies, teamwork, & movement skills in a cooperative inclusive enriching environment to facilitate lifelong learning and relationships. The goal for interested students should be to provide a positive social & learning experience. The successful completion of Unified Physical Education fulfills the physical education requirement.

# Health

**9003 Health Gr 9 or Health 1**  
**Level: Non-Weighted**  
**Credits: 2.5**

**Grade Level: 11,12**  
**Fulfills PE Requirement**  
**Prerequisites: none**

This semester-long 2.5 credit course is aligned with the Massachusetts Comprehensive Health and Physical Education Framework and Lowell High School's Portrait of a Graduate. Students will learn about the Dimensions of Health including current health content and related personal skills and goal setting. Further learning experiences include the learning about Nutrition, Substance misuse, Healthy Relationships and Sexual Health. This course also covers mindfulness, communication and decision-making. Students will learn a combination of fundamental skills and concepts that encourage them to make healthy choices and live a life full of healthy activity. This course is aligned with the Massachusetts Comprehensive Health and Physical Education framework, and satisfies Health Education requirements.

**9006 Health Gr 10 or Health 2**  
**Level: Non-Weighted**  
**Credits: 2.5**

**Grade Level: 11,12**  
**Fulfills PE Requirement**  
**Prerequisites: none**

This semester-long, 2.5-credit course aligns with the Massachusetts Comprehensive Health and Physical Education Framework and Lowell High School's Portrait of a Graduate. Health 2 focuses on personal development and contemporary challenges faced by young adults, building upon the foundational knowledge from Health 1. The curriculum is designed to help students analyze their health choices and assess potential risks, refining their decision-making skills through a skills-based approach that covers Social, Emotional, and Environmental Health. Social Health topics include dating, developing healthy relationships, bullying prevention, and effective interpersonal skills. Additionally, students will explore Personal Health and Safety, Suicide Prevention, Healthy Relationships, and Public, Community, and Environmental Health. In the Mental and Emotional Health modules, students will learn about anxiety disorders, personality development, emotional management, stress coping strategies, accessing mental health services, and fostering mental well-being. Environmental Health sections will address the impact of pollution on health, promote recycling and conservation practices, and emphasize their effects on overall well-being. This course meets the Massachusetts Comprehensive Health and Physical Education standards and fulfills a Health Education graduation requirement.

# Physical Education, Wellness and Health Equivalent

Lowell High School recognizes that there are alternative approaches to receiving Physical Education, Wellness and Health content. Beginning in 2022-2023, our Wellness Equivalent classes will move to the integration of Physical Education and Health concepts and topics throughout the curriculum. Students taking a PE/Health Alternative class will receive credit for Physical Education and Health when completing the full year classes. Students taking Physical Education classes will still need to complete Health 1 and Health 2. Should a student only complete one year of a PE Equivalent class, they will need to take Physical Education and a Health Class to complete the Health Graduation Requirement

Dance 1: Modern & Jazz Technique	Grade 9, 10, 11, 12
Dance 2: Technique & Composition	Grade 10, 11, 12
Dance 3: Advanced Dance Studies & Choreography	Grade 11, 12
Dance 4: Senior Dance Project	Grade 12
Show Choir Soundsations (All Female)	Grade 9, 10, 11, 12
Show Choir Sound Impressions (Mixed Choir)	Grade 9, 10, 11, 12
Show Choir Sound Impressions Advanced	Grade 10,11,12
Concert & Marching Band - Beginner	Grade 9, 10, 11, 12
Concert & Marching Band - Intermediate	Grade 9, 10, 11, 12
Concert & Marching Band - Advanced	
AFJROTC 1 - Aviation History	Grade 9, 10, 11, 12
AFJROTC 2 - Science of Flight	Grade 10, 11, 12
AFJROTC 3 - Life Skills/Careers	Grade 11, 12
AFJROTC 4 - Management/Cadet Corps	Grade 12
AFJROTC 4 - Principles of Management	Grade 12
AFJROTC - Flight Commander	Grade 11, 12

## Wellness Courses Quick Reference

9151	Physical Education	Grade 9
9152	Health Grade 9	Grade 9
9153	Physical Education	Grade 9R,10
9154	Health Grade 10	Grade 9R,10
9161	Sports & Fitness Fusion	Grade 11, 12
9112	Unified Physical Education	Grade 11, 12
9003	Health 1	Grade 11, 12
9004	Health 2	Grade 11, 12

# Multilingual Education

**Erin Kehoe, Department Chair**

The **Multilingual Education Program** is designed to support students who speak diverse languages, promoting academic achievement, cultural appreciation, and bilingual or multilingual proficiency. The program provides targeted instruction in English language development while honoring and building upon students' home languages and cultural identities. Through a combination of specialized language instruction, integrated content learning, and culturally responsive teaching practices, the program equips students with the skills necessary to succeed academically and thrive in a global society.

The program values multilingualism as a strength, preparing students to become confident, capable, and culturally aware individuals who can contribute to their communities and succeed in an interconnected world.

	<i>9th Grade</i>	<i>10th Grade</i>	<i>11th Grade</i>	<i>12th Grade</i>
<b>Core Courses</b>	<i>English Language Development 1</i>	<i>English Language Development 1</i>	<i>English Language Development 1</i>	
	<i>English Language Development 2</i>	<i>English Language Development 2</i>	<i>English Language Development 2</i>	
	<i>English Language Development 3</i>	<i>English Language Development 3</i>	<i>English Language Development 3</i>	<i>English Language Development 3</i>
	<i>English Language Development 4</i>	<i>English Language Development 4</i>	<i>English Language Development 4</i>	<i>English Language Development 4</i>
<b>Newcomer Program</b>	<i>English Language Development 1</i> <i>Algebra 1*</i> <i>Integrated Science and Engineering*</i> <i>World History*</i>	<i>English Language Development 1</i> <i>Algebra 1 OR Geometry*</i> <i>Biology*</i> <i>US History I*</i>		

*\*Courses taught by content teachers within the Math, Science, and Social Studies departments. Course descriptions located within the Math, Science, and Social Studies Department sections of this Program of Studies*

**Notes:**

Placement in English Language Development (ELD) courses is determined by a student's English proficiency level and grade level. Students who score between 1.0 and 2.9 on the ACCESS Test or WIDA Screener will receive double-block ELD instruction each day to support their language development needs. Students scoring 3.0-4.2\* will be placed in a single-block ELD course per day. All other instruction will take place in the general education setting.

\*Exit criteria for ELD courses is an ACCESS score of 4.2 overall and 3.9 literacy.

The Newcomer Program is designed for students in the early stages of English language acquisition who have been in the U.S. for one year or less and have an English Proficiency level between 1.0-1.9. The program includes double-block English Language Development (ELD) instruction, along with grade-level Math, Science, and Social Studies taught in sheltered classrooms to support both content learning and language development.

SLIFE is designed for Students with Limited or Interrupted Formal Education. Over the course of two years, the courses provide intensive literacy and numeracy instruction to equip students with the skills needed for success in grade-level courses and everyday life.

## Core Courses

### **0721/0722/0723/0724 English Language Development 1**

**Grade Level: 9-12**

**Level: College**

**Fulfills: ELA Graduation Requirement**

**Credits: 10 credits**

**Prerequisites: Placement is based on English Proficiency Levels between 1.0-1.9.**

ELD 1 is designed for students who are in the early stages of English language acquisition. This two-period course fulfills EL and English requirements focusing on developing foundational skills in listening, speaking, reading, and writing, guided by the WIDA CAN DO Descriptors. Instruction emphasizes building basic interpersonal communication skills and gaining the academic language necessary to support students' academic growth and social interactions in English.

### **0725/0726/0727/0728 English Language Development 2**

**Grade Level: 9-12**

**Level: College**

**Fulfills: ELA Graduation Requirement**

**Credits: 10 credits**

**Prerequisites: Placement is based on English Proficiency Levels between 2.0-2.9.**

ELD 2 is designed for students with limited English proficiency. This two-period course fulfills EL and English requirements focusing on further developing skills in listening, speaking, reading, and writing, following the WIDA CAN DO Descriptors. Instruction emphasizes enhancing both interpersonal communication and academic language skills. Students engage in projects and content-based materials to strengthen their English proficiency. Knowledge and control of basic grammatical structures are reinforced, while more complex grammar is introduced. Students work with increasingly challenging reading materials and academic tasks to prepare for success in diverse educational contexts.

### **0729/0730/0731/0732 English Language Development 3**

**Grade Level: 9-12**

**Level: College**

**Fulfills: Elective Graduation Requirement**

**Credits: 5 credits**

**Prerequisites: Placement is based on English Proficiency Levels of 3.0 and above.**

ELD 3 is designed for students transitioning to everyday and academic use of the English language. The curriculum aligns with the Massachusetts English Language Arts Curriculum Frameworks and incorporates the WIDA CAN DO Descriptors. There is an emphasis on advanced grammar review, vocabulary development, and composition techniques, with a focus on expository and creative writing. Students are introduced to a survey of literary forms commonly encountered in mainstream college-level courses, including mythology, novels, short stories, drama, poetry, nonfiction essays, biographies, and autobiographies. Instruction supports students in refining their language skills while deepening their appreciation of diverse literary genres.

### **0733/0734/0735/0736 English Language Development 4**

**Grade Level: 9-12**

**Level: College**

**Fulfills: Elective Graduation Requirement**

**Credits: 5 credits**

**Prerequisites:**

ELD 4 is designed for English Learners at the Expanding level and/or have been studying English in the U.S. for more than five years but have not yet met the EL exit criteria on the ACCESS Test. This course provides targeted instruction in the four language domains: listening, speaking, reading, and writing, with a particular emphasis on developing productive academic language skills. Students engage with novels and other complex texts while advancing their writing abilities through the creation of longer, essay-length pieces. Instruction focuses on preparing students for success in academic settings by refining their critical thinking, analytical writing, and advanced communication skills.

## **Newcomer Program Courses**

**0741 English Language Development 1**

**Grade Level: 9-12**

**Level: College**

**Fulfills: ELA Graduation Requirement**

**Credits: 10 credits**

**Prerequisites: Year one of US schooling and English proficiency level between 1.0-1.9**

This course is designed for students who are in the early stages of English language acquisition, with an ACCESS score of 1.0-1.9 and who have been in the U.S. for one year or less. This double block course fulfills EL and English requirements focusing on developing foundational skills in listening, speaking, reading, and writing guided by the WIDA CAN DO Descriptors. Instruction emphasizes building basic interpersonal communication skills and gaining the academic language necessary to support students' academic growth and social interactions in English.

## **SLIFE Program Courses (pending DESE approval)**

# Multilingual Education Courses Quick Reference

## English Acquisition

0721/0722/0723/0724	English Language Development 1
0725/0726/0727/0728	English Language Development 2
0729/0730/0731/0732	English Language Development 3
0733/0734/0735/0736	English Language Development 4

## Newcomer Program

0741	English Language Development 1
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# Special Education

Allyson M. Carbone, Department Chair

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. All courses, with the exception of Special Education Intern, require a corresponding IEP service.

## Core Courses and Supports - Inclusion/Fundamentals

	9th Grade	10th Grade	11th Grade	12th Grade
<b>Core Courses</b>	<b>Inclusion:</b> Algebra 1  English 1  Survey of World History  Integrated Science and Technology	<b>Inclusion:</b> Geometry  English 2  US History 1  Biology	<b>Inclusion:</b> Math 3  English 3  US History 2  Conceptual Chemistry	<b>Inclusion:</b> English 4
	<b>Fundamentals:</b> Foundations for Algebra 1  Fundamentals of English 1  Fundamentals of World History  Explorations in Life Science	<b>Fundamentals:</b> Fundamentals of Algebra 1  Fundamentals of English 2  Fundamentals of US History 1  Fundamentals of Biology	<b>Fundamentals:</b> Fundamentals of Geometry  Fundamentals of English 3  Fundamentals of US History 2  Fundamentals of Anatomy and Physiology	<b>Fundamentals:</b> Math 3  Fundamentals of English 4

<b>Additional Supports</b>	Instructional Support 1 Transitional Seminar 1 Reading	Instructional Support 2 Transitional Seminar 1 Reading	Instructional Support 3/4 Transitional Seminar 2 Reading
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## Core Courses - Adjustment Program

	9th Grade	10th Grade	11th Grade	12th Grade
<b>Core Courses</b>	Foundations for Algebra 1 Fundamentals of English 1 Fundamentals of World History Explorations in Life Science Civil Liberties Health PE	Fundamentals of Algebra 1 Fundamentals of English 2 Fundamentals of US History 1 Fundamentals of Biology Social Dynamics PE	Fundamentals of Geometry Fundamentals of English 3 Fundamentals of US History 2 Fundamentals of Anatomy and Physiology Social Dynamics PE	Math 3 Fundamentals of English 4

## Core Courses - LEAP/CSA/PACE

	9th Grade	10th Grade	11th Grade	12th Grade	SP (18-22)
<b>Core Courses</b>	Functional English Language Arts	Functional English Language Arts	Real World Math	Real World Math	Real World Math
	Functional Math	Functional Math	Functional Literacy	Functional Literacy	Functional Literacy
	Functional Science	Functional Science	Health Activities of Daily Living	Health Activities of Daily Living	Activities of Daily Living
	Activities of Daily Living	Activities of Daily Living	Recreation and Leisure	Recreation and Leisure	Vocational Education (double block)
	Pre-Vocational Education	Pre-Vocational Education	Vocational Education	Vocational Education	Social Dynamics
	PE - Adaptive	PE - Adaptive	PE - Adaptive	PE - Adaptive	
	Social Dynamics	Social Dynamics	Social Dynamics	Social Dynamics	

## Core Courses - Fundamentals

**8000 Fundamentals of English 1**

**Grade Level: 9**

**Level: College**

**Fulfills: Graduation Requirement**

**Credits: 2.5 per semester/5 per year**

Fundamentals of English 1 offers students an introduction to the various genres of literature. The genres will include the short story, the novel, and works of non-fiction such as essays, biography and autobiography. These readings will be accompanied by selected outside reading titles. There will be a strong emphasis on pre-reading and reading strategies, as well as writing and the writing process, including essay writing, grammar, paragraph development, sentence variety, and text referencing. Students will develop a knowledge and understanding of vocabulary and specific literary terms in conjunction with the writing and literary components of the course. Students will continue to build vocabulary and specific literary terms in conjunction with the writing and literary components of the course. This course satisfies an English graduation requirement.

**8001 Fundamentals of English 2****Level: College****Credits: 2.5 per semester/5 per year**

This spiraled course explores various genres of American literature. One year focuses more on short stories and the novel, while the second year focuses on increasing levels of competence in mechanics, content, organization, and style in a variety of writing situations. Both years provide students with opportunities to develop critical thinking skills along with strategies to further develop skills in reading, speaking, and writing.

**Grade Level: 10****Fulfills: Graduation Requirement****8002 Fundamentals of English 3****Level: College****Credits: 2.5 per semester/5 per year**

As a continuation of Fundamentals of English 3, this spiraled course explores various genres of American literature. One year focuses more on short stories and the novel, while the second year focuses on increasing levels of competence in mechanics, content, organization, and style in a variety of writing situations. Both years provide students with opportunities to develop critical thinking skills along with strategies to further develop skills in reading, speaking, and writing.

**Grade Level: 11****Fulfills: Graduation Requirement****8003 Fundamentals of English 4****Level: College****Credits: 2.5 per semester/5 per year**

Fundamentals of English 4 introduces students to British Literature, through a survey of works tracing the evolution of English Language and Literature. The course will place an emphasis on improving the skills of critical analysis, both oral and written, with particular attention paid to improving the content, form and style of student writing. This course also offers students the opportunity to create a resume and practice interview skills. This course satisfies an English graduation requirement.

**Grade Level: 12****Fulfills: Graduation Requirement****8200 Foundations for Algebra 1****Level: College****Credits: 2.5 per semester/5 per year**

This course, designed for grade 9 students, solidifies the prerequisite skills needed for Algebra 1. Students can expect to develop an understanding of operations with rational numbers along with working with expressions and linear equations. Individual student needs and specific gaps in mathematical skills will also be addressed through this course.

**Grade Level: 9****Fulfills: Graduation Requirement****8210 Fundamentals of Algebra 1****Level: College****Credits: 2.5 per semester/5 per year**

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 solutions of quadratic equations, expressions, and graphing. S

**Grade Level: 10****Fulfills: Graduation Requirement****8220 Fundamentals of Geometry****Level: College****Credits: 2.5 per semester/5 per year**

Geometry **includes** proof and logic 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. 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.

**Grade Level: 11****Fulfills: Graduation Requirement**

**8230 Math 3**  
**Level: College**

**Grade Level: 12**  
**Fulfills: Graduation Requirement**

**Credits: 2.5 per semester/5 per year**

Math 3 is for Juniors/Seniors and will reinforce problem solving skills by working with Real Numbers, Equations, Simplification of Algebraic Expressions, Functions, Inequalities, Systems of Equations, Graph Theory, Quadrilaterals and Polygons. This course is designed to target instruction for each student in the areas where they need the most help.

**8300 Explorations in Life Science**  
**Level: College**

**Grade Level: 9**  
**Fulfills: Graduation Requirement**

**Credits: 2.5 per semester/5 per year**

Science introduces 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.

**8310 Fundamentals of Biology**  
**Level: College**

**Grade Level: 10**  
**Fulfills: Graduation Requirement**

**Credits: 2.5 per semester/5 per year**

Biology provides 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.

**8320 Fundamentals of Anatomy and Physiology**  
**Level: College**

**Grade Level: 11**  
**Fulfills: Graduation Requirement**

**Credits: 2.5 per semester/5 per year**

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 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. Meets Lab Science Standards, Meets Lab Science standards

**8100 Fundamentals of World History**  
**Level: College**

**Grade Level: 9**  
**Fulfills: Graduation Requirement**

**Credits: 2.5 per semester/5 per year**

Topics in World History begins 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.

**8110 Fundamentals of US History 1**  
**Level: College**

**Grade Level: 10**  
**Fulfills: Graduation Requirement**

**Credits: 2.5 per semester/5 per year**

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

**8120 Fundamentals of US History 2****Level: College****Credits: 2.5 per semester/5 per year**

This course emphasizes the major events in the history of the United States from World War 1 to present day. 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

**Grade Level: 12****Fulfills: Graduation Requirement**

## **Support Courses**

**8845 Instructional Support 1****Level: College****Credits: 2.5 per semester/5 per year**

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 work to meet graduation requirements. Students work with their special education teachers to prepare for self-advocacy at IEP meetings as they make decisions about signing rights

**Grade Level: 9****8846 Instructional Support 2****Level: College****Credits: 2.5 per semester/5 per year**

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 work to meet graduation requirements. Students work with their special education teachers to prepare for self-advocacy at IEP meetings as they make decisions about signing rights

**Grade Level: 10****8847 Instructional Support 3****Level: College****Credits: 2.5 per semester/5 per year**

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 work to meet graduation requirements. Students work with their special education teachers to prepare for self-advocacy at IEP meetings as they make decisions about signing rights. With guidance and support, students seek out and set up services that will help them after graduation such as setting up accommodations and supports for college, MRC referrals and/or take entrance tests for college or military training programs. Many students learn to set up bank accounts, learn to do their income taxes for the first time, register to vote/military service, and gather information needed to register for college, apply for financial aid and acquire recommendations needed for college entry/scholarships.

**Grade Level: 11**

**8848 Instructional Support 4****Grade Level: 12****Level: College****Credits: 2.5 per semester/5 per year**

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 work to meet graduation requirements. Students work with their special education teachers to prepare for self-advocacy at IEP meetings as they make decisions about signing rights. With guidance and support, students seek out and set up services that will help them after graduation such as setting up accommodations and supports for college, MRC referrals and/or take entrance tests for college or military training programs. Many students learn to set up bank accounts, learn to do their income taxes for the first time, register to vote/military service, and gather information needed to register for college, apply for financial aid and acquire recommendations needed for college entry/scholarships.

**Reading****Grade Level: 9, 10, 11, 12****Level: College****Credits: 2.5 per semester/5 per year**

Literacy 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. There is a computer component to this course.

**8700 Transitional Seminar 1****Grade Level: 9, 10****Level: College****Credits: 2.5 per semester/5 per year**

Students experience many transitions, both predictable and unique to individual circumstances, in life. The transition to high school is no different and executive functioning and social skills are all the more critical as students begin to articulate their own post-secondary goals. Transitional Seminar 1 is designed for students in grades 9 and 10, with topics including understanding self-determination; being self-aware of personal strengths and areas of need; developing interpersonal and communication skills; making good decisions; social awareness; and understanding disability rights and responsibilities while in high school. Given support, students will learn to integrate and generalize the skills taught in both their classes and in the "real world" setting, leading towards the goal of increasing independence and assimilation into the larger community.

**8720 Transitional Seminar 2****Grade Level: 11,12****Level: College****Credits: 2.5 per semester/5 per year**

This course is designed to help students as they transition from high school to the adult world. Topics include self-advocacy, community awareness, access to resources, goal development, problem-solving strategies, and soft skills. Students will be given the opportunity to integrate and generalize the skills taught, and will increase their capacity to assimilate into the community.

# Adjustment Courses

## **8000 Fundamentals of English 1**

**Level: College**

**Credits: 2.5 per semester/5 per year**

Fundamentals of English 1 offers students an introduction to the various genres of literature. The genres will include the short story, the novel, and works of non-fiction such as essays, biography and autobiography. These readings will be accompanied by selected outside reading titles. There will be a strong emphasis on pre-reading and reading strategies, as well as writing and the writing process, including essay writing, grammar, paragraph development, sentence variety, and text referencing. Students will develop a knowledge and understanding of vocabulary and specific literary terms in conjunction with the writing and literary components of the course. Students will continue to build vocabulary and specific literary terms in conjunction with the writing and literary components of the course. This course satisfies an English graduation requirement.

**Grade Level: 9**

**Fulfills: Graduation Requirement**

## **8001 Fundamentals of English 2**

**Level: College**

**Credits: 2.5 per semester/5 per year**

This spiraled course explores various genres of American literature. One year focuses more on short stories and the novel, while the second year focuses on increasing levels of competence in mechanics, content, organization, and style in a variety of writing situations. Both years provide students with opportunities to develop critical thinking skills along with strategies to further develop skills in reading, speaking, and writing.

**Grade Level: 10**

**Fulfills: Graduation Requirement**

## **8002 Fundamentals of English 3**

**Level: College**

**Credits: 2.5 per semester/5 per year**

As a continuation of Fundamentals of English 3, this spiraled course explores various genres of American literature. One year focuses more on short stories and the novel, while the second year focuses on increasing levels of competence in mechanics, content, organization, and style in a variety of writing situations. Both years provide students with opportunities to develop critical thinking skills along with strategies to further develop skills in reading, speaking, and writing.

**Grade Level: 11**

**Fulfills: Graduation Requirement**

## **8003 Fundamentals of English 4**

**Level: College**

**Credits: 2.5 per semester/5 per year**

Fundamentals of English 4 introduces students to British Literature, through a survey of works tracing the evolution of English Language and Literature. The course will place an emphasis on improving the skills of critical analysis, both oral and written, with particular attention paid to improving the content, form and style of student writing. This course also offers students the opportunity to create a resume and practice interview skills. This course satisfies an English graduation requirement.

**Grade Level: 12**

**Fulfills: Graduation Requirement**

## **8200 Foundations for Algebra 1**

**Level: College**

**Credits: 2.5 per semester/5 per year**

This course, designed for grade 9 students, solidifies the prerequisite skills needed for Algebra 1. Students can expect to develop an understanding of operations with rational numbers along with working with expressions and linear equations. Individual student needs and specific gaps in mathematical skills will also be addressed through this course.

**Grade Level: 9**

**Fulfills: Graduation Requirement**

**8210 Fundamentals of Algebra 1****Level: College****Credits: 2.5 per semester/5 per year**

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 solutions of quadratic equations, expressions, and graphing. S

**Grade Level: 10****Fulfills: Graduation Requirement****8220 Fundamentals of Geometry****Level: College****Credits: 2.5 per semester/5 per year**

Geometry **includes** proof and logic 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. 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.

**Grade Level: 11****Fulfills: Graduation Requirement****8230 Math 3****Level: College****Credits: 2.5 per semester/5 per year**

Math 3 is for Juniors/Seniors and will reinforce problem solving skills by working with Real Numbers, Equations, Simplification of Algebraic Expressions, Functions, Inequalities, Systems of Equations, Graph Theory, Quadrilaterals and Polygons. This course is designed to target instruction for each student in the areas where they need the most help.

**Grade Level: 12****Fulfills: Graduation Requirement****8300 Explorations in Life Science****Level: College****Credits: 2.5 per semester/5 per year**

Science introduces 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.

**Grade Level: 9****Fulfills: Graduation Requirement****8310 Fundamentals of Biology****Level: College****Credits: 2.5 per semester/5 per year**

Biology provides 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.

**Grade Level: 10****Fulfills: Graduation Requirement****8320 Fundamentals of Anatomy and Physiology****Level: College****Credits: 2.5 per semester/5 per year**

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 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. Meets Lab Science Standards, Meets Lab Science standards

**Grade Level: 11****Fulfills: Graduation Requirement**

**8100 Fundamentals of World History****Level: College****Credits: 2.5 per semester/5 per year**

Topics in World History begins 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.

**Grade Level: 9****Fulfills: Graduation Requirement****8110 Fundamentals of US History 1****Level: College****Credits: 2.5 per semester/5 per year**

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

**Grade Level: 10****Fulfills: Graduation Requirement****8120 Fundamentals of US History 2****Level: College****Credits: 2.5 per semester/5 per year**

This course emphasizes the major events in the history of the United States from World War 1 to present day. 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

**Grade Level: 12****Fulfills: Graduation Requirement****8130 Civil Liberties****Level: College****Credits: 2.5 per semester/5 per year**

Introduction to Civil Liberties 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.

**Grade Level: 9, 10****Fulfills: Graduation Requirement****8410 Physical Education****Level: College****Credits: 2.5 per semester/5 year**

Physical Education offers students the opportunity to gain an understanding of the value of leading a physically active lifestyle. Students will also learn the benefits that activity provides toward physical, emotional and social growth. A healthy, physically active student is more likely to be academically motivated, alert and capable of coping with the stress of day to day life. The goal of this program will be to help students achieve success in school by encouraging consistent participation in physical activity. In addition, units provide an introduction to the rules, skills and strategies of Basketball, Cardio-Vascular Fitness, Cooperative Games, Strength Training, Racquet Sports, Volleyball and Elective Activities.

**Grade Level: 9, 10, 11****Fulfills: Graduation Requirement**

**9003 Health****Level: College****Credits: 2.5 per semester/5 year**

Health Education includes such topics as wellness, physical health, social health, emotional health, your changing personality, the human body and its systems, nutrition, fitness, drugs as medicines, introduction to substance abuse, tobacco, infectious disease, accident and injury prevention and emergency measures, and lifestyle diseases (diabetes, cancer, cardiovascular disease).

**Grade Level: 9****Fulfills: Graduation Requirement****8600 Social Dynamics****Level: College****Credits: 2.5 per semester/5 year**

Social Dynamics 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.

**Grade Level: 10, 11**

## **LEAP/CSA Courses**

*Courses within the LEAP/CSA program are unweighted and do not meet standard graduation requirements.*

**8004 Functional English Language Arts****Grade Level: 9, 10**

Functional ELA 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 throughout the curriculum.

**8250 Functional Mathematics****Grade Level: 9, 10**

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.

**8340 Functional Science****Grade Level: 9, 10**

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

**8420 Pre-Vocational Education****Grade Level: 9, 10**

Students will explore employment choices through identifying employment interests, aptitudes, realistic employment requirements, and areas of employment need. Students will also classify jobs into categories and investigate local employment and training opportunities, along with practicing job application and interview skills. This course also provides instruction in the soft skills needed for successful employment.

**8830 Recreation and Leisure****Grade Level: 11, 12**

Recreation and leisure activities provide students with opportunities for community involvement, increase the development of friendships, and increase self-confidence. It is critical for all students to have knowledge of possible leisure activities and available resources. As part of the Recreation and Leisure course, students will explore, choose, and plan a variety of recreational and leisure activities. Through engaging in a variety of group activities, students will learn the value of recreation.

**9003/9006 Health****Grade Level: 11, 12**

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.

**8005 Functional Literacy****Grade Level: 11, 12, SP**

This course focuses on the reading and writing skills students will need to meet the demands of both daily living and the workforce. Understanding printed messages is essential for students to successfully negotiate society. Students will learn strategies to read labels, advertisements, written instructions, signs, paychecks, bills, and more

**8260 Real World Math****Grade Level: 11, 12, SP**

Students will learn about and practice mathematical concepts used in everyday living. Attention will be paid to identifying currency, using money to pay for products/services, using banking services, making basic measurements, and telling time. Students will have opportunities to use and apply mathematical concepts while participating in community activities

**8850 Activities of Daily Living****Grade Level: 9, 10, 11, 12, SP**

Students will develop the life skills required to live as independently as possible. Topics include selecting, setting up, and maintaining a household; meal planning and preparation; and purchasing and caring for clothes. Students will also learn how to address a variety of personal needs, including personal grooming, medical issues, dressing appropriately, and safety.

**8600 Social Dynamics for LEAP/CSA****Grade Level: 9, 10, 11, 12, SP**

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.

**8450 Vocational Education****Grade Level: 9, 10, 11, 12, SP**

Through participating in various internships and work opportunities throughout the school and community, students will demonstrate proficiency in following directions, meeting various job standards, solving job-related problems, and working with others. Students will also continue to practice searching, applying, and interviewing for jobs.

**9133/9134 Physical Education - Adaptive****Grade Level: 9, 10, 11, 12, SP**

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.

# Special Education Courses Quick Reference

8000	Fundamentals of English 1	Grade 9
8001	Fundamentals of English 2	Grade 10
8002	Fundamentals of English 3	Grade 11
8003	Fundamentals of English 4	Grade 12
8100	Fundamentals of World History	Grade 9
8110	Fundamentals of US History 1	Grade 10
8120	Fundamentals of US History 2	Grade 11
8130	Civil Liberties	Grade 9, 10
8200	Foundations for Algebra	Grade 9
8210	Fundamentals of Algebra 1	Grade 10
8220	Fundamentals of Geometry	Grade 11
8230	Fundamentals of Math 3	Grade 12
8300	Explorations in Life Science	Grade 9
8310	Fundamentals of Biology	Grade 10
8320	Fundamentals of Anatomy & Physiology	Grade 11, 12
8004	Functional ELA	Grade 9, 10, 11, 12
8005	Functional Literacy	Grade 9, 10, 11, 12
8006	Reading	Grade 9, 10, 11, 12
8240	Financial Math	Grade 9, 10, 11, 12
8250	Functional Math	Grade 9, 10, 11, 12
8260	Real World Math	Grade 9, 10, 11, 12
8330	Science	Grade 9, 10, 11, 12
8340	Functional Science	Grade 9, 10, 11, 12
8410	Physical Education	Grade 9, 10, 11, 12
8420	Pre-Vocational Education	Grade 9, 10, 11, 12
8450	Vocational Education	Grade 9, 10, 11, 12
8600	Social Dynamics	Grade 9, 10, 11, 12
8700	Transitional Seminar 1	Grade 9, 10, 11, 12
8720	Transitional Seminar 2	Grade 9, 10, 11, 12
8830	Recreation and Leisure	Grade 9, 10, 11, 12
8850	Activities of Daily Living	Grade 9, 10, 11, 12
9111	Unified Physical Education A	Grade 9, 10, 11, 12
9112	Unified Physical Education B	Grade 9, 10, 11, 12
9133	Adaptive Physical Education A	Grade 9, 10, 11, 12
9134	Adaptive Physical Education B	Grade 9, 10, 11, 12
8845	Instructional Support 1	Grade 9
8846	Instructional Support 2	Grade 10
8847	Instructional Support 3	Grade 11
8848	Instructional Support 4	Grade 12
6811	Special Education Aide	Grade 11,12

# Career and Technical Education (CTE)

\*Subject to Department of Elementary & Secondary Education CTE approval.

Lowell High School's new Career and Technical Education (CTE) programs are designed for students who are interested in hands-on learning and specialized career pathways. As a comprehensive high school, Lowell High School offers students the opportunity to combine rigorous academic coursework with focused CTE program study.

Students are introduced to CTE programs through a ninth-grade exploratory experience, during which they learn about each program and the career opportunities associated with each field. Students may apply to up to three CTE programs. When the number of applicants exceeds available seats, program acceptance is determined through a lottery process.

Acceptance into a CTE program is followed by three years of specialized study totaling 900 hours of technical instruction. Throughout this time, students are encouraged and supported in earning nationally recognized certifications and credentials aligned with their chosen career pathway, including OSHA safety certification, entrepreneurship training, and additional career-specific credentials.

All CTE programs lead to a pathway to postsecondary education, including associate degrees and beyond. Lowell High School Career and Technical Education prepares students with the academic and technical skills, knowledge, and training necessary to succeed in high-demand careers and postsecondary education. Our programs are aligned with current labor market demands and college- and career-readiness goals, emphasizing real-world competencies such as collaboration, critical thinking, problem-solving, teamwork, innovation, and effective communication.

## Business Technology Program

### **Business 1 (CTE)**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Grade Level: 10**

**Fulfills: Chapter 74 requirement**

This introductory, Chapter 74–approved course prepares students with the foundational knowledge and skills necessary for careers in business and related fields. Students explore the daily operations of a business, including customer service, business technology, communication, and financial practices. The course addresses legal, ethical, and community considerations in the workplace and provides hands-on experience with the Microsoft Office Suite while building industry-relevant skills.

## Culinary Program

### **5210 Culinary 1 (CTE)**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Grade Level: 10**

**Fulfills: Chapter 74 requirement**

Culinary Arts I is the foundational year of the Chapter 74 Culinary Arts program and introduces students to professional kitchen operations, food safety, and essential culinary skills. Students learn and practice safe

work habits, sanitation procedures, and proper use of commercial kitchen equipment while developing basic cooking and baking techniques aligned to the Massachusetts DESE Career and Technical Education Culinary Arts Frameworks.

The instruction emphasizes hands-on learning in a commercial kitchen, with a focus on knife skills, fundamental cooking methods, baking basics, kitchen organization, and introductory front-of-house service. Students also develop employability skills such as teamwork, communication, time management, and professionalism that are essential in the culinary and hospitality industries.

As part of the course, students earn OSHA 10-Hour General Industry Certification and Allergen Awareness Certification. Culinary Arts I prepares students for the increased technical rigor, independence, and leadership development required in Grades 11 and 12, as well as for entry-level employment in food service and hospitality fields.

## **Information Support Systems and Networking (ISSN) Program**

**1635 Information Support Systems and Networking (CTE)**

**Grade Level: 10**

**Level: Honors**

**Fulfills: Graduation Requirement**

**Credits: 2.5 per semester/5 per year**

**Prerequisites: Must be admitted into the program**

This course will cover the knowledge and skills contained in the following DESE CTE Learning standards:

- Safety and Health in the ISSN Field
- Information Technology Development in Society
- Help Desk Support
- Computer Hardware

Students will be introduced to the essential knowledge and skills required to identify and explain the basics of computing, IT infrastructure, applications and software, software development, database fundamentals, and cybersecurity. In addition, they will be introduced to the fundamentals of computer hardware and software, mobile devices, security and networking concepts, and the responsibilities of an IT professional.

## **Marketing Program**

Marketing uses images and words to create positive perceptions, grow a business, and build relationships with customers. Marketing programs teach key business concepts through analysis of existing product marketing and developing solutions to marketing challenges. Students develop an understanding of the relationship between finance, sales, marketing, merchandising, and customer service. Through hands-on projects and experiences, they learn to apply marketing best practices in supervised business settings located within the school or in the community. Some schools may emphasize retail sales and marketing, while others may emphasize customer service, or market and financial analysis.”

The LHS Marketing Program is geared toward students interested in majoring in Business Administration in college and/or entering the workforce in the areas of Marketing, Accounting and Finance immediately upon high school graduation. This is a MA DESE CTE approved program and students are required to apply through the Business Department or their school counselor through the CTE Admissions process and commit to fulfilling all required coursework and meeting the program hours.

The Marketing Program offers students authentic learning opportunities in the 1826 School Store, the LHS branch of the Jeanne D’Arc Credit Union, and paid Cooperative Education employment in grade 12.

Students also benefit from the opportunity to achieve Industry Recognized Credentials (IRCs) in OSHA General Industry and National Retail Federation Customer Service & Sales.

Students in this Pathway are eligible to join Business Professionals of America (BPA) a student organization which provides students with the opportunity for educational and leadership development, personal and professional growth, and career related competencies.

### **6310 Marketing 2 (CTE)**

**Level: Honors**

**Credits: 2.5 per semester/5 per year**

**Grade Level: 10**

**Fulfills: Chapter 74 requirement**

This full-year course engages students in marketing as a means to promote a product or service. They will do so by using computer software to design promotional flyers, create advertisements, and participate in a group advertising project. Students will study the principles of marketing through the creation of a marketing plan to operate and manage a business. Students will learn to support the plan through consumer science, selling, advertising, and profit goals through cost management. In addition, students will explore the elements of supply chain management, distribution channels, and product and service pricing as a function of marketing.

“Massachusetts Career and Technical Education Programs (CTE) prepare students to graduate with skills and credentials that will provide them with advanced employment opportunities if they enter the workforce immediately upon graduation. These CTE programs also provide students with high quality learning experiences that enable them to see and understand their future career paths, including continued education. Signature components of these programs include at least 900 hours of immersive learning time, co-operative education in partnership with local employers, and opportunities to earn high-value industry recognized credentials.”

*\*Definition taken from DESE website. For more information, please go to: <https://www.doe.mass.edu/ccte/pathways/cte/default.html>*

### **6311 Marketing 3 (CTE)**

**Level: Honors**

**Credits:10 per year**

**Grade Level: 11**

**Fulfills: Chapter 74 requirement /elective**

Students are responsible for managing and mentoring underclassmen within each department of the school stores. Their responsibilities include purchasing, pricing, receiving merchandise, advertising, sales, visual merchandising, and completing all back-office cash and treasury reports. Students are trained to use a computerized point-of-sale (POS) platform that includes multiple POS terminals and handheld Flex remote registers, allowing them to sell merchandise throughout the building and at the Marketing Kiosk. Clover is a fully integrated, online retail management system that provides students with advanced technical training in point-of-sale operations, inventory control, general ledger functions, barcode scanning, and ticketing. The system also includes a customer database that enables students to communicate with customers through text messaging and email regarding sales and promotions across all Marketing Mall stores.

Each year, students have opportunities to work with outside vendors invited into the school. They learn how an open-to-buy system functions when planning and purchasing merchandise for the following school year. Students also develop skills in writing purchase orders and processing them through the Internal Purchase Requisition System. These experiences provide students with a comprehensive understanding of retail store operations, management functions, and the interrelationships among various marketing career paths.

Students also learn to use social media platforms and web-based job search tools, emphasizing the importance of keywords and local resources for career development. Advanced lessons in social media and computer-based applications are integrated into class projects. Instruction introduces key concepts in social media strategy, brand management, sports and entertainment marketing, e-commerce, digital marketing, database management, and advertising.

### **6312 Marketing 3 Theory (CTE)**

**Level: Honors**

**Credits: 5 per year**

**Grade Level: 10**

**Fulfills: Chapter 74 requirement/elective**

This class focuses on accounting principles and web-based marketing. In the accounting component, students learn the processes of planning, recording, analyzing, and interpreting financial information. Emphasis is placed on maintaining financial records for a service-based company. Students complete a series of accounting activities, including recording transactions and managing financial data, to develop an understanding of the purpose of an accounting system and the accounting equation. They analyze transactions using debit and credit principles, record entries in a general journal, and post them to a general ledger. The course also includes project-based activities such as analyzing public companies' financial statements, examining the importance of business ethics and codes of conduct, and applying accounting concepts to the Marketing Mall Shops.

In the web-based marketing component, students explore how websites and digital marketing strategies influence businesses and organizations. Students learn to use social media platforms and email marketing tools to analyze and develop effective business communications. The course examines how electronic media and online advertising contribute to brand recognition and product positioning. Students also study the impact of internet viral activity on businesses and evaluate effective viral and buzz marketing strategies.

## **Radio and Television Broadcasting Program**

**7878 Radio & TV Broadcasting (CTE)**

**Level: Honors**

**Credits: 5 per year**

**Grade Level 10**

**Fulfills: Chapter 74 Requirement/elective**

**Prerequisites: Must be admitted into the program**

This is a C74/N74 career and vocational education (CTE) class that serves as the first course in the Radio & TV Broadcasting pathway. This class exposes students to the range of skills and roles involved in media entertainment and journalism. Following industry standards students learn to script, plan and produce animations and audio and video recordings. Students also learn to use video and audio editing software, and to work with lighting, staging, and acoustical designs to produce quality productions. Completion of this pathway provides all of the training required to begin entry-level work in the field.

## **Robotics and Automation Program**

**3954 Introduction to Robotics and Automation (CTE)**

**Level: Honors**

**Credits: 5 per year**

**Grade Level: 10**

**Fulfills: Chapter 74 requirement/elective**

**Prerequisites: Must be admitted into the program**

This introductory course is designed for Grade 10 students beginning the Chapter 74 Robotics and Automation Technology Program at Lowell High School. Robotics engineers and technicians design, build, maintain, and operate robots and other automated machines for factories and other settings where efficiency and accuracy are important. Robotics and Automation programs provide excellent preparation for college degrees in robotics or electrical engineering, or for entry-level careers as robotics technicians. Students begin by learning foundational concepts related to electrical circuits, electronics, and computer programming. As students progress, they explore physics and advanced computer programming theories as they build and work with more complex systems and machines.

# **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
Health A/B*	1 year
Physical Education*	4 years
Freshman Seminar	1 year

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

# LATIN LYCEUM

## ~ COURSE REQUIREMENTS ~

<b>Grade 9</b>	HH-English 1 HH-World History HH-Integrated Science HH-Algebra 1 <u>or</u> HH-Geometry H-Latin FA 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>	EC-English Composition 1 and 2 AP-US 1 H-level or higher Science course H or AP level Math H-Latin Poetry or AP-Latin Prose (Recommended) Physical Education*
<b>Grade 12</b>	AP-English 4 AP-US 2 H-level or higher Science course H or AP level Math H-Latin Poetry or AP-Latin Prose (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 a smooth and supportive transition from middle school to high school. Our goal is to ensure that all students who enter as freshmen successfully leave 9th grade with the content knowledge and soft skills necessary for 10th grade and beyond. Academic teams at the Freshman Academy provide instruction and support addressing the importance of each content area.

In addition to a robust level of academic support, the Freshman Academy functions on a student support team model which includes all stakeholders in the process of collaboratively supporting the social-emotional well-being of our students. A student support team work comprising 9th grade administrators, guidance counselors and school social workers collaborate with teachers and students throughout the year to support students with school conduct, and attendance to further academic growth and achievement. This model nurtures individual students to become active participants in a community of learners, and creates an environment that 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.

Three levels of courses are offered within the 9th grade, including 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 with content-based literacy skills, organization and time management techniques, as well as units on academic requirements, goal setting, career awareness, and cross-content academic 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, ROTC, 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 cannot be routinely granted. This includes, but is not limited to, course change requests based on teacher-preference, peer to peer issues, or the like. At the high school level it is important to build both self-advocacy skills and the skills to tactfully and appropriately resolve interpersonal issues of this nature. It is also our past experience that proper initial placement within the freshman classes 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.

# ADVANCED PLACEMENT

Lowell High School currently offers 12 Advanced Placement (AP) courses throughout its curriculum, in five different departments. 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. A complete list of AP courses offered at LHS 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. The Advanced Placement Test given in May is required of every student and a fee is charged for the test.

## LHS AP Course Offerings

0661/0662	AP English Literature and Composition	English	12	2.5/2.5
1643/1644	Computer Science A AP	Math	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
1469/1470	Statistics AP	Math	11, 12	2.5/2.5
3461/3462	Physics 1 (LS) AP	Science	12	2.5/2.5
4261/4262	U. S. History 1 - AP	Social Studies	10, 11	2.5/2.5
4361/4362	U. S. History 2 - AP	Social Studies	11, 12	2.5/2.5
4561/4562	European History - AP	Social Studies	10, 11, 12	2.5/2.5
4661/4662	U.S. Government and Politics AP	Social Studies	11, 12	2.5/2.5
4445/4446	Psychology AP	Social Studies	12	2.5/2.5
4663/4664	African American Studies AP	Social Studies	11, 12	2.5/2.5
2545/2546	Spanish Language and Culture AP	World Language	11, 12	2.5/2.5
	Latin AP	World Language	12	2.5/2.5

(Students taking 4 years of Latin are eligible for the Latin AP Exam)

**\* A minimum of 15 students need to enroll in order for class to run during the school year**

# COLLEGE PROGRAMS

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 UMass 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.

## Early College (MCC)

Early College Lowell is an educational opportunity that allows students to take enriching college-level courses while enrolled in high school, earn real college credits, and get an early start on their post-secondary education - at no cost to them or their families. Students earn 3 or 4 credits per course that are transferable to most universities and colleges throughout the country. LHS offers a wide variety of courses in arts and humanities, STEM, english and the social sciences providing students with a range of opportunities to explore.

- Students begin taking exploratory classes in Grade 9
- Students taking classes as Juniors or Seniors must be in good standing
- Students must receive recommendation from most recent ELA teacher through the Multiple Measures Form

LHS Course	LHS Course Description	MCC Course	MCC Course Description	MCC Credits	Grade
7760	A-Visual Design 1	ART 153	Visual Design I	3	10, 11, 12
3250	A-General Biology 1	BIO 131	General Biology I	4	11, 12
0601	A-Public Speaking	COM 103	Public Speaking Presentations and Professional	3	11, 12
0605	A-Intro to Film Studies	COM 106	Film & Society	3	11, 12
3971	A-Introduction to Engineering	EGR 101	Introduction to Engineering	4	11, 12
0606	A-English Composition A	ENG 101	Composition I	3	11, 12
0607	A-English Composition B	ENG 102	Composition II	3	11, 12
0557	A-Literature of The Holocaust	ENG 120	Literature of The Holocaust	3	11, 12
0587	A-Modern American Literature	ENG 161	Modern American Literature	3	11, 12
0603	A-African American Literature	ENG 165	African American Literature	3	11, 12
0609	A-Graphic Novel	ENG 190	The Graphic Novel	3	11, 12
3735	A-Environmental Studies	ENV 115	Environmental Studies	3	11, 12
4665	A-US History through 1876	HST 121	US History Through 1976	3	10, 11, 12
4666	A-US History 1877 to Present	HST122	US History After 1876	3	10, 11, 12
4447	A-Intro to Psychology	PSY 101	Introduction to Psychology	3	11, 12
4435	A-Intro to Sociology	SOC101	Introduction to Sociology	3	11, 12

## Early College Independence Program

LHS Students will have the opportunity to take 2 classes per semester on campus at Middlesex Community College. Students will choose 2 classes per semester. Courses are offered in a variety of subject areas. All of the courses will help work toward an Associate's Degree or transfer to a 4-year institution.

Students will be dismissed from Lowell High School at 12:00 to attend classes at Middlesex Community College – Lowell.

***\*Please note, Early College Independence Courses are run subject to MCC professor availability and as a result subject to change.***

### Previous Independence Offerings

LHS Course	LHS Course Description	MCC Course	MCC Course Description	MCC Credits	Grade
4541	A-Cultural Anthropology	ANT 101	Cultural Anthropology	3	12
3787	A-Nutrition	BIO 108	Nutrition	3	12
3545	A-Anatomy & Physiology I	BIO 231	Anatomy & Physiology I	4	12
3546	A-Anatomy & Physiology 2	BIO 232	Anatomy & Physiology 2	4	12
6233	A-Introduction to Business	BUS 110	Introduction to Business	3	12
6323	A-Introduction to Entrepreneurship	BUS 130	Introduction to Entrepreneurship	3	12
4555	A-Intro to Communications	COM 101	Introduction to Communication and Media	3	12
0608	A-Media, Ethics and Law	COM 102	Media, Ethics and Law	3	12
4551	A-Introduction to Criminal Justice	CRJ 111	Introduction to Criminal Justice	3	12
4543	A-Ethics and Society	ETH 101	Ethics and Society	3	12
1471	A-Statistics	MAT 177	Statistics	3	12
1455	A-Precalculus for Engineering	MAT 195	Precalculus for Engineering	4	12
4541	A-Introduction to Philosophy	PHL 101	A-Introduction to Philosophy	3	12
4453	A-Abnormal Psychology	PSY 150	Abnormal Psychology	3	12

## Dual Enrollment (UML)

Lowell High School partners with the University of Massachusetts Lowell (UML) to offer students the opportunity to earn both high school and college credit through concurrent enrollment courses. These rigorous college-level courses are taught at Lowell High School by UML professors, in collaboration with qualified instructors from LHS. Students should expect a challenging academic experience comparable to a traditional university setting.



### UML Courses

<b>LHS Course</b>	<b>LHS Course Description</b>	<b>UML Course</b>	<b>UML Course Description</b>	<b>UML Credits</b>	<b>Grade</b>
3721	A-Chemistry A	CHEM 1350	Honors Chemistry I	3	11, 12
3722	A-Chemistry B	CHEM 1360	Honors Chemistry II	3	11, 12
3723	A-Chemistry Lab A	CHEM 1230L	Chemistry Lab I	1	11, 12
3724	A-Chemistry Lab B	CHEM 1240L	Chemistry Lab II	1	11, 12
4701	A-Teaching In The Inclusive Classroom	EDUC 1100	Teaching In The Inclusive Classroom	3	10, 11, 12
3731	A-Life Science 1	LIFE 1010	Life Science I	3	12
3732	A-Life Science 2	LIFE 1020	Life Science II	3	12

## ARTICULATION AGREEMENTS

Lowell High School has articulation agreements for select courses with Middlesex Community College. Articulation Agreements provide students with college credits for successfully completing Lowell High School courses should they attend Middlesex Community College.

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 school counselor for more information.

## MIDDLESEX COMMUNITY COLLEGE

### Culinary

*Completion of 3 years of Culinary*

5311/5312 Culinary Arts – Beginners	BUS 155 Culinary Theory	3 Cr
5313/5314 Culinary Arts – Intermediate	BUS 156 Culinary Skills	3 Cr
5315/5316 Culinary Arts – Advanced	BUS 157 Bakery and Pastry Skills	3 Cr
	BUS 158 Sanitation and Food Service Operations	3 Cr

### Dance

7907/7908 Dance 3 & Dance 4	DAN 101 Introduction to Modern Dance	3 Cr
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To receive credit for the Middlesex Community College courses, students must:

- Graduate from Lowell High School
- Earn a minimum cumulative grade of “B-“ (80) in the Lowell High School courses
- Meet all Middlesex admissions requirements and be a matriculated student in good standing
- Submit to the Middlesex Enrollment Services an official high school transcript documenting graduation

# CREDIT RECOVERY

At Lowell High School, we understand that sometimes students fall behind in their studies. If this happens, students may be able to catch up through our **Credit Recovery Program**.

Credit Recovery classes are available through the **Edmentum online learning platform** and offer the following options:

- **During the school day** - Core classes/Graduation requirements only unless otherwise approved
- **After school at Lowell High School**
- **At The Engagement Center** (within Lowell Public Schools- seniors only with application and approval) \*\*include part-time program outside of LHS

If students qualify, they can take classes during the day, after school, or in the evening with additional support from a teacher. The goal of Credit Recovery is to help students recover credits needed to stay on track to graduate on time.

## Important Information:

- **Self-paced:** Credit Recovery classes are self-paced, which means you will work through online modules at your own speed. It's up to you to keep making progress.
- **Online learning:** course content is delivered through an online platform. Educators in the classroom are present for tutoring and support but do not provide direct instruction in all content areas.
- **Pre-approval Required:** You need **pre-approval** to participate in the Credit Recovery Program, so talk to your school counselor to see if you qualify.
- **For Students Who Need to Recover Credits:** These courses are mainly for students who need to recover credits from a course they previously attempted or when students are re-engaging after absence.

# SENIOR STUDY

Senior Study is a non-credit-bearing course for seniors on track to graduate with their cohort and do not need additional courses to meet graduation requirements. Seniors may leave campus early with the permission of their parents or caretakers.

Senior students must be preapproved and sign an agreement to participate in Senior Study.

# WORK STUDY

Lowell High School recognizes that work of all types is a learning experience and provides students with skills and opportunities for success during and after high school. Juniors and Seniors who have employment outside of LHS may be eligible for Work Study, which is a course embedded in their schedule allowing for late arrival or early release daily.

Students must be in Grade 11 or 12 to be eligible and will need to provide their own transportation to and from the Work Study site.

## Academic Expectations

- Work Study hours will replace 1 scheduled class at either the beginning or the end of the day (flexible based on student and employer preference).
- Students will be enrolled in their academic courses and must maintain passing grades in all academic subjects. Students who do not maintain passing grades will be removed from the program.
- If absent from school, the student will not attend work on the same day. The student will be removed from the Work Study Program if they attend work and not school.
- The student will attend their classes daily, as listed on their schedule. In the event of excessive absences, students may be removed from the Work Study Program.
- Students will be graded Pass/Fail for their participation in the Work Study Program.

## Work Study Expectations

- Students must sign the LHS Work Study Contract prior to starting this program.
- Students must have employment prior to starting the program.
- Students will submit weekly journals as assigned and will submit their Work Based Learning Plan Supervisor Feedback from upon request
- Students will submit signed timesheets or pay stubs upon request by the College and Career Counselor overseeing the program
- Students must work a minimum of 15 hours per week.
- Students must inform the College and Career Counselor about any thoughts of quitting their job prior to giving notice to the employer.
- Students must inform the College and Career Counselor if they are terminated from their job.
- If students quit or are terminated from employment, they must stay at LHS during their Work Study period to provide support in their house office or Student Support Services
- The student will maintain a good attitude and be cooperative while in school and on the job, with minimal to no disciplinary issues at LHS.

# INTERNSHIP

At Lowell High School, the second semester Internship experience assists seniors in furthering their education and knowledge within the “real world”. The focus of the internship program is to support the student experience in the workforce to become more informed about possible career choices. At the same time, this program supports independence and helps prepare them for the responsibilities of either the college experience or the world of work. At the end of the program, students will have had a 100 hour plus experience that will help shape their decisions regarding possible college majors and career direction.

This course is open to seniors who have good attendance and are in good academic standing.

## 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 workplace 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



## AFTER DARK

After Dark is a collaboration between Lowell High School and Greater Lowell Technical High School that provides more students the opportunity of a technical education. The program requires a two-year commitment and students will graduate with advanced training and a 900 Hour Technical Certificate.

Lowell High School students will take academic classes during a modified school day before attending classes at GLTHS from 2:30 to 5:30. The After Dark Program is currently being offered for Metal Fabrication / Welding, Automotive Technology, and HVAC (Heating, Ventilation and Air Conditioning).

6411/6412	Automotive Technology 1	11	5/5
6413/6414	Automotive Technology 2	12	5/5
6460/6461	Metal Fabrication/Welding 1	11	5/5
6462/6463	Metal Fabrication 2	12	5/5

**6411/6412      AUTOMOTIVE TECHNOLOGY 1      11      5/5 Cr.**

Upon entering the automotive technology program, students will be introduced to the safety protocols and requirements. This will be achieved through instructor demonstration, OSHA 10 General training, and SP2 Safety training.

The class is divided into both classroom/computer studies and live hands-on work on a variety of vehicles available for training. Areas of concentration will include automotive tools, measurement tools, and hardware and torque applications. As students become familiar with the basic hand tools and applications, they will focus on an in-depth study of under car systems, maintenance procedures, fluids, tire servicing and Hunter alignment systems.

The students are familiarized with the practices and customs used in industry. Areas of concentration include electrical, engine performance, engine mechanical, engine measurement, and digital multimeters. Along with computer-based training, students are prepped with employability skills enabling them to prepare for employment and in the automotive field.

The automotive shop program is enhanced with all latest state of the art equipment, tools and computer access including: IDENTIFIX, ALLDATA, and Mitchell Computer Based Learning. The course is aligned to Massachusetts State Frameworks for Automotive Technology.

**6413/6414      AUTOMOTIVE TECHNOLOGY 2****12****5/5 Cr.**

Automotive Technology year two builds on technical competencies students learned year one. Students are able to achieve an entry level ASE Certification, OSHA 10 General certification, Valvoline Credentials, along with factory Ford Certifications. All of these enable the students to be prepared to enter employment positions through area businesses and automotive dealerships. Students who are eligible may enter cooperative education programs semester two of year two of the program

**6460/6461      METAL FABRICATION/WELDING 1      11      5/5 Cr.**

Introduction to metal shop safety protocols. Including material handling, welding, cutting, bending, shearing, grinding and sanding equipment. This will include an OSHA 10 certification for general industry. The Metal Fabrication program will introduce safe shop practices and will be supported by classroom time for theory on welding and cutting processes. Utilizing the Hobart Institute of Welding Technology text, along with Welding: Principles and Applications by Larry Jeffus. Blueprint reading with weld symbols, shop math and sciences of Metal Fabrication. Students will learn to weld and fabricate different types of metal and thickness. Including Cold rolled steel, hot rolled steel, stainless steel and aluminum.

Year One Highlights include the setup and operation of the following:

- Shielded Metal Arc Welding
- Gas Tungsten Arc Welding
- Gas Metal Arc Welding
- Oxy-Acetylene Cutting
- Plasma Arc Cutting
- Hydraulic Shear
- Hydraulic Press Break
- Pedestal grinders
- Belt sanders
- Hydraulic rollers
- Ironworker
- Bandsaws (vertical and horizontal)

**6462/6463      METAL FABRICATION/WELDING 2****12****5/5 Cr.**

Year two will build off the skills learned in year one. Adding, out of position welding, Groove preparation. Advanced blueprint reading and sketching/drawing using scale and metallurgy. Included in year two will be a simulated D1.1 welding certification test. Resume writing and interview skills. Advanced students may be introduced to CNC plasma cutting using SwiftCNC and SwiftCAM. Maintaining the safety culture of industry. These skills are obtained by hours in the welding booth and following the Massachusetts framework guidelines for Metal Fabrication & Joining Technologies. Offering the use of state of the art equipment & tools.

Year Two Highlights:

- Out of position welding 2F&G Horizontal, 3G&F Vertical, 4G&F Overhead
- Advanced Blueprint reading
- Introduction to SwiftCNC and SwiftCAM software
- Realityworks measurement certificate
- Interview Skills certificate
- Simulated D1.1 Welding tests in various positions

# SCHOOL SUPPORT

At LHS we are continuously revisiting our school offerings to ensure they meet the diverse needs of our student body. Below are specialized opportunities that were created with this vision in mind.

**6811/6812 SPECIAL EDUCATION AIDE - Honors 10, 11, 12 2.5 Cr.**

The Special Education Department provides 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 in this class 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. Permission of the Department Chair is required.

**6841/6842 STUDENT AMBASSADOR - Honors 10, 11, 12 2.5/2.5 Cr.**

At Lowell High School, our Student Ambassadors act as mentors, facilitators, and a friendly support network for students new to our school community. The Ambassadors consist of a select group of sophomores, juniors, and seniors who apply to be a part of the program and can commit fully to our meetings and event schedule. Student ambassadors have an opportunity to gain professional and life skills that will positively impact the Lowell High community and transfer to post-high school experiences. \*Permission of the Ambassador Program Coordinator is required.

**6813/6814 LIBRARY AIDE - Honors 10, 11, 12 2.5/2.5 Cr.**

Students will provide services in the library within Lowell High School. The student and the Librarian will work together closely on tasks that are helpful to the functioning and organization of the library as well as educational for the student aide. The student is always directly supervised by the librarian. Permission of the Librarian or administrator is required.

**6815/6816 OFFICE AIDE – Non-Weighted 9,10,11,12 2.5/2.5 Cr.**

Students will provide services to house offices or departments within Lowell High School. The student and the administrator will work together closely on tasks that are helpful to the office/department and that are educational for the student aide. The student is always directly supervised by the office/department staff. Permission of the department head or administrator is required.

**6817/6818 TECHNOLOGY AIDE – Honors 9,10,11,12 2.5/2.5 Cr.**

Students will provide services in the technology department within Lowell High School. The student and the technology/media staff will work together closely on tasks that are helpful to the functioning and organization of the technology department and the deployment of technology devices as well as the education for the student aide. The student is always directly supervised by the staff in the technology department.





# LOWELL HIGH SCHOOL **CORE VALUES**

- RESPONSIBILITY**
- INTEGRITY**
- DETERMINATION**
- ENGAGEMENT**
- RESPECT**