

LITTLETON HIGH SCHOOL

Program of Studies

2019- 2020

SCHOOL COMMITTEE

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Keith J. Comeau - Assistant Principal

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LITTLETON HIGH SCHOOL

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John M. Harrington, Ed.D.
Principal

Keith J. Comeau
Assistant Principal

February, 2019

Dear Students and Parents:

The 2019-2020 Program of Studies provides important information for you to review as you make course selections and develop your schedule. Consult your teachers and school counselor in choosing the course level and carefully consider their recommendations. This is especially important because changing courses or levels after school is underway may be difficult and come with unforeseen costs such as dropping other preferred courses or meeting times.

While we strive to honor student requests and create the schedule you would like, sometimes unavoidable conflicts arise. Should concerns surface, school counselors will advise you of options and work with you to make adjustments.

In addition, keep in mind your college and career aims as you select courses. Certain courses may better position you in the pursuit of college admission and employment goals.

We encourage you to make the most of your high school experience. Consider your current aspirations, interests, and commitments as you make choices and create your schedule. Challenge yourself, and strive for a healthy balance.

Please see us with any questions. We are here to help and guide.

Sincerely,

John M. Harrington, Ed.D.
Principal

LITTLETON HIGH SCHOOL

Mission Statement

Commitment to student learning and educational excellence

Littleton High School is a safe, caring, supportive, and academically challenging learning community that cultivates and models respect, responsibility, integrity, accountability, perseverance, and teamwork.

We pursue excellence in learning and the development of each student's growth and potential through collaborative and dedicated attention to our core values, beliefs, and learning expectations.

We work together to guide our students in becoming self-reliant, responsible, and contributing citizens in a constantly changing world.

Our Core Values:

- Respect
- Responsibility
- Integrity
- Accountability
- Perseverance
- Teamwork

Our Beliefs about Learning:

- We believe the education of our students is the shared responsibility of students, families, faculty, staff, and community.
- We believe highly effective and engaging teachers serve as crucial guides in the development of student learning.
- We believe students should strive to meet high expectations and that every student, with effort, can and will meet challenging standards of achievement.

- We believe in a growth mindset through which students develop competence and confidence as they set goals, persevere, overcome obstacles, and enjoy the pleasure of learning and accomplishment.
- We believe students should monitor and reflect upon their learning and strive to improve based upon personal reflection and faculty feedback.
- We believe students learn at different rates and in different ways, and instruction that is differentiated and personalized positively impacts student learning.
- We believe relevant applications and student engagement with personally meaningful questions, topics, and projects make learning more motivating, useful, and lasting.

ACADEMIC EXPECTATIONS:

- Develop and apply critical thinking and problem solving skills
- Demonstrate clear and effective reading, writing, speaking, and listening skills
- Work independently and collaboratively to accomplish goals
- Demonstrate creativity and innovation
- Use technology skills as they research and communicate their learning
- Engage in activities that promote physical fitness and personal health
- Exhibit and employ observation, interpretation, and imagination within the arts
- Apply knowledge and skills to contemporary challenges and global issues

SOCIAL EXPECTATIONS:

- Respect and understand diversity and different perspectives
- Become active participants in their school community

CIVIC EXPECTATIONS:

- Understand the rights and responsibilities of citizenship
- Make positive contributions through community service and civic participation

*(Littleton High School gratefully acknowledges and attributes the contributions and recommendations of other Massachusetts schools in developing and wording the above statement of core values, beliefs and learning expectations.)

ALIGNMENT OF CURRICULAR AREAS WITH LEARNING EXPECTATIONS

Littleton High School emphasizes and assesses 21st century learning expectations in specific curricular areas.

The following table indicates the alignment of specific curricular areas and learning expectations.

21st Century Learning Expectations	Curricular Area with Primary Responsibility
Develop and apply critical thinking and problem solving skills	Mathematics
Demonstrate clear and effective reading, writing, speaking, and listening skills.	English Language Arts and World Language
Work independently and collaboratively to accomplish goals	Science
Demonstrate creativity and innovation	History and Social Science
Use technology skills to research and communicate learning	History and Social Science
Engage in activities that promote physical fitness and personal health	Physical Education and Wellness
Exhibit and employ observation, interpretation, and imagination within the arts	Fine and Performing Arts (Art and Music)
Apply knowledge and skills to contemporary challenges and global issues	World Language
Civic Expectations	
Understanding the rights and responsibilities of citizenship	History and Social Science
Make positive contributions through community service and civic participation	LHS Guidance Department
Social Expectations	
Respect and understand diversity and different perspectives	History and Social Science
Become active participants in their school community	LHS Administration

All faculty members can emphasize any of the learning expectations and are actively encouraged to assess these expectations with school-wide rubrics.

COURSE SELECTION

All students, in all grades, are to be scheduled in a minimum of six classes per semester. Requests for an exception will be examined on a case-by-case basis, taking into consideration what the student's parent, counselor and principal believe is in the student's best educational interest. Exceptions require the approval of the principal.

A college preparatory curriculum consists of a **MINIMUM OF FOUR ACADEMIC** courses (English, mathematics, social studies, science, world language) each of the four high school years. The more selective the college one has in mind, the more rigorous the academic load should be, both in course difficulty and in number of classes taken.

High school students have a range of choices in their course work, subject to the graduation credit and distribution requirements. To keep many options for further education and career choices open, we encourage students to take the most appropriately challenging program possible.

In choosing their programs, students should work closely with their guidance counselors, parents, and teachers. Parents who have questions about program and course selections are urged to call the Guidance Department to schedule a conference. Every effort will be made by school personnel to see that program requirements are met, but the final responsibility for meeting these requirements for promotion and graduation rests with the student and his/her parent(s) or guardian(s).

Once school opens in the fall, it is expected that each student will continue with the schedule that has been developed during the course selection process. Changes will be allowed only for those students who still need courses to complete their credit requirements and schedules. Any minor adjustments should take place during the first two weeks of school, via communication with the school counselors. A good education depends on a full 90 day (semester) or 180 day (full year) presence in a class. Course changes requested after the first two weeks of the semester are strongly discouraged. School counselor, teacher, and administrator input will be required to effect such a change. Littleton High School does not accept course changes based on personal incompatibility between a student and teacher.

Course Load

All students are required to select and maintain enrollment in a minimum of six, 5-credit courses or their equivalent, and carry a minimum of 30 credits. Any exception to this minimum requirement must be approved by the principal. Students must carry a full course load to be eligible to participate in co-curricular activities such as: athletics, drama, student government, or any team, club or squad. Seniors are required to carry 30 credits in their senior year, regardless of the credits earned in previous years. The high school principal may grant an exemption after consultation with the student and the student's guidance counselor.

Beginning with the 9th grade, progress toward graduation depends upon the accumulation of credits. One hundred sixteen (116) credits are required for graduation. Students' programs are checked to make certain

that each student will have adequate credits to progress with his/her class. Although every effort is made to ensure the students have adequate credits, meeting requirements is the responsibility of each student and his/her parent(s) or guardian(s). Students should know their credit total to date and be certain that they have sufficient credits for promotion as well as appropriate courses in the distribution requirements.

Course Changes

1. Course changes should be completed within the first two weeks of a course. Courses dropped after the midpoint of the term will appear as a “W” on the transcript.
2. Courses dropped after the first eight weeks will appear on the transcript as either “WP” (withdrawal while passing) or “WF” (withdrawal while failing). If a senior drops or withdraws from a class after transcripts have been sent out to colleges, Littleton High School may notify colleges of the change in the student’s schedule.
3. Academic credit will be awarded when the student transfers to a different level of the same course.
4. Exceptions to these procedures may be made at the discretion of the principal.

GRADUATING FROM LITTLETON HIGH SCHOOL

1. Graduation from Littleton High School implies that students have satisfactorily completed an approved course of study and that they have passed the Massachusetts Comprehensive Assessment System (MCAS) and/or other requirements established by the school district.
2. One hundred sixteen (116) credits, with specific departmental requirements, are needed to receive a diploma from Littleton High School.
3. Only approved courses will be accepted for graduation. Course work taken anywhere other than Littleton High School must be approved in advance to avoid loss of credit through misunderstanding. Approval must be granted by the principal.
4. Students who are away for a term(s) or a school year to participate in a student exchange program or otherwise study abroad may receive credit towards graduation when: 1) study plans are approved by the principal in advance; and 2) the institution where the study occurred submits a record of the student’s work. In these instances, the principal and the student’s guidance counselor will evaluate the work and assign credit for it according the standards prevailing at Littleton High School.
5. Prior credit earned from accredited schools is transferable, with the following exceptions: doctrinal religion courses; driver’s education; service activities such as teacher, office, or library assistant.
6. Students enrolling in summer school for make-up credit must have prior written approval from a Littleton High School counselor. Students may enroll in a maximum of two courses per summer in an accredited summer school program. Exceptions require the approval of the principal.

7. During the school year, a student may repeat a course that s/he has taken and passed, but it will not be for credit. Although both grades will be recorded, only the higher grade will be used in computing the G.P.A. (grade point average).

8. The High School Counseling Department will provide information and counseling for all students to enable them to develop a schedule of courses that will meet requirements for colleges, vocational schools, or any post-high school program selected by the student and his/her parents.

Distribution Requirements

We establish minimum course requirements in seven different areas. These courses form a central curriculum that all students must pursue in order to graduate from Littleton High School.

Working closely with their child and their child's school counselor, families are encouraged to develop a tentative four-year program which will meet these requirements, challenge the student, and accommodate his or her particular interests. This program should be reviewed each spring prior to preliminary registration for the following year, in order to determine if it is still appropriate.

Subject	Littleton High School Graduation Requirements	<i>Required by Massachusetts State colleges and universities</i>	<i>Recommended by most 4-year colleges</i>	<i>Recommended by most selective colleges*</i>
English	4 years; 20 credits	20 credits	20 credits	20 credits -honors level classes
Mathematics	4 years; 20 credits including Algebra I & II and Geometry	20 credits including Algebra II (to be implemented with students entering college in 2016)	20 credits including Algebra II.	20 credits including a minimum of Pre-Calculus
Social Sciences	3 years; 15 credits to include 2 years of US History	15 credits to include US History	15 credits to include US History	20 credits to include US History, World History and Economics
Science	3 years; 15 credits with lab	15 credits with lab	15-20 credits including biology and chemistry or physics	15-20 credits including biology and chemistry or physics

Foreign Language	2 years; 10 credits in the same language	10 credits in the same language	10-15 credits in the same language	20 credits in the same language
Wellness/ Health	For Class of 2018 & beyond: 4 years; 12.5 credits			
	For Class of 2017: 1.5 years; 7.5 credits			
Fine/Performing Arts/Digital Media	1 year; 5 credits		Fine or performing arts	Fine or performing arts
Electives	17.5 credits	10 credits	Electives that enrich your academic program	Electives that enrich your academic program

Recommendations are based on the minimum requirements for college admission.

*Students seeking admissions to highly competitive institutions should consider as many honors level and Advanced Placement (AP) classes as possible, complete 4 years of the same foreign language, pursue advanced levels of course work in math and science.

Community Service

Fifty (50) hours of service over four years needs to be completed prior to May 1st of the year of graduation.

CPR Requirement

Cardiopulmonary Resuscitation (CPR) and Automated External Defibrillator (AED)

As part of the requirements for graduation, Littleton High School, in partnership with the Littleton Fire Department, will provide instruction to students in Cardiopulmonary Resuscitation (CPR) and the use of an Automated External Defibrillator (AED). Based upon their participation in (CPR) and (AED) training, Littleton High School students will receive at least one hour toward their fifty hour Community Service requirement for graduation. The high school principal may waive this requirement for special circumstances.

Course Cancellation

Courses with insufficient enrollment, budget, and/or staffing issues are subject to cancellation at the discretion of the administration. The administration also reserves the right to limit course and section size, thus deferring some students' requests.

Levels Of Instruction

Advanced Placement (AP) – Littleton High School offers AP courses in U.S. History, European History, Calculus, Statistics, English, Biology, Physics, Psychology, Spanish, French, Art History, Music Theory, and Studio Art. Each of these exacting courses follows an Advanced Placement curriculum that prepares the student to take the AP exam. These courses are suitable for the intellectually mature student who is ready to engage in intensive college-level work. Colleges may grant credit and/or advanced placement to those students who perform satisfactorily on the exam(s).

Honors (H) - These rigorous courses provide accelerated instruction and enrichment experiences for those students who exhibit both exceptional ability and motivation in a particular subject area.

College Preparatory (CP) - These challenging courses provide students with the instruction and experience(s) he/she will need to successfully manage the challenges of a four-year college.

GRADE POINT AVERAGE

Grade Point Average reflects student achievement in the core curriculum. In order to account for the differing challenges and requirements at the various levels of instruction, the following “weights” are assigned in calculating Grade Point Average. Courses in English, Mathematics, Science, Social Studies, World Languages, and all Advanced Placement courses are included in the GPA.

LHS Career GPA is calculated by first multiplying quality points by the potential course credit for each course taken. Then divide the sum of these products by the total potential course credits.

Example:

<u>Course/Level</u>	<u>Grade</u>	<u>Potential Credits</u>	<u>Quality Points</u>		
English (H)	95	5.0	*	4.7	= 23.5
W. History (CP)	85	5.0	*	3.4	= 17.0
Economics	80	2.5	*	3.1	= 7.75
Biology (H)	88	<u>5.0</u>	*	4.0	= <u>20</u>
		17.5			68.25

$$68.25/17.5 = 3.9 \text{ GPA}$$

Additional information about quarterly and semester GPA calculation methods is posted on the LHS webpage. The GPA for students through their junior year is the GPA that is sent to colleges during the college application process.

The following chart identifies the weighted quality points assigned to different grades and course levels.

Grade	Grade Range	Advanced Placement	Honors	College Prep
A+	97-100	5.3	5.0	4.7
A	93-96	5.0	4.7	4.4
A-	90-92	4.7	4.4	4.1
B+	87-89	4.3	4.0	3.7
B	83-86	4.0	3.7	3.4
B-	80-82	3.7	3.4	3.1
C+	77-79	3.3	3.0	2.7
C	73-76	3.0	2.7	2.4
C-	70-72	2.7	2.4	2.1
D+	67-69	2.3	2.0	1.7
D	63-66	2.0	1.7	1.4
D-	60-62	1.7	1.4	1.1
F		0.0	0.0	0.0

Dual Enrollment Program

The Education Reform Act of 1993 gave authorization for the Dual Enrollment Program to be developed. Qualified public high school students, (who have a minimum GPA of 3.0), can earn both high school and college credit through this program by taking courses at Massachusetts State Universities, Colleges, and Community Colleges. These are courses that are part of the regular credit-earning program of a college or university, and which are taken with the prior written approval of the Principal for dual credit.

1. Students are eligible for university credit through the dual Enrollment Program.
2. Students must be juniors or seniors.

3. All students requesting Dual Enrollment courses must have a valid reason for seeking dual enrollment. (The course is not available at LHS and is relevant to post graduation plans.) Election of a course must be considered to be in the best interest of the student.
4. Student's discipline record may be considered in determining eligibility for the Dual Enrollment Program.
5. Students must have no more than four (4) unexcused absences in each class during the semester in which they apply for the dual Enrollment Program.
6. Class times are dictated by the college's schedule.
7. No grades are assigned for first or third marking periods.
8. A final grade is awarded at the completion of each course. This will coincide with second and fourth marking periods.
9. All students wishing to enroll do so at their own expense and must have course approval in writing by the Principal before enrollment.
10. The Principal has final approval on all requests for the dual Enrollment Program.

PARTNERSHIP WITH MIDDLESEX COMMUNITY COLLEGE (MCC)

Beginning in 2016-2017, Littleton High School is developing a partnership with Middlesex Community College. Through this partnership, Littleton High School students will be able to take specific courses at LHS and receive credit at both the high school and MCC. Through the *MassTransfer* agreement, these college credits would be fully transferable to all MA State Colleges and Universities. Prior to enrollment in a Dual Enrollment course, students would have to pass the Accuplacer exam administered through MCC. For further information about this new Dual Enrollment partnership, please contact the Assistant Principal or Guidance Counselors.

ACADEMIC RECOGNITION

Principal's List and Honor Roll recognitions are determined at the end of each Term.

Principal's List:

Grades ≥ 90 in all subjects

Honor Roll:

Grades ≥ 80 in all subjects

Summer School Credit

Students must earn a minimum grade of 50 in the academic year course in order to participate in summer school. A maximum of two (2) courses per summer can be scheduled with prior approval of a Littleton High School counselor.

To earn credit for the summer school course, students must earn a grade of at least 80. While summer school courses may appear on the transcript, credit for a summer school course where a student received below an 80 will not be granted.

National Honor Society

National Honor Society is a prestigious organization, ranking high among administrators, faculty members, students, parents, and residents of the school community. Its reputation for excellence is the result of years of commitment on the part of everyone involved. National Honor Society membership is often regarded as a valid indicator that the student will succeed in life and particularly in studying at the post-secondary education level. The Honor Society member has already exhibited academic achievement, leadership, honorable and admirable character, as well as service demonstrating that the member is willing to use talents and skills for the improvement of society. Through NHS chapter service activities, members maintain and extend the qualities that won them selection. Membership is thus both an honor and a commitment.

***To be eligible to apply for National Honor Society membership junior and senior students must have 3.7 or above GPA and have completed and verified 50 hours of community service with the school's coordinator by the second Thursday of the school year. Students are then invited to complete an extensive application focusing on skills in leadership and character in addition to scholarship and service.**

Scholarship: A student who exhibits academic achievement has achieved a minimum grade point average of 3.70 by at least the start of his/her junior year.

Leadership: A student who demonstrates leadership contributes ideas that improve the civic life of the school, exemplifies a positive attitude, and is able to delegate responsibilities and motivate others.

- Exercises positive influence on peers in upholding school ideals
- Inspires positive behavior in others
- Successfully holds school offices or positions of responsibility
- Is a leader in the classroom, at work, and in other school and community activities

Service: Service is generally considered to be those actions undertaken by the student which are done with or on behalf of others without any direct financial or material compensation to the individual performing the service.

- Volunteers and provides dependable and well organized assistance, is gladly available, and is willing to sacrifice to offer assistance
- Cheerfully and enthusiastically renders any requested service to the school
- Participates in some community service, for either a public or charitable organization. For example, volunteer services for the elderly, poor, or disadvantaged, or service activities through Girl Scouts, Boy Scouts or church groups

Character: A person of character demonstrates the following six qualities: respect, responsibility, trustworthiness, fairness, caring, and citizenship.

- Upholds principles of morality and ethics
- Demonstrates the highest standards of honesty and reliability
- Regularly shows courtesy, concern, and respect for others
- Actively helps rid the school of bad influences or environment

LHS SCHOOL COUNSELING DEPARTMENT

The Littleton High School counseling program is a comprehensive, student-centered program aimed at assisting all students in achieving academic success. The guidance program is developmental, sequential, and focused on attainment of specified student outcomes. As an integral part of the overall educational process, the program emphasizes the concept of total growth and development.

The guidance curriculum is founded on the changing needs of the individual, family, school and community. The Guidance and Counseling Program will be responsible for assisting all students in developing competencies needed for educational, personal and vocational development. These competencies include processing information, communication skills, use of technology, problem solving and teamwork. Guidance services are aligned to these competencies and are delivered through a curriculum designed to meet the specific needs of high school students.

Littleton High School has selected Family Connection from Naviance to support our mission to provide an exemplary guidance curriculum that enables our students and parents to be active participants in college and career planning. Naviance Family Connection offers a comprehensive website that you and your student can use to help in making decisions about colleges and careers. Naviance Family Connection is linked with Naviance Counselor's Office, which we use in our department to track and analyze data about college and career plans. Students and parents may access Naviance at <http://tcci.naviance.com/littletonhs> or via the homepage of the LHS website. The guest password is lhs. Individual student access codes may be obtained from a student's counselor.

Guidance Seminar 11 – Building your Foundation # 006

1 Credit

This one-term course is designed to introduce juniors to post-secondary planning and the college admissions process. Students will become skilled in the Naviance College and Career Management System, College Admissions Testing, Resume Building, Recommendations, Scholarships and other information relevant to post-secondary planning. By the end of the course, students will have participated in each step of the college application process and will have developed a list of viable post-secondary options to explore during the summer and fall prior to the Senior year. Classes will meet two times per week during the third term. The other three days will be directed study hall.

Guidance Seminar 12 – Stepping into the Future # 007

1.25 Credits

This one-term course will help you determine your final post-secondary plans. In this seminar, students will finalize their list of colleges and complete the application process. A major component of applying to college is making sure that the various sections of the application (which are mailed separately) all arrive at the college on time. This is a complex process, which we will help you coordinate throughout

the year. Special attention will be given to the Common Application and online applications. The course will meet twice per week during the first term and the remaining three days will be a directed study hall.

ENGLISH

Philosophy

The ELA curriculum provides instruction in the areas of reading, writing, critical thinking, and oral communication in alignment with the Massachusetts Curriculum Frameworks. The ELA department supports these core goals by focusing on the following mutually supporting practices:

- establishing and reinforcing fundamentals of literacy: instruction in grammar, vocabulary, rhetorical concepts, literary concepts;
- developing and refining rhetorical skills: instruction and practice in brainstorming, developing arguments, organizing and drafting ideas, and revising and refining sentences for various writing situations (exam writing, formal critical analysis, oral reports, writing in the workplace, creative writing);
- developing and refining reading and interpretive skills: posing critical and comparative questions to facilitate comprehension and close analysis of both classic and contemporary cultural texts and cultural issues; instruction in research skills required to access and document authoritative information that speaks to critical questions.

We strive for all Littleton High School graduates, upon completion of the ELA curriculum, to have acquired appreciation for and demonstrated achievement in the power and pleasure of articulation, and to have developed sound interpretive and communication skills that will help them engage as skilled, thoughtful participants in a democratic society and marketplace.

Honors versus College Prep in ELA:

All ELA students will be exposed to a wide variety of literary and non-literary writing genres.

Those students who elect to take ELA Honors courses will receive more comprehensive grounding in the historical development and landmark texts of Western literary culture than will students in ELA College Preparatory courses. ELA Honors courses are designed for students who do not just appreciate, but actively love literature, read avidly and well on their own, and who strive not just for competence, but marked expertise in writing.

Honors and AP courses can demand up to twice as much time as College Preparatory courses, due to their heavier work load in vocabulary, reading, writing, and independent study. Joint CP/Honors assessments are typically assessed on a more demanding scale for Honors/AP students.

At a more relaxed pace, College Preparatory courses are designed to help students experience literature and rhetoric in various media as sources of learning and pleasure, and to recognize and appreciate the role

literature and rhetoric plays in American culture. College Preparatory courses are designed to help students develop sound reading and writing skills that will serve them well in college and the workplace.

English I (College Prep) # 194

5 Credits

This course continues to develop fundamentals of literacy introduced at the middle school level. Particular emphasis will be placed on understanding grammar rhetorically, on recognizing how specific grammatical choices enable writers to manipulate emphasis and meaning. Students will combine and modify sentences so as to emphasize particular ideas. By the end of the year, students should have a clear grasp of: the function of a thesis in analytical arguments, how and why to support a thesis with evidence, how to analyze that evidence, and how to present quoted evidence effectively and accurately. Students will learn important distinctions between key rhetorical modes. Students will be continually pressed to write clearer, more specific, more complicated, and more comprehensive paragraphs. Students will be exposed to samples of the following genres: non-fiction essays/arguments, short stories, short lyric poems, epic poetry, plays, and novels. Students will demonstrate their knowledge of the meaning and usage of real-life vocabulary. Some, but not all, reading and writing for this course will occur during class hours. 8-10 pages of formal, typed written assignments per semester.

English I (Honors) # 195

5 Credits

This course will rapidly review and assess students' mastery of fundamentals of literacy introduced at the middle school level. Particular emphasis will be placed on understanding and using grammar rhetorically, how specific grammatical choices enable writers to manipulate emphasis and meaning. Students will combine and modify sentences so as to emphasize particular ideas. By the end of the year, students should have a clear grasp of the function of a thesis in analytical arguments, of how to support a thesis with evidence, of how to analyze that evidence, and of how to present quoted evidence effectively and accurately. Students will learn important distinctions between key rhetorical modes. Students will be continually pressed to write clearer, more specific, more complicated, and more comprehensive paragraphs, and to assemble and link a series of paragraphs into a polished, sustained essay. The course will provide students with an introduction to basic literary genres and to thinking about genre. Students will be exposed to samples of most or all of the following genres: short lyric poems, an ancient play or epic, a Shakespearean play, a modern play, novels (classic and contemporary), non-fiction essays/arguments, film. Students will demonstrate their knowledge of the meaning and usage of real-life vocabulary. Most reading, drafting, and final revision of papers for this course will be assigned as homework. Class time will be largely dedicated to discussion and intermediate revision. 12-14 pages of formal, typed writing assignments per semester.

English II (College Prep) # 104

5 Credits

This course will briefly review and assess core literacy skills covered in English I CP: intermediate grammar, punctuation, vocabulary, intermediate rhetorical and literary concepts. Emphasis on sentence clarity and rhetorical control will continue, reinforced through attention to choosing effective words, using verb tense and verb voice appropriately, noun-pronoun and noun-verb agreement, recognizing and correcting misplaced modifiers, and expressing one's ideas concisely yet completely. Students will practice academic writing to prepare for the March MCAS test, with an

emphasis on critical analyses of short readings and practice in Long Composition. Students will continue to work on developing meaningful theses for analytical arguments, supporting their theses with relevant, well-selected and well-analyzed evidence, presenting quoted evidence effectively and accurately. Students will review and extend their understanding of key rhetorical modes. Students will be coached in assembling and linking a series of paragraphs into a polished, sustained essay, particularly the five-paragraph essay form required on the MCAS and SAT exams. Students will receive training and practice in essay exam writing and reading practices tested on the MCAS and SAT exams. The course will provide students with a sampling of iconic texts of American literary history and of non-fictional texts addressing contemporary cultural issues and debates. Students will demonstrate their knowledge of the meaning and usage of real-life vocabulary. Some, but not all, reading and writing for this course will occur during class hours. 8-12 pages of formal, typed writing assignments per semester.

English II (Honors) # 105

5 Credits

It is strongly suggested that students looking to take this course earned a grade of 80 or better in an honors level English I course. Students who earned at least an A- in a college prep English I course may also consider taking this course, with the understanding that both the pace and difficulty will be greatly increased. This course extends core literacy skills covered and in English I Honors. Emphasis on a rhetorical understanding and use of grammar will continue.

Students will practice academic writing to prepare for the March MCAS test, with an emphasis on critical analyses of short readings and practice in Long Composition (extended analysis of character in a play or novel). Students will continue to work on developing meaningful theses for analytical arguments, supporting their theses with relevant, well-selected and well-analyzed evidence, presenting quoted evidence effectively and accurately. Students will review and extend their understanding of key rhetorical modes. Students will attend to writing precision.

The course's reading and thematic content will emphasize American cultural and literary history. Students will be exposed to secondary sources and will summarize and assess these critics' varying viewpoints. Students will demonstrate their knowledge of the meaning and usage of real-life vocabulary. Some, but not all, reading and writing for this course will occur during class hours. Most reading, drafting, and final revision of papers for this course will be assigned as homework. Class time will be largely dedicated to discussion and intermediate revision. 12-14 pages of formal, typed writing per semester.

English III (College Prep) # 114

5 Credits

This course develops students' reading, writing, thinking, and speaking skills as they interact with literary, expository, and visual texts across a broad range of genres. This course is tailored to develop solid comprehension and communication skills that students might apply in a variety of academic and professional settings. Though specific text selections may vary with the instructor, all course sections will read one or more samples from the following five categories: Shakespearean play; 19th century novel and/or non-fiction; 20th or 21st century novel or grouped short stories; 20th-21st century non-fiction; poetry. Combined with or in addition to these categories, students will read a sample of classical or world literature in translation, of secondary criticism, of film or other visual media that is in dialogue with a verbal text. Core writing work

will include or combine the following five assignment types: rhetorical synthesis/summary of text(s); compare/contrast analysis; assignment requiring engagement with both primary and secondary sources; issue-oriented persuasive writing (SAT writing); reflective, personal writing (preparation for college admission essays and informal responses to reading). Writing work may also include imitative/creative writing in a literary genre and/or workplace writing/reporting. Supporting this reading and writing work will be class discussion and oral presentation, vocabulary development work, and coaching/practice in the protocols of revising and editing prose for clarity and concision. Students should anticipate a reading pace averaging 40-60 pages or +/- three hours per week; they should also anticipate a minimum of 1-2 formal, typed writing assignments per term, and 2 or more in-class writing assignments per term. Some classroom time will be provided for supported drafting/composition of formal papers.

English III (Honors) # 115

5 Credits

It is strongly suggested that students looking to take this course earned a grade of B- or better in an honors level English II course. Students who earned at least an A- in a college prep English II course may also consider taking this course, with the understanding that both the pace and difficulty will be greatly increased.

English 3 Honors develops students' reading, writing, thinking, and speaking skills as they interact with literary, expository, and visual texts across a broad range of genres. This course is tailored to support students' further pursuit of studies in the humanities and social sciences in college. Though specific text selections may vary with the instructor, all course sections will read at least one (and often several) samples from the following five categories: Shakespearean play; 19th century novel and/or non-fiction; 20th or 21st century novel or grouped short stories; 20th-21st century non-fiction; poetry. Combined with or in addition to these categories, students will read a sample of classical or world literature in translation, of secondary criticism, of film or other visual media (that is in dialogue with a verbal text). Core writing work will include or combine the following five assignment types: close rhetorical/literary analysis of text(s); compare/contrast analysis; assignment requiring engagement with both primary and secondary sources; issue-oriented persuasive writing (SAT writing); reflective, personal writing (preparation for college admission essays and informal responses to reading). Writing work may also include imitative/creative writing in a literary genre. Supporting this reading and writing work will be class discussion and oral presentation, vocabulary development work, and coaching/practice in the protocols of revising and editing prose for clarity and concision. At the Honors level, students should anticipate a reading pace averaging 60-90 pages or +/- four hours per week; they should also anticipate 2-3 formal, typed writing assignments per term, and 3 or more in-class writing assignments per term. Reading content, discussion protocols, and assessment standards will be more challenging than at the CP level. In-class support of formal paper writing will focus on revision rather than on initial drafting/composition.

English IV (College Prep) # 124

5 Credits

This course develops students' reading, writing, thinking, and speaking skills as they interact with literary, expository, and visual texts across a broad range of genres. This course is tailored to develop solid comprehension and communication skills that students might apply in a variety

of academic and professional settings. Though specific text selections may vary with the instructor, all course sections will read and compare at least two samples from the following three categories: drama; 20th-21st century fiction; 20th-21st century non-fiction. These core readings will be supplemented with readings from additional genres and periods and media, as well as with independent reading. Core writing work will revisit and develop skills in the five major assignment types covered in English 3CP: rhetorical synthesis/summary of text(s); compare/contrast analysis; assignment requiring engagement with both primary and secondary sources; issue-oriented persuasive writing (SAT writing); reflective, personal writing (preparation for college admission essays and informal responses to reading). Writing work may also include imitative/creative writing in a literary genre and/or workplace writing/reporting. Supporting this reading and writing work will be class discussion and oral presentation, vocabulary development work, and coaching/practice in the protocols of revising and editing prose for clarity and concision. Students should anticipate a reading pace averaging 40-60 pages or +/- three hours per week; they should also anticipate a minimum of 1-2 formal, typed writing assignments per term, and 2 or more in-class writing assignments per term. Some classroom time will be provided for supported drafting/composition of formal papers.

English IV (Honors) # 125

5 Credits

It is strongly suggested that students looking to take this course earned a grade of 80 or better in an honors level English III course. Students who earned at least a 90 in a college prep English III course may also consider taking this course, with the understanding that both the pace and difficulty will be greatly increased.

English IV Honors develops students' reading, writing, thinking, and speaking skills as they interact with literary, expository, and visual texts across a broad range of genres. This course is tailored to support students' further pursuit of studies in the humanities and social sciences in college. Though specific text selections may vary with the instructor, all course sections will read and compare at least two substantial texts or collections from the following four categories: drama; 18th-21st century fiction; 18th-21st century non-fiction; 17th-21st century poetry. These core readings will be supplemented with readings from additional genres and periods and media. Core writing work will revisit and develop skills in the five major assignment types covered in English 3 Honors: close rhetorical/literary analysis of text(s); compare/contrast analysis; assignment requiring engagement with both primary and secondary sources; issue-oriented persuasive writing (SAT writing); reflective, personal writing (preparation for college admission essays and informal responses to reading). Writing work may also include imitative/creative writing in a literary genre or a student-developed independent project. Supporting this reading and writing work will be class discussion and oral presentation, vocabulary development work, and coaching/practice in the protocols of revising and editing prose for clarity and concision. At the Honors level, students should anticipate a reading pace averaging 60-90 pages or +/- four hours per week; they should also anticipate 2-3 formal, typed writing assignments per term, and 3 or more in-class writing assignments per term. Reading content, discussion protocols, and assessment standards will be more challenging than at the CP level. In-class support of formal paper writing will focus on revision rather than on initial drafting/composition.

AP Literature and Composition: # 126**5 Credits**

A full-year course offered to seniors who have taken honors level courses in their junior year, AP Literature and Composition is a college freshman level literature and composition course. The reading theme for this course will be “Survey of English Literature.” Readings will include samples of the English essay tradition (partly to prepare/inspire students’ work on college essays), an extensive unit on traditional English poetry and prosody, a Shakespeare play, 4-6 English novels (likely Jane Austen, Mary Shelley, Charles Dickens, E. M. Forster, James Joyce, Joseph Conrad, Virginia Woolf), an extensive unit on Victorian and modern English/American poetry and prosody, and several secondary critical readings. Students will acquire terminology and analytical skills to closely examine and interpret structure, style, theme, context, and figurative language informing iconic literary texts from various genres and periods. Three formal critical writing assignments per term. Two in-class exam-writing assignments per term. Brief (under three week) intensive exam preparation session during the third term. This class prepares students to take the AP Literature Exam.

Literature and Film: # 145**2.5 Credits**

This one-semester course will examine literary texts paired with filmed adaptations. 8-10 Pairings. Pairings may include The Bible and DeMille’s 10 Commandments, Homer’s Odyssey and the Coen brothers’ Oh Brother Where Art Thou?, Chretien de Troyes’ medieval romances and The Holy Grail, T.S.Eliot’s The Waste Land and Terry Gilliam’s The Fisher King, Hamlet in various versions, E.M. Forster and Merchant-Ivory’s versions of Howard’s End, Conrad’s Heart of Darkness and Apocalypse Now, Virginia Woolf’s Mrs. Dalloway and Michael Cunningham’s The Hours, Nick Hornby’s High Fidelity. What happens to a literary work when it moves from page to screen? What can be enhanced? What lost? How does the role of the reader/viewer change in relation to either kind of text when one shifts between mediums? How do significant gaps in time between the production of the literary and the film text affect our experiences of either? How does the casting of film “stars” affect our understanding of literary characters as they are represented in movies? Students should expect to write formal critical essays on at least four of the pairings, and will be held accountable for unfamiliar vocabulary encountered in them. Students will research and write a critical and oral report on one novel and/or film pairing that they research independently.

***NOTE: 70% of required screenings will take place outside of class.**

Creative Writing (Honors Elective): # 152**5 Credits****Expectation: 80 in previous Honors English course****90 in previous College Preparatory English course**

This year-long course allows students to try their hand at writing creatively in various literary genres. While creative writing assignments will be significantly self-directed, this class will include some traditional academic assignments in reading, grammar, vocabulary, and critical writing. Students will also spend significant time producing and editing a literary magazine. While most of the readings in this course will be short (many will be pulled from contemporary literary magazines), we will still read some novels and longer nonfiction texts. We may even read and write a play or a screenplay. Over the course of the year, students will be asked to consider broad questions about the craft of writing: What is the difference

between a story and a scene? What makes a story artful? What are the hallmarks of the different genres and subgenres we've read in class? What do I admire in other authors' writing, and how can I get my writing to be more like theirs?

English Language Development I-IV #166

5 Credits

These courses provide explicit, direct instruction about the English language intended to promote English language acquisition. They include learning outcomes in speaking, listening comprehension, reading and writing. The four courses progressively address social and academic vocabulary, grammar and syntax commonly used in both social and academic communication, and strategies that promote second language learning and content learning. Language instructions is closely aligned with grade-appropriate content standards.

History and Social Sciences

Philosophy

“History,” as David McCullough once put it, “is who we are and why we are the way we are.” Indeed, the study of history and the social sciences is the study of relationships among people. By promoting understanding and reasoning about these relationships, the History and Social Sciences department encourages and empowers students to act as informed citizens in our democracy.

Courses offered by the History and Social Sciences department instruct students in content necessary for civic participation. Through the examination of the United States from its inception to the present day, students gain an understanding of the unique characteristics of American society and the historical development of its social structure, its economic system, and its political organization. The department not only seeks to help students place themselves within their local and national communities, but to understand their role in a global community through the study of world history. Students also have opportunities to view human behavior through the interpretive framework of the social sciences and to practice the research methods employed by these disciplines. Themes identified as being especially important to competing in a 21st century economy, including global awareness, civic literacy and economic literacy, are woven into the content of these courses.

Pursuant to the goal of preparing students to participate in a democracy, every course offered by the History and Social Sciences department teaches students to think critically, to assess and interpret evidence, to access and evaluate information through research, and to understand change over time. Moreover, students refine their abilities to engage in compelling speech and express themselves clearly in the written word. In so doing, graduates of Littleton High School are equipped to meet the democratic imperative of our society.

World History II (Honors) # 295 Grade 9

5 Credits

This course focuses on the political, social, and economic history of the world beginning with the French Revolution. The course will investigate the development of free institutions, the struggles of the working

people, and imperialism worldwide during the 19th century. Key areas of focus for the 20th century include the two world wars, the superpower era, and the contemporary world. Students gain an understanding of each key area of study through the use of music, art, literature, maps, primary sources, simulations, and statistics. Throughout the year, students will be engaged in analyzing social, political and economic problems. It is expected that students will demonstrate advanced analytical, writing, reading, speaking and studying skills. In addition, honors students should be highly motivated, independent workers and thinkers. Honors history is appropriate for students who consistently earned As and Bs in eighth grade world history, especially on history assessments. Students will also produce at least one significant research product.

World History II (College Prep) # 294 Grade 9

5 Credits

This course focuses on the political, social, and economic history of the world beginning with the French Revolution. The course will investigate the development of free institutions in, the struggles of the working people, and imperialism worldwide during the 19th century. Key areas of focus for the 20th century include the two world wars, the superpower era, and the contemporary world. Students gain an understanding of each key area of study through the use of music, art, literature, maps, primary sources, simulations, and statistics. Throughout the year, students will be engaged in analyzing social, political and economic problems. Emphasis is placed on writing, reading, listening, speaking, and study skills. Students will also produce at least one significant research product.

United States History I (Honors) # 205 Grade 10

5 Credits

This course will trace the early developments of the United States, from the political, economic, and social factors which led to the American Revolution through the end of the 1800s. Emphasis will be placed on the Constitution as a living framework for the growth of American democracy and its republican government. The course will further explore the pressures put on that government through the period of westward expansion, changing foreign policies, and sectionalism. Students will be required to read primary and secondary sources, to respond to document based questions, and to engage in essay writing to enhance their understanding of the curriculum. Advanced skills in reading, analysis, and writing will be necessary for successful completion of this honors course and will be needed for the major research paper required in this course. Students will also produce at least one significant research product.

United States History I (College Prep) # 204 Grade 10

5 Credits

This course will trace the early developments of the United States, from the political, economic, and social factors which led to the American Revolution through the end of the 1800s. Emphasis will be placed on the Constitution as a living framework for the growth of American democracy and its republican government. The course will further explore the pressures put on that government through the period of westward expansion, changing foreign policies, and sectionalism. Students will be required to read primary and secondary sources, to respond to document based questions, and to engage in essay writing to enhance their understanding of the curriculum.

AP United States History (Advanced Placement) # 216 Grades 11 & 12 5 Credits

AP U.S. History is a challenging course that is meant to be the equivalent of a freshman college course in which students may earn college credit. It is a full year survey of American History from the age of exploration and discovery to the present. Solid reading and writing skills, coupled with a willingness to devote considerable time to homework and study, are necessary to succeed. Emphasis is placed on critical and evaluative thinking skills, essay writing, interpretation of original documents, and scholarly materials. Students will also engage in authentic historical inquiry by researching Littleton's past and creating a Local History Project. Students are expected to take the AP exam. This course is intended for students in their junior year.

United States History II (Honors) # 215 Grade 11 5 Credits

The development of the United States is traced from the international events involving the United States beginning in the late 1800s through domestic and foreign events at the end of the twentieth century. This course is designed for college preparatory students. The main emphasis of the course is on the development of the nation—economically, socially, politically—and the growth of a distinctive American way of life. Students enrolled in the honors course are expected to demonstrate advanced skills in the areas of reading, analysis, and writing which will be enhanced throughout the year with rigorous primary source readings and writing assignments. These skills will be necessary for successful completion of the major research paper required in this course. Students will also produce at least one significant research product.

United States History II (College Prep) # 214 Grade 11 5 Credits

The development of the United States is traced from the internal events involving the United States beginning in the late 1800s through domestic and foreign events at the end of the twentieth century. This course is designed for college preparatory students. The main emphasis of the course is on the development of the nation—economically, socially, politically—and the growth of a distinctive American way of life. Students will improve their skills in reading primary and secondary sources, and in responding to document based questions. Essay writing will be emphasized to prepare students for subject-area standardized tests.

AP Psychology (Advanced Placement) # 226 Grades 11 & 12 5 Credits

This challenging class is designed to be equivalent to a college level freshman psychology course. In this course students will be introduced to the systematic and scientific study of the behavior and mental processes of human beings and other animals. Topics will include the biological basis of behavior, learning, memory, sensation and perception, emotion and personality in addition to the principles associated with each of the major subfields within psychology. Part of the course is devoted to preparation for the AP exam, which students are strongly encouraged to take. Students will have a summer assignment which must be completed before the start of the year. NOTE students may enroll in this class as either a social studies course or as a science class.

Facing History and Ourselves

The Holocaust, Genocide and Human Behavior (Honors) # 233

5 Credits

Open to students who have successfully completed USII or AP US History only.

This Facing History course will follow the scope and sequence of Facing History and Ourselves using the resource book *Holocaust and Human Behavior*. It will lead students to an understanding of history as a sequence of events resulting from actions and decisions made by individuals instead of seeing history as a series of inevitable events. Students will examine their roles and responsibilities as global citizens and understand the diameters of their “universes of obligation” and the potential for a wide-reaching impact that each individual has on a daily basis. These themes will be examined through a series of readings, videos, activities, and reflections. The primary historical case study will be an examination of the Holocaust, followed by shorter units that examine genocides in the 20th and 21st centuries. Students will reflect on the universality of racism and social injustice, the importance of global awareness and the potential for each person to make a difference. Students are required to attend at least FOUR class film viewings beyond the school day.

AP Art History (Advanced Placement) # 217 Grades 10, 11, & 12

5 Credits

This course is designed to provide Littleton students with the same background in art history as an introductory college course in art history. Students electing this course will study a diverse historical and cultural sampling of the major works of art represented in various art forms: architecture, sculpture, painting, and other art forms. Students will learn to observe art intelligently and critically as well as analytically. It is the goal of this course to provide students with an opportunity to interrelate their knowledge of history and literature in order to enrich their understanding of art history. While no prior knowledge of art history is assumed, this course does require a high degree of academic commitment in order to meet college standards.

American Civics (College Prep) # 239

Grades 11-12

2.5 Credits

This class is a semester long course focusing on the government in one’s life. The objective is to have the students leave a more informed voter and citizen. The class studies the details of how the US government is made up through examples in history, simulations, case studies, media, and their own research. The class also will look at how the government and law affects citizen’s lives through case studies, scenarios, historic examples, media, and more.

Economics (College Prep) # 235

Grades 11-12

2.5 Credits

The study of economics attempts to provide answers to the perennial question of “how do individuals and societies satisfy unlimited wants with limited resources?” This course, by providing a foundational knowledge of economics, will equip students with the skills to make informed answers to this question. Special emphasis is placed on acquiring sufficient economic literacy critical to acting as a citizen in a democratic society. The course explores topics including, but not limited to, basic microeconomic and macroeconomic theory, supply and demand relationships, the business cycle, the causes of inflation and unemployment, the roles of fiscal and monetary policy, the stock market, and international trade and exchange rates. Students will also examine current events through the lens of material studied in this course.

US Film Goes to War #196**2.5 Credits**

US Film Goes to War will focus on the changes of how the United States viewed war in popular culture. The class will be focused on writing and project based learning. The class will examine how the film was a reflection on public opinion about certain wars, war in general, any political agendas, and any personal agendas. The class will watch selected films, write reviews or create projects and compare the films to primary documents/previously learned material. The objectives of the class will include the production of a five paragraph essay or creative research project (and longer assignment for the final) for every film we watch, comparing the films we watch to primary documents, and explaining the political and social impacts of the films. Some of the films that will be covered will be *All Quiet on the Western Front* , *Sergeant Yorke*, *Objective Burma*, *Bridge over the River Kwai*, *Paths of Glory* , *The Green Berets*, *A Bridge Too Far*, *Platoon* , *Saving Private Ryan*, *Black Hawk Down* and possibly more. Films will vary depending on time.

Intro to Sociology #222**Grades 11 - 12****2.5 credits**

Intro to Sociology and Psychology will be a semester long survey course at the College Preparatory level that will encourage students to develop their critical thinking skills through case studies, writing assignments and project based learning. Students will spend the semester studying introductory concepts in sociology including culture, socialization, social norms and mores, deviance, group dynamics, inequality and power, and identity formation. The course will encourage self-reflection and will incorporate current events that apply directly to the different areas of study. The class will also connect topics to historical eras or events studied previously. The course will culminate in a project that will require students to demonstrate their understanding of one or more of the topics of study through assembling research and data and presenting their findings to their peers.

Intro to Psychology #227**Grades 11 - 12****2.5 credits**

Intro to Psychology will be a semester long survey course at the College Preparatory level that will encourage students to develop their critical thinking skills through case studies, writing assignments and project based learning. During the semester, students will study topics in psychology including learning, memory, consciousness, motivation, sensation and perception, personality and psychological disorders. The course will encourage self-reflection and will incorporate current events that apply directly to the different areas of study. The class will also connect topics to historical eras or events studied previously. The course will culminate in a project that will require students to demonstrate their understanding of one or more of the topics of study through assembling research and data and presenting their findings to their peers.

MATHEMATICS**Philosophy**

Realizing that today's society places many demands upon the individual, we assume the task of relating mathematics as a functional, meaningful, and basic tool necessary in all aspects of life. We are

committed to educating students to become logical thinkers by expanding their mathematical capabilities and interests and by including the use of technology.

Students are expected to be active participants in the educational process, and, along with their teachers, assume responsibility for the learning of mathematics. As educators we recognize that while all students can benefit from the study of mathematics at various levels, not all students proceed at the same pace. Timed assessments in all courses are frequent to ensure that students are grasping new concepts at an appropriate pace and depth.

We recognize that each student is capable of learning and should be made aware of the usefulness and practicality of mathematics. The ultimate goal is to develop an attitude in the students that will stimulate curiosity in, and an appreciation of, mathematics.

“Mathematical problem solving is the hallmark of an effective mathematics program. Skill in mathematical problem solving requires practice with a variety of mathematical problems as well as a firm grasp of mathematical techniques and their underlying principles. Armed with this deeper knowledge, the student can then use mathematics in a flexible way to attack various problems and devise different ways of solving any particular problem. Mathematical problem solving calls for reflective thinking, persistence, learning from the ideas of others, and going back over one’s own work with a critical eye. Success in solving mathematical problems helps to create an abiding interest in mathematics.” - The Massachusetts Mathematics Curriculum Framework

The Transition into High School

The Littleton Mathematics Department believes a strong foundation of Algebra I is necessary in order for any student to complete four successful years in mathematics. It has been recognized that students develop mathematical skills at different stages, therefore, the Algebra I curriculum is offered in both the 8th grade and 9th grade school years. Students are to complete this course at the best time suited for their own success.

Students who wish to take Geometry before entering high school are encouraged to do so only by following a Common Core-aligned curriculum. Students who wish to “test out” of Geometry at Littleton High School must take, and pass, a geometry proficiency exam, given at LHS in June of their 8th grade year. Doing so must be scheduled with the Mathematics Curriculum Coordinator. Students who do not meet the minimum requirements of this exam must enroll in and complete a geometry course.

In all of the math courses, calculators will be used to enhance and assist student learning. While there are some topics for which calculators will not be used, the TI-84 Plus graphing calculator is required and essential for success in many areas of these math courses.

Honors and AP Courses

When considering an honors course, students should be aware that honors courses are demanding and progress at a rigorous pace, covering the greatest breadth and depth of topics. Students in honors courses

are expected to have mastered the skills and thoroughly understood the concepts covered in prior courses and should expect 45 minutes of daily homework. Students in honors courses:

- have the ability to grasp new concepts at a rigorous pace without intervention
- are able to apply skills and concepts to new and non-routine situations
- are independent and self-motivated learners
- complete assessments in a timely manner utilizing the most efficient strategies
- take responsibility for their own learning and independently seek help when needed

Algebra I # 317

5 Credits

Expectation: any student who has not had successful completion of Algebra I

This first course in Algebra is designed to develop a solid background in algebraic skills. Students will learn many of the areas of algebra necessary for the success in higher levels of mathematics. Also, this course introduces students to algebraic concepts that may be tested on the MCAS, PSAT, and SAT exams. The concepts of order of operations, multi-step equations, writing equations of linear functions, graphing linear functions and inequalities on coordinate planes, slope, parallel lines, systems of equations, data interpretations, and operations on polynomials will be explored. Students will apply logical thinking throughout the course.

Geometry (College Prep) # 304

5 Credits

Expectation: successful completion of Algebra I

This course in Euclidean Geometry is designed to develop a solid background in geometric skills. Students will learn many of the areas of geometry necessary for success in higher levels of mathematics. This course also introduces students to geometrical concepts that may be tested on the MCAS, PSAT, and SAT exams. The concepts of points, lines, planes, parallel lines, congruence, similarity, probability, ratios, polygons, coordinate geometry, area, volume, circles, transformations, symmetry, and right triangle trigonometry will be explored. Students will apply logical thinking throughout the course, without an emphasis on formal proofs. Students are expected to have, and be able to use, solid algebra skills to solve problems in each topic area.

Geometry (Honors) # 305

5 Credits

Expectation: 85 in Algebra I

This course in Euclidean Geometry gives students extensive preparation in two-dimensional geometry as well as an introduction to three-dimensional concepts. The concepts of proof are intertwined with the properties of form and shape. Major topics covered include properties of parallel lines, congruence, similarity, coordinate geometry, polygons, trigonometry, geometric probability, circles, transformations, area and volume. Students will apply logical reasoning throughout the course and will be introduced to proofs in a variety of forms. The Geometers' Sketchpad software and the tools of geometry will be used to explore geometric concepts and applications. A scientific calculator is essential for success in this course.

Intermediate Algebra # 322**5 Credits****Expectations: successful completion of Algebra I and Geometry (this class is recommended for the student with less than a 70 in Algebra I or Geometry).**

This course is intended for students who have completed Algebra 1 and Geometry, but need re-teaching, reinforcement, and/or remediation of algebra and geometry skills before enrolling in Algebra II.

Successful completion of this course will prepare students for the CP Algebra II course here at LHS.

Topics discussed in this course include linear, quadratic, exponential functions, trigonometry, and discrete math. Emphasis will be placed on real-world applications of these topics. The pace of this course will be fairly deliberate, recognizing the need to review previously learned concepts.

Algebra II (College Prep 1) # 313**5 Credits****Expectation: Successful completion of Algebra I and Geometry**

Description: This second course in algebra solidifies many of the concepts presented in Algebra I and provides the necessary preparation for subsequent math courses the students will take. Students will be using their fundamental skills that were taught in Algebra I, Geometry, and/or Intermediate Algebra to enhance their understanding of algebra. Additional support and resources will be provided to assist student learning. Topics in this course will include: applications of linear equations and inequalities, systems of linear equations inequalities, a variety of functions including quadratic, polynomial, rational, exponential, logarithmic, and trigonometric. Students will also use and interpret graphs to solve problems, as well as, model and solve real-world problems. Topics will be covered from the Common Core Standards for Algebra II.

Algebra II (College Prep) # 314**5 Credits****Expectation: successful completion of Algebra I and Geometry (it is recommended that students have a final grade of at least a 75 in both classes with a teacher recommendation.)**

The second course in algebra solidifies many of the concepts presented in Algebra I and provides the necessary preparation for subsequent math courses the students will take. This course will cover material more in depth and move at a more accelerated pace than the Algebra II CP1 course. It is aligned with the Common Core Standards for Algebra II. Topics in this course will include applications of linear equations and inequalities, systems of linear inequalities, and a thorough study of quadratic, polynomial, rational, exponential, logarithmic, and trigonometric functions. Students will also use and interpret graphs to solve problems, as well as, model and solve real-world problems.

Algebra II (Honors) # 315**5 Credits****Expectation: 80 in Honors Geometry and 90 in Algebra I**

Students who earned a grade of 90 or higher in a college prep geometry or algebra I course may also consider taking this course. Students in this situation are strongly encouraged to talk to their current teacher before enrolling in this course.

This intense course is intended for the mathematically confident student as preparation for advanced high school courses in pre calculus and calculus, and is aligned with the Common Core Standards for Algebra II.

In this course, topics include applications of linear equations and inequalities, systems of linear inequalities, and a thorough study of quadratic, polynomial, rational, exponential, logarithmic, and trigonometric functions. Additional topics include radical equations, rational exponents, matrix operations, vectors, sequences and series, and probability distributions. A heavy emphasis is placed on using mathematical techniques in efficient ways to model and solve real-world problems.

Precalculus (College Prep) # 332

5 Credits

Expectation: 75 in Algebra II CP

This course is intended as preparation for college courses in precalculus or calculus, and will be aligned to the Common Core Standards for Precalculus.

In this course, topics include a thorough study of functions, including polynomial, rational, exponential, logarithmic, and trigonometric functions. Emphasis is placed on graphing functions and on applications of functions as appropriate. Other topics include conic sections, matrices, vectors, sequences, and series.

Precalculus (Honors) # 333

5 Credits

Expectation: 80 in Algebra II Honors or successful completion of Algebra II CP with recommendation of that teacher

Students who earned at least an 90 in a college prep Algebra II course may also consider taking this course, with the understanding that both the pace and difficulty will be greatly increased. Students in this situation are strongly encouraged to talk to their current teacher before enrolling in this course.

This course is intended as preparation for students intending to enter into AP Calculus, and will be aligned to the Common Core Standards for Precalculus.

In this course, topics include a thorough study of functions, including polynomial, rational, exponential, logarithmic, and trigonometric functions. Emphasis is placed on graphing functions and on applications of functions as appropriate. Other topics include conic sections, matrices, vectors, sequences, and series.

Statistics (College Prep) # 337

5 Credits

Expectation: successful completion of Algebra II

The focus of this course is descriptive statistics with an introduction to both probability and inferential statistics. Students will learn to collect organize and display relevant data and use the appropriate statistical method to analyze the data. They will learn to design surveys to generate data, choose representative samples, and identify biases in samples and survey questions. Students will also apply basic concepts of probability as it relates to statistics and compare the results of

experimental probability with predicted probability. The emphasis for this course is on active learning, the use of real-world data, and technology integration. **(Students may opt to take this course for dual enrollment credit.)**

AP Statistics (Advanced Placement) # 306

5 Credits

Expectation: 85 in Honors Algebra II or successful completion of CP Precalculus with recommendation of that teacher.

This rigorous course is designed for students who have successfully completed Pre-calculus and who are capable of a high level of independent learning. This course is taught at a very rapid pace, to ensure that all topic on the Advanced Placement Exam are studied. In this course, students will develop strategies for collecting, organizing, analyzing, and drawing conclusions from data. Students will design, administer, and tabulate results from surveys and experiments and use appropriate measures to describe the data. Students will use sampling distributions to provide the basis for confidence intervals and hypothesis tests and apply their use to real world applications. Students will be expected to critically examine and interpret data studies in the context of statistical concepts. The emphasis for this course is on active learning, the use of real-world data, and technology integration. The pace of this course is very demanding and students should expect at least 45 minutes of daily homework a night. Students should expect to work with classmates outside of school. Timed assessments are frequent to ensure that students are grasping new concepts at the appropriate pace and depth to prepared them for the demands of the Advanced Placement Exam, given in May. Students enrolled in this course are expected to take the AP exam offered in May.

Calculus (Honors) # 334

5 Credits

Expectation: 85 in Pre-Calculus Honors

Students who earned a grade of 85 or higher in a college prep PreCalculus course may also consider taking this course. Students in this situation are strongly encouraged to talk to their current teacher before enrolling in this course.

This course is intended for the advanced high school student looking for an overall view of a college level calculus course. A thorough study of limits, continuity, derivatives, related rates, optimization, graphing polynomial functions, and integration will permeate the course.

AP Calculus (Advanced Placement) # 335

5 Credits

Expectation: 85 in Pre-Calculus Honors

This intense, rigorous course is designed for high-performing students who are capable of a high level of independent learning. This course is taught at a very rapid pace, to ensure that all topics assessed on the Advanced Placement Exam are studied. The first semester focuses on limit theory and the study of derivatives and their applications. The second semester focuses on definite and indefinite integrals, their connection to area and volume, the Fundamental Theorem of Calculus, and differential equations. The pace of this course is very demanding. Students should expect at least 45 minutes of daily homework and are expected to work with their classmates outside of school. Timed assessments are frequent to ensure that students are grasping new concepts at an appropriate pace and depth and to help prepare students for

the demands of the Advanced Placement Exam, given in May. Students enrolled in this course are expected to take the AP exam offered in May.

SCIENCE

Philosophy

The science curriculum at Littleton High School is designed to address Littleton High School's mission that all students will learn and achieve at a high level. We believe that students should be exposed to the process of scientific inquiry so they can acquire and interpret scientific knowledge, and begin to realize the wider applicability of scientific problem-solving methods. By making the laboratory the focal point of learning, rather than a lecture-reading method, we seek to foster students' appreciation for the scientific process.

The science experience begins with all freshman students enrolled in Biology. After the successful completion of freshman Biology, course selections should reflect a student's ability, interests, and future educational and career plans. The student may choose to be introduced to the content and methods of several of the sciences or may wish to concentrate, doing advanced work in one or two of the sciences. All courses and levels are designed to vary in rigor, breadth and depth of coverage.

By graduation, all students will have the opportunity to master the following fundamental goals:

1. Application of the principles, laws, and fundamental understandings of the natural sciences.
2. Ability to observe, inquire and critically analyze a scientific investigation.
3. Understand and apply the scientific method design process.
4. Experience common and cutting edge laboratory techniques.
5. Oral, graphical and written presentations that focus on using evidence to support a scientific inquiry.

AP Biology (Advanced Placement) # 461 Grades 11 & 12

5 Credits

Expectations: 80 in Biology and Chemistry

This challenging course is designed to be equivalent to a college freshman biology course. The course will review Honors Biology content, and go into much more depth as well as cover the additional content areas of plant systems, reproduction and development, animal behavior and a survey of all living organisms. A major focus is given to the design and conducting experiments and laboratory skills are developed. Part of the course is devoted to preparation for the AP exam, which students are strongly encouraged to take. This course will require summer work to be completed prior to the start of the school year. It is anticipated that students will have achieved a minimum of a B- in both Biology I and Chemistry I or have teacher recommendation for enrollment.

AP Biology (Advanced Placement) Lab # 471 Grades 11 & 12

2.5 Credits

Expectations: 80 in Biology and Chemistry

Students enroll in this half-year lab section concurrently with AP Biology.

This enrollment is required with the AP Biology class.

Biology (Honors) #492**5 Credits**

This rigorous course is designed for students who are able to independently read and understand high school-level science text and to analyze and synthesize key information in preparation for the application of this information during class. The approach will include inquiry-based activities with skill development in the use of tables and graphs, making predictions, formulating hypotheses, designing experiments and analyzing data. Content areas include the chemistry of life, structure and function on the cellular level, continuity of life (genetics), evolution and biodiversity, major human body systems, and ecology. All content will be covered in depth and at a fast pace students are expected to keep up with and complete all assignments and should expect two long-term projects. Students who enroll in this class will be well prepared to take the High School Biology MCAS exam as well as AP level science classes as an upperclassman. It is expected that Honors Biology students will be academically motivated and that they have earned an A or B in 8th grade science or have a teacher recommendation.

Biology (College Prep) # 491**5 Credits**

This course is designed to acquaint students with the fundamentals of biology and prepare for college level biology. The approach will be inquiry based with emphasis on using tables and graphs, predicting, formulating hypotheses, designing experiments and analyzing data. Content areas include the chemistry of life, structure and function on the cellular level, continuity of life (genetics), evolution and biodiversity, major human body systems, and ecology. One long term project each term should be expected.

Earth Science (College Prep) # 494**5 Credits**

Earth Science is a full year course in which students study the origin and structure of physical phenomena related to the earth and the universe. It covers the following major concepts: Geology (rocks and minerals, mapping, weathering and erosion, plate tectonics), Astronomy (origin and evolution of the universe, and the solar system), Meteorology (weather, the atmosphere, climatology), and Oceanography (the ocean's structure and circulation and coastal environments). Students will be asked to explain the relationships between dynamic processes and the forces driving them. Students will use their learning in Earth Science to explain contemporary challenges and global issues, develop logical arguments supported with evidence, develop speaking and listening skills through presentation, and develop collaboration skills. This course is designed to improve student executive skills through explicit instruction of high school level student skill expectations

Chemistry (Honors) # 405**5 Credits****Expectation: Algebra I**

This 10th grade chemistry course is the second in the honors course sequence. It is necessary for students to demonstrate high science and math achievement. Also they should be able to function with a high degree of independence. The purpose of the course is to prepare for AP science classes and a college science major. Content areas include properties of matter, atomic structure, periodicity, ionic and covalent compounds, stoichiometry, gas laws, solutions, reaction rates, chemical equilibrium, acids and bases and oxidation-reduction reactions. It is expected that students will have successfully completed Algebra I or have teacher recommendation for enrollment.

Chemistry (College Prep) # 404**5 Credits****Expectation: Algebra I or teacher recommendation**

These 10th, 11th, or 12th grade classes are designed to acquaint students with the fundamentals of chemistry, and prepare them to function successfully in a non-science major at the college level. Content areas include properties of matter, atomic structure, periodicity, ionic and covalent compounds, stoichiometry, gas laws, solutions, reaction rates, chemical equilibrium, acids and bases and oxidation-reduction reactions. It is expected that students will have successfully completed Algebra I or have teacher recommendation for enrollment.

Physics (College Prep) #428**5 Credits****Expectation: Algebra I or teacher recommendation**

This is an introductory course designed to *acquaint* students with the fundamentals of physics, and to prepare them to function successfully in a non-science major at the college level. A major emphasis is placed on understanding the concepts of motion (mechanics), sound and light (waves). Once this foundation has been built, topics such as electricity, magnetism, circuits, optics and heat may be introduced. Concept development is achieved through a series of inquiry based “mini-labs” (ILE’s) that are performed collaboratively. These Interactive Laboratory Experiences (ILE’s) take the place of traditional lecturing for most of the year. Use of both very simple and more complex computer based apparatus is incorporated to ensure that students understand the limitations of the instruments they use to make measurements. Collaborative problem solving is a key component of the course since this mirrors the way scientists and businesses work. The use and knowledge of both algebra and geometry is essential; therefore, it is expected students will have successfully completed Algebra I or have teacher recommendation for enrollment. Concurrent enrollment in Algebra II is strongly recommended. Students are permitted to take Physics 1 (Honors) in a following year even if they have taken Physics CP.

Physics 1 (Honors) # 424**5 Credits**

Requirements: *B or better in Algebra II, concurrent enrollment in Pre-Calculus, may require passing MCC entry exam at end of prior academic year.*

This is a rigorous and **fast-paced** course designed to allow students to **master** the fundamentals of physics: ***Classical Mechanics and Waves***. The course also prepares students to function successfully in a science or engineering major at the college level. Significant effort is spent on the development of a deep understanding of classical mechanics and waves using complex algebra based mathematics at the same depth required for a first-year College algebra-based physics course. *The curriculum for AP Physics 1 is covered except for DC circuits*. Although covered, Wave Theory is usually not completed until after the AP Physics 1 examination is held. Concept development is achieved through a series of inquiry based “mini-labs” (ILE’s) that are performed collaboratively. These Interactive Laboratory Experiences (ILE’s) **take the place of traditional lecturing** for most of the year. Use of both very simple and more complex computer based apparatus is incorporated to ensure that students understand the limitations of the instruments they use to make measurements. Extensive use is made of computer technology as an integral part of the course with the availability of one-on-one laptops in the physics classroom. This enables development of essential student skills for both college and employment in areas such as word processing, cloud based file sharing, and online assessment to name but a few. Additionally, a significant emphasis is

placed on collaborative problem solving. *The use and knowledge of geometry, complex algebra, and some trigonometry is essential to this course.* It is therefore required that students have successfully completed Algebra II with a grade of at least of **B** or have teacher recommendation for enrollment.

Concurrent enrollment in, or prior completion of, Honors Pre-calculus is also required.

Important: Physics cannot be learnt through rote memorization. Significant **student effort** is required to develop an *understanding based on logical reasoning about the natural world.* The purpose of instruction is to provide students with strategies for developing this type of critical thinking. Practice of these strategies (through mastery -100% completion - of assignments) is essential to success in this course. Prospective students should consider delaying taking physics until their senior year if they have a tendency toward completion of assignments “at the last possible minute.”

Physics 2 (Honors) # 425

5 Credits

Prerequisites: **B in Physics 1, B in Honors Pre-Calculus, Concurrent Enrollment in Calculus at the AP or Honors level.**

This is a challenging course which is taught at the same level as the second algebra-based College physics course. The course **relies on students having the strong foundation** in classical mechanics and waves that was built in **Physics I Honors.** Classical mechanics is reviewed very briefly at the beginning of the year before the topics of Electromagnetism, Optics, Fluids, Modern Physics, and Nuclear Physics are studied. Concurrent enrollment in Calculus (AP or Honors) is required. The fourth quarter of the course is spent investigating the application of calculus to mechanics.

Important: Physics cannot be learned through rote memorization. Significant student effort is required to develop an understanding based on logical reasoning about the natural world. The purpose of instruction is to provide students with strategies for developing this type of critical thinking. Practice of these strategies (through mastery -100% completion - of assignments) is essential to success in this course.

AP Physics & Dual Enrollment Courses with Middlesex Community College:

To offer numerous options to students, AP & Dual Enrollment courses are offered in the same classes that Physics I and Physics II Honors are taught. However, AP & Dual Enrollment students are expected to be self-sufficient and self-motivated so that they can cover topics that may not be covered specifically in class.

Seniors electing to take AP Physics courses will have their transcripts updated to reflect enrollment in the AP Physics Class and not the specific Physics Honors class at the end of each term. Colleges will therefore see their progress in the AP Physics Class when making decisions about admissions.

All AP Physics and MCC Dual Enrollment courses require students to enroll in a special (pass/fail) lab class and/or Engineering Design 1 (see below). Additionally, MCC dual enrollment final exams take place on the same schedule as exams for Juniors. ***Seniors who are pursuing MCC dual enrollment will need to continue to attend classes after their final days as high school seniors for the purpose of MCC credit.***

AP Physics 1 (algebra-based physics) requirements:

- (a) Dual enrollment with Physics I Honors
- (b) Completion of ED1 (Engineering Design 1 – Semester 1) and

(c) AP 1 Lab (Semester 2).

AP Physics 2 (algebra-based physics) requirements:

- (a) Dual enrollment with Physics II Honors
- (b) Completion of Physics I Honors with a grade of B- or better.
- (c) Either Completion of ED1 (Engineering Design 1 – Semester 1) or AP 2 Lab and
- (d) AP 1 Lab (Semester 2).

AP Physics C: Mechanics requirements:

- (a) Completion of Physics I Honors with a grade of B- or better.
- (b) Dual enrollment with Physics II Honors
- (c) Concurrent enrollment in Honors or AP Calculus.
- (d) AP Lab (whole year) or ED1 Honors (Semester 1) with AP Lab (Semester 2)

MCC Physics 151 (Mechanics: algebra- based physics) requirements:

- (a) Dual enrollment with Physics I Honors
- (b) Passing MCC’s College readiness exam in the prior academic year.
- (c) MCC Physics 151 Lab (Semester 2).

MCC Physics 152 (Electricity & Magnetism plus other topics: algebra- based physics) requirements:

- (a) C or better in MCC Physics 151.
- (b) Dual enrollment with Physics II Honors
- (c) Passing MCC’s College readiness exam in the prior academic year.
- (d) MCC Physics 152 Lab (Semester 1).

MCC Physics 171 (Mechanics: calculus-based physics) requirements:

- (a) Completion of Physics I Honors with a grade of B- or better.
- (b) Dual enrollment with Physics II Honors
- (c) Concurrent enrollment in Honors or AP Calculus.
- (d) AP Lab (whole year) or ED1 Honors (Semester 1) with AP Lab (Semester 2)

Engineering ED1: Engineering Design: Bridges, Basic Circuits, and Robots (unleveled & honors level available) open to Grades 9-12 # 451 **2.5 Credits**

Held concurrently with other engineering courses. This course introduces student to the Engineering Design Process through the completion of *hands-on* projects which are changed from year-to-year. Example are: (a) the West Point Academy designed “File Folder Bridges” curriculum (b) learning how to solder project followed by the assembly of an FM radio; (c) the assembly, programming, and testing of an autonomous robot to perform a goal (d) experiments with electromagnetism. In addition, there will be some small “academic” investigations: exploring engineering careers and understanding the patent system are examples.

Students are expected to develop skills in teamwork and collaboration in this elective. **Assessment is based not only on completion of the projects but also on assessment of a student’s ability to work in a collaborative environment.** Part of the credit for the course will be based on a peer assessment model. Honors credit is available for students who obtain a grade of A or A+, complete a more rigorous introduction to circuits which includes electrostatics, and take a final examination. Students wishing to

obtain Honors Credit need to advise the instructor at the beginning of the course. Course materials provided by LHS.

Engineering 2: SolidWorks CAD – Mechanical Design. (unleveled, Honors credit available):

464 & 465

2.5 Credits

Held in the library. The course is *self-taught and self-paced – similar to a VHS course* - but with an LHS Faculty member designated to be available at limited times to assist. The text is “SolidWorks 2017 Tutorial with Video Instruction by Planchard”. This is the same course taught at Worcester Polytechnic Institute for freshman engineering students, students must be present in the Library (or as otherwise directed) at the scheduled time. The classroom teacher will be available on an “extra help” basis to answer questions. Students will be assessed by completion of tutorials and exercises from Planchard, and an exam at the end of the semester. Students will also be required to complete an in-classroom engineering design challenge where they will use 3D printers and laser cutters to fabricate the parts needed for their design. Unleveled course completion is determined by the assignments and the exam. Students may also earn Honors course credit at an A+ level by successfully passing the Certified SolidWorks Associate (CSWA) Exam online. The cost of one attempt of the exam (about \$120) is included at no charge. Course Materials for SolidWorks provided by LHS.

Engineering 3: Autodesk REVIT CAD – Architectural and Structural Design. (unleveled, Honors credit available): #466 & 467

2.5 Credits

Students who are interested in Architecture or Civil Engineering may elect to undertake a course of study in Autodesk Revit. However, students taking this self-taught course will be required to purchase the recommended text (about \$50) and pay for the final online exam (about \$150). Very limited “extra help” is available for students choosing this elective. Requirements for intermediate assessment will be discussed between the assigned LHS Faculty member and the student at the beginning of the course.

LHS has a license for REVIT and students may (if available) borrow laptop computers overnight, on the weekend, or during vacations to complete.

Engineering Capstone Project: Identification and Solution of a Substantive Problem to which the engineering Design Process can be applied (Honors level) & open to Grades 11 & 12

#438

2.5 Credits

Held concurrently with other engineering classes *over the course of an entire school year*. The student develops and solves a substantive engineering problem that is pre-approved by the classroom teacher. The role of the classroom teacher is that of mentor for the project. The student is responsible for all other aspects of project completion. The project is assessed through the submission of project plans, interim reports, and a final report that addresses the original project. 100% successful completion of the project is not necessarily required. The most important factors for a positive assessment will be related to how diligent the student has been in preparing interim reports, identifying problems and roadblocks, revision to the plan based on knowledge obtained, the use of outside expert consultants, the student's ability to co-opt others to assist in the project, and the use of the teacher as a mentor.). The instructor reserves the right to limit the number of students taking this elective simultaneously. Students may be responsible for expenses/materials required for completion of the project.

(Pre-requisites: ED1 and/or ED2 or one other one semester engineering elective)

Engineering IT1: Microsoft Technology Associate (Honors) # 458

2.5 Credits

Requirements:: ED1

Held concurrently with other engineering courses. The course is self-taught and self-paced through the use of Microsoft Virtual Academy. Students must be present in the Engineering classroom at the scheduled time. The classroom teacher will be available to answer occasional questions. After completion of the course students will be able to: (a) recognize network infrastructures, (b) be familiar with network hardware, (c) be familiar with protocols and services. Assessment is via a single online multiple-choice test of about one hour duration ONLY. Successful completion of this assessment, will reward the student with an official Microsoft Technology Associate (MTA) certificate as well as the High School credits for a one-semester honors elective at an A+ level. Enrolment is limited to 3 students per semester and will only be available in one engineering section. The student is responsible for paying any fee associated with taking the online exam (about \$100).

Astronomy (College Prep) # 497

2.5 Credits

Expectation: Biology and Chemistry.

Astronomy is the study of the universe, and this course will focus primarily on the history and practice of ancient astronomy. This semester long course will investigate how, without the aid of telescopes or computers, humans were able to estimate the size of the earth, the distance to the moon, and the distance to the sun, as well as explain the passing of the seasons and the phases of the moon. Additional topics include how constellations are used to “map” the sky and how astronomy helped to produce our current calendar. This course will also spend some time exploring more modern, large-scale topics such as black holes, the lifespan of stars, and theories about the formation of the universe.

Anatomy and Physiology (Honors) # 445

5 Credits

Expectation: 80 in both Biology and Chemistry or teacher recommendation.

This course involves the study of the human body systems - both structure and function. Emphasis will be placed on describing how the functions of various systems are integrated to maintain a homeostatic balance in the body. A comparison of the human to other mammals is accomplished through laboratory dissection. This course will be beneficial to students planning to major in biology or medical and health related fields. Students are expected to have successfully completed both Biology I and Chemistry I.

Oceanography (College Prep) # 432

2.5 Credits

Expectation: Biology, Chemistry

This course is designed to give students an insight into our oceans. The course is designed as a 40/60 project based/lecture based assessment. The project will emphasize 21st century skills in research and presentation. In the project students will be encouraged to incorporate video in a computer based presentation (powerpoint). The course will cover areas of the history, of the oceans and ocean exploration, physical and chemical properties of the oceans, plate tectonics, how waves, tides and the seasons work as well as the basic biology and the origins of life.

Forensic Science (College Prep) # 430**2.5 Credits**

This semester-long course will explore the science of criminal investigation. Students will learn to approach the solution to a crime using scientific methodology. Topics such as securing a crime scene, identifying blood splatter patterns, collecting fingerprints, and examining hair and fiber evidence will be covered through intriguing true stories and interviews with police personnel and forensic professionals. Fans of the television show CSI, those students considering crime-scene investigation as a career, and readers of crime fiction will find this course interesting and exciting. It is expected that students will have successfully completed Biology I. Offered both spring and fall semester.

Environmental Science (College Prep) # 446**2.5 Credits****Expectation: Biology**

Environmental Science is a course dealing with environmental issues primarily on a national and global scale. This course provides students with the principles, concepts, and methodologies needed to understand and appreciate the relationship between humans and the natural world. Topics include global warming, nuclear power, biodiversity, and human evolution, as well as an analysis of the environmental problems associated with each topic. Special attention is paid to the way in which students can and will be expected to address these environmental issues in their adult lives.

Biotechnology (Honors) #157**2.5 Credits****Expectation: Successful completion of both biology and chemistry.**

This semester long course offers the student an opportunity to experience the basics of biotechnology, PCR, human genetics, and exploration of bioethical issues. The course includes career exploration, as well as the history and applications of DNA/RNA technology, molecular biology, bioethics, and laboratory safe practices. This course has a significant amount of laboratory work that illustrates the basic techniques of biotechnology. Specific topics in genomics and bioinformatics will also be included. The laboratory component of this course encompasses biochemical and molecular biological techniques that are routinely performed in research, government, and industrial biotechnology laboratories. The exercises are designed to provide a hands-on context for the topics being presented in the course lectures. Finally, the course concludes with a consideration of bioethical issues relating to this powerful new technology.

WORLD LANGUAGE**Philosophy**

Proficiency in a second language distinguishes college applicants as well as job candidates in the new global economy. It attests to the ability to understand people from other cultures and work collaboratively; and serves as testimony to a candidate's perseverance. In accordance with the latest proficiency standards of the American Council on Teaching Foreign Languages (2017), language classes at LHS focus on language acquisition through active listening. Other language acquisition strategies in the classroom incorporate speaking, writing, and reading at advancing levels on the path to proficiency.

French I # 510 (unleveled)**5 Credits**

In their first year studying French, students will begin learning about Francophone culture and will acquire the basic skills of speaking, reading, writing and understanding French. Students will learn how to greet people, ask for basic information, and talk about activities at the “novice” level of the American Council on Teaching Foreign Languages proficiency benchmarks. They will become used to hearing French spoken and to pronouncing the language correctly. Students will learn how to conjugate a variety of verbs in the present tense. By the end of the year students should be able to exchange simple questions and answers in French, write a one-paragraph composition, and interpret short, basic informational texts.

French II (Honors) # 552**5 Credits**

In their second year studying French, students will continue learning about Francophone culture and become able to exchange more complex information (such as preferences or concerns) with French speakers. Class will be conducted primarily in French, and students will acquire a more specialized vocabulary to discuss jobs, travel, and health and other issues. They will work collaboratively on projects about francophone culture. By the end of the year students should be able to exchange questions and answers in French, write a two-paragraph composition, and interpret simple informational and fictional texts.

French III (Honors) # 561**5 Credits****Expectation: 80 average in French II**

In their third year studying French, students will participate in classroom discussion entirely in French and will begin to think about the cultural differences and similarities between American and francophone culture. They will discuss increasingly complex topics (such as work and non-profit organisations) in French, and will begin reading some simplified literary texts like *Petit Nicolas* and fables of La Fontaine. The focus of the class is on increased oral proficiency, and there will be weekly oral proficiency and listening comprehension assessments. By the end of the year students should be able to recount stories about social experiences and to express what happened using different time frames, write a three-paragraph composition, and understand the main idea in informational and fictional texts.

French IV (Honors) # 562**5 Credits****Expectation: 80 average in French III**

In their fourth year studying French, students will begin to develop the type of speaking, listening, reading, and writing skills that will be more fully developed in AP French. Speaking exclusively in French, students will become familiar with different countries in the Francophone world and think about cultural differences. They will learn to navigate increasingly complex literary texts such as *The Count of Monte Cristo* and the short stories of Maupassant. Students will work both collaboratively and independently on topics like the history of francophone culture and traditions. The focus of the class is on increased oral proficiency, and there will be weekly oral proficiency and listening comprehension assessments. By the end of the year students should be able to speak about community and culture, write a four-paragraph composition, and understand the main idea in unabridged texts from online news resources.

AP French (Advanced Placement) # 516**5 Credits****Expectation: 80 average in French IV**

This course will prepare students to take the Advanced Placement exam in “French Language and Culture” in May. According to the College Board, the test is “comparable to fourth semester (or the equivalent) college/university courses in French.” The course will cover the six themes of the AP exam: global challenges, science and technology, contemporary life, personal and public identities, families and communities, and beauty and aesthetics. The exam assesses three different skills: interpersonal communication, interpretive communication, presentational communication. Students who achieve a high score on the AP exam may be exempted from taking a foreign language class at the university they attend.

Spanish I (unleveled) # 520**5 Credits**

This course is designed to develop basic speaking and listening-comprehension skills with minor emphasis on reading and writing skills. Listening-comprehension and speaking skills are developed through practice with the instructor and interactive media materials. Students are required to communicate in Spanish about daily life using various culturally-based themes. The cultural differences in the Hispanic culture are highlighted and discussed. At the end of this course, students should be able to understand and engage in short conversations, be able to read authentic materials in Spanish and write accurately in the present and past tenses.

Spanish II (College Prep) # 522**5 Credits**

This course is an extension of Spanish I. The course is conducted in Spanish and students are expected to maintain use of the target language in class, although they may refer to English for clarification of grammatical explanations. The listening-comprehension and speaking skills are further developed through class discussion and the use of media resources. Reading selections continue to develop breadth and cultural understanding. The topics and purpose of all activities vary to expand vocabulary and improve grammatical structures while continuing to develop cultural awareness. Writing skills at this level aim at reinforcing grammatical structure and allow for individual self-expression. At the end of this course students should be able to read and comprehend main ideas of material written at varying levels of complexity and be able to express themselves and their opinions fairly accurately while using the present tense, past tenses and the future tense.

Spanish II (Honors) # 542**5 Credits****Expectation: 90 average in Spanish I / Eighth Grade Spanish**

Spanish II Honors is an extension of Spanish I with **accelerated pacing**. The course is conducted entirely in Spanish and students are expected to maintain strict use of the target language. Students opting for the honors level are comfortable speaking, listening, reading and writing in Spanish without referring to English. The listening comprehension and speaking skills are further developed through conversation and use of audio-visual materials. Reading selections continue to develop target language depth and breadth. The topics and purpose of all activities expand vocabulary and grammatical structures and develop cultural awareness. Writing skills aim to reinforce structure and allow for individual self-expression. At the end of this course students are able to express themselves in Spanish using present and past tense, express what will happen in the near future and read and comprehend written material at

the intermediate level. Students' speaking and writing ability reflects accurate subject/verb agreement, appropriate use of verb tenses and sound grammatical structures and the use of idiomatic expressions.

Spanish III (College Prep) # 543

5 Credits

This course is conducted entirely in Spanish and students are expected to maintain use of the target language in class but may refer to English for clarification of grammatical points. The course is designed to maintain and continue the development of oral skills while enhancing strong reading and writing skills. Emphasis is put on writing skills, not only to reinforce new structures, but also to use new vocabulary and develop a style of self-expression. At the end of this course, the students should have a better understanding of the language structure enabling them to converse or write at some length using the present, past and future tenses on subjects concerning themselves, their surroundings, Spanish culture, and literature. Class discussion and writing will reflect the students' strong command of a variety of tenses, grammatical structures and idiomatic expressions.

Spanish III (Honors) # 523

5 Credits

Expectation: 80 average in Spanish II Honors or 90 average in Spanish II College Prep, or with recommendation of the teacher

This course is conducted entirely in Spanish and students are expected to maintain strict use of the target language. Students opting for the honors level are comfortable speaking, listening, reading and writing in Spanish without referring to English. Spanish III Honors continues the development of strong oral skill while improving already strong reading and writing skills. Emphasis is put on writing skills, not only to reinforce new structures, but also to use new vocabulary and develop a style of self-expression. At the end of this course, the students will have a better understanding of the language structure enabling them to converse or write at some length using the present, past, future, and conditional tenses and the subjunctive mood on subjects concerning themselves, their surroundings, Spanish culture, and Hispanic literature. Class discussion and writing will reflect the students' strong command of a variety of tenses, grammatical structures and idiomatic expressions.

Spanish IV (Honors) # 524

5 Credits

Expectation: 80 average in Spanish III or with recommendation of the teacher

This course is designed as a thorough review of previously learned material through a careful integration of all four skills (listening/speaking/reading/writing) with increased emphasis on oral presentations, reading authentic texts and writing essays. Emphasis is placed on expanded vocabulary and structural distinctions found within the language. The ability to read literature as well as newspaper and magazine articles will be developed. The course is conducted entirely in Spanish and students will prepare oral presentations, written essays and journal entries on a regular basis. At the end of this course students should be able to read, write, and discuss literature and current events with rich, precise, use of the Spanish language to include the use idiomatic expressions and complex grammatical structures. **(Students may opt to take this course for dual enrollment credit.)**

AP Spanish Language and Culture (Advanced Placement) # 525**5 Credits****Expectation: 80 average or higher in Spanish IV Honors or with teacher recommendation**

The AP Spanish Language and Culture course is a rigorous language acquisition course designed to provide students with the necessary skills and intercultural understanding to enable them to communicate successfully in an environment where Spanish is spoken and as such, is an immersion experience requiring an exclusive use of Spanish, a requirement which class participation grades reflect. This is a third year college level course that focuses on developing the students' command of the Spanish language by integrating the three modes of communication: interpretive, interpersonal and presentational. An additional key focus of the course is the integration of authentic resources including online print, audio, and audiovisual resources, as well as traditional print resources that include novels, short stories, essays, and magazine and newspaper articles with the goal of providing a rich, diverse learning experience.

Spanish V: Spanish for the Millennium (Honors)**5 Credits*****(Semester Course)*****Expectation: 70 average or higher in Spanish IV Honors**

In Spanish for the Millennium, students will study the Spanish language and learn about its culture through a variety of projects and reality-based activities, videos, newspaper articles, book reviews, and digital storytelling. Students will work toward competence using advanced grammatical and lexical items to refine their communication skills - listening, speaking, reading and writing in the target language. Current and historical events in the Spanish speaking world and Latin America/U.S. relations will be considered and examined. The core content of this semester course will be conversation based, such speaking activities may include but not be limited to simulated phone conversations, presentational speaking, debates and dialogues. Vocabulary and grammatical themes will be provided to supplement conversation and stimulate independent and abstract thought in Spanish. This course is conducted entirely in Spanish.

Latin I (Unleveled) # 535**5 Credits**

The first year of Latin stresses the study of basic vocabulary and grammar to help students learn to read and comprehend the Latin language. The course also seeks to develop an understanding of Roman influence on western history and civilization, specifically through the study of Classical Mythology. Additional attention is devoted to English derivatives and Latin phrases used in the English Language. Students are encouraged to take part in the National Latin Exam in March.

Latin II (College Prep) # 531**5 Credits**

The second year of Latin continues the study of vocabulary and more complex grammar. The course also asks students to understand and analyze more specific events and periods of Roman history, culture, and mythology, especially as they relate to modern day culture. Continued study is devoted to English derivatives, Latin phrases, and expressions commonly used in the English language. Students are encouraged to take part in the National Latin Exam in March.

Latin II (Honors) #534**5 Credits****Expectation: 90 average in Latin I/Eighth Grade Latin**

The second year of Latin continues the study of vocabulary and more complex grammar. Time is devoted to English derivatives, Latin phrases, and expressions commonly used in the English language. The honors level goes into more depth when studying grammar, and students are expected to be able to move at a faster pace while mastering grammatical topics with more accuracy and skill. The goal of this course is to prepare students to read the texts of ancient Roman authors in Latin III and IV. To this end, we seek to develop student's skills of textual analysis of Latin literature through weekly assignments including comprehension and discussion questions on adapted Latin selections from the text, The Romans Speak for Themselves. The course also asks students to understand and analyze more specific events and periods of Roman history, culture, and mythology, especially as they relate to modern day culture. Students are expected to take part in the National Latin Exam in March.

Latin III (Honors) # 532**5 Credits****Expectation: 80 average in Latin II Honors, or A average in Latin II CP, or recommendation of the teacher**

This course continues the study of vocabulary and more complex grammar to help students read the works of ancient Roman authors. The study of Latin at this upper level includes reading and responding to a variety of Latin texts, including inscriptions, Classical poetry and prose on topics like mythology and daily life, as well as selections from Medieval Latin. In this course, students also analyze specific events and periods of the late Roman Republic and Early Empire. Continued weekly study is devoted to English word ancestry and Latin expressions commonly used in the English language. Students are expected to take part in the National Latin Exam in March. **(Students may opt to take this course for dual enrollment credit.)**

Latin IV (Honors) # 533**5 Credits****Expectation: B average in Latin III Honors or recommendation of the teacher**

In Latin IV, students will read and comprehend Classical Latin literature. Students will explore the theme of the hero as it relates to figures in the both the Classical and Modern worlds. Selections include adapted readings on mythology and legends of early Rome, as well the poetry of Ovid and Catullus. Our study of heroic themes culminates in a close reading of the Iliad in English. The last term will be devoted to reading and analyzing Caesar's De Bello Gallico, according to the Latin AP Curriculum. Students will continue the study of topical vocabulary and more refined aspects of Latin grammar as they relate to the texts. Continued weekly study is devoted to English word ancestry and Latin expressions commonly used in the English language. Students participate in the National Latin Exam in March.

Latin V (Honors) # 536**5 Credits**

Prerequisite: B average or higher in Latin IV Honors

In Latin V, students will follow an unofficial AP Latin curriculum. This curriculum is the equivalent of a fifth semester college course. Students will read in Latin extensive selections of Caesar's De Bello Gallico and Vergil's Aeneid, as well as longer selections of both texts in English. Time is devoted to the topics of advanced Latin (vocabulary, morphology, grammar, and syntax) and Latin and English usages, as well as reading comprehension and literary analysis. Course themes include: Literary Genre and Style, Roman Values, War and Empire, Leadership, Views of Non-Romans, History and Memory, and Human Beings and the Gods. Students are expected to participate in the Classical Etymology Exam in November and the National Latin Exam in March. Per the AP exam syllabus, sight reading, close translation, identification of literary devices, and scansion of poetry are sample class activities. The overarching goal is to read these great works and put them into the context of the Roman World.

FINE AND PERFORMING ARTS

Visual Arts Program Philosophy

The aim of the visual arts program is to enable students to become better observers and interpreters of their world. Through practice and exploration student artists discover new perspectives on themselves and their experience. They learn to evaluate and constructively criticize their own artwork and the work of others. By providing students with the opportunity to develop skills, create, look at, and respond to works of art, students will learn to “make meaning from experience, respond to creativity, and contribute to society.” (Massachusetts Arts Frameworks)

ART ELECTIVES

Art Foundations # 893

2.5 Credits

Art Foundations introduces students to the elements and principles of design, while developing studio habits, and encouraging observation and reflection in the art-making process. Students will explore the elements and principles of design through a variety of media and experiences. Students will be pushed think more abstractly and begin to develop symbolic and personal imagery in their artwork.

Painting and Drawing # 840

2.5 Credits

In addition to developing the technical skills of painting and drawing, students will be pushed to consider the content and concept behind their work. Students will explore a variety of drawing and painting techniques and materials that will reinforce skills needed to improve observational work and expressive design. Students will thoughtfully reflect on the visual impact of artwork, using visual language and applying the elements and principles of design to their reflections and discussions.

Ceramics I # 827**2.5 Credits**

This class offers students an introduction to clay construction techniques and concepts in 3-dimensional design. Ceramics focuses on basic techniques of hand building, glazing, and firing. Students will be exposed to the history, functions and vocabulary of clay, creating both functional and sculptural objects. Students will examine how culture influences design and decoration.

Ceramics II # 828**2.5 Credits**

Ceramics II introduces students to wheel formation techniques and advanced hand building methods. Class time will be split between wheelwork and sculptural projects. Students will explore the relationship between form and function, creating both functional and expressive works of art.

Art Portfolio Prep # 824**5 Credits**

Expectation: Students successfully completed Art Foundations, a variety of art electives, and have art teacher recommendation.

This course is intended for students with an ongoing interest in art and for those who wish to compile a portfolio for college applications. Students will create a portfolio of work that highlights the student's specific skill and demonstrates a breadth of ability. Students will learn about the criteria used to judge an art portfolio and how to document work for submission. In addition to portfolio assignments, students will complete an independent concentration of works exploring a concept of theme.

AP Studio Art (Advanced Placement) # 836**5 Credits**

Expectation: Students successfully completed Art Foundations, a variety of art electives, and have art teacher recommendation.

AP Studio Art course is designed to give students the experience of taking a college level Art Foundations course. Students will produce a minimum of 24 works to fulfill the requirements in the 3 sections of the portfolio: Quality, Concentration, and Breadth. Students are required to develop a series of works that demonstrate technical skills and focus on conceptual issues. Throughout the course students will engage in meaningful discussions about the artistic process, why we make art, and how to overcome creative roadblocks. Students will thoughtfully reflect on the visual impact of artwork, using visual language and applying the elements and principles of design to their reflections and discussions.

Digital Illustration and Graphic Design Media I # 895**2.5 Credits**

This course is open to all students who are taking art for the first time in high school. It is one semester in length and will introduce students to graphic design and communication, digital photography and digital video and its technological applications to contemporary industry methods and standards. Students will explore the major elements and principles of contemporary design aesthetic through multiple programs

such as Adobe Photoshop and Adobe Illustrator. Graphic design, illustration, and advertising techniques will be explored through a variety of techniques. Emphasis will be placed but not limited to the digital design process. Visual problem solving, page layout and image manipulation are presented. This course is considered a gateway to the art electives.

Digital Illustration and Graphic Design Media II # 896

2.5 Credits

This course will provide continuing training in the graphic arts for the serious graphic communication student. The course explores the potential of digital illustration and design, giving students fundamental understanding composition, color theory, vector based imagery used in animation and various web design applications. Students will be encouraged to study the latest techniques being used as contemporary standards. Understanding and analysis of various contemporary industry aesthetics and their applications will be used to determine possible academic and career trajectories. Projects such as designing Smart phone and tablet logos and advertisement layout will be assigned with the expectation that students will produce quality projects giving them real world experience. Visual problem solving, page layout and image manipulation are presented. Emphasis will be place on building a portfolio of digital work that explores both conceptual work as well as commercial work, and how social media platforms can be engaged in to develop networking opportunities.

TV Studio #643 (Half year or Full year – every day)

2.5 / 5 Credits

The LHS T.V. Studio and Production Course, in partnership with Littleton Cable Television (LCTV), is available again in 2017-2018. It is a full year course in which students learn all about the production and presentation of TV programs. It is open to all students in grades 9 through 12; however, enrollment will be capped at 20 students. A special area of focus is the production of the regular Tiger News Network (TNN) show.

Beginning Photography # 001

2.5 Credits

This course introduces the camera and darkroom as creative tools. Students are taught to use various types of cameras and related equipment, to properly expose and develop film, and to create black-and-white prints. After reviewing the fundamentals, the focus will shift to emphasizing photography as a visual language. Class critiques of work from photo assignments will provide a forum to critically discuss photography as an art form in both personal and cultural terms. Class will be divided between the classroom and supervised darkroom sessions.

Advanced Photography and Digital Media # 002 Grades 11 & 12

2.5Credits

Expectation: Photography

Advanced Photography is for students who would like to further develop critical and technical skills. Students participate in critiques of their own work and that of fellow students, and work on acquisition of technical control. Students will be introduced to medium-format cameras, alternative processes and the use of lighting in photography. By the end of this semester, students should have a solid grasp of the technical aspects and an awareness of what they are interested in photographing.

The Art and Design of Fashion #003

2.5 Credits

The Art and Design of Fashion will explore the history of fashion and how it affects our lives and culture.

Students will explore historical trends in fashion throughout different cultures in different time periods of our history. By exploring the history of fashion, we will use that as a starting point to start designing our own fashion concepts. Students will be required to sketch concepts in sketch books and create design concepts via Adobe Illustrator and/or Adobe Photoshop. The final project will require students to implement their own fashion design concepts and put them on an online Redbubble account which is free and open to use. More ambitious students may be required to set up a Shopify account.

Music Program Philosophy

The purpose of music education in the Littleton Public Schools is to assist each student, commensurate with individual capacity, to appreciate, understand, and respond with discrimination to the aesthetic effect of music. Aesthetic responsiveness is attained by providing experiences in making and listening to music that increases the student's sense of beauty, concept of discrimination, and receptivity to a wide range of human emotions.

The music program is geared to develop sensitivity to the cultural heritage of the world through an understanding and appreciation of music in its many forms. This sensitivity is developed by providing participative experience with music of many lands and people, of many composers of different eras, and of many types and styles - both vocal and instrumental, in the classical, folk and popular fields.

High School Band (Full year – every day) # 900

5 Credits

The Littleton Senior High Band is comprised of a concert band, grades 9-12, that serves as a pep band and marching band for various community functions. Band students play at home football games, as well as pep rallies. The concert band's repertoire is chosen from wind ensemble, concert band, chamber ensemble and orchestral transcription. The ensemble presents several concerts annually.

High School Chorus (Half year or Full year – every day) # 901

2.5 / 5 Credits

This course is offered to any student grades 9-12. Prior singing experience is helpful but not required. The music studied will range from classical to show and popular music of the 20th and 21st Century. The chorus performs in two major concerts annually as well as being featured at the St. Anne Sodality, occasional performances at organizations such as Council of Aging, additional school functions, etc.

Introduction to Theater Arts I # 101

(Offering dependent on staffing)

2.5 Credits

This one semester course is for students of varying talents and backgrounds, and will cover a variety of topics in the Theater Arts including public speaking, dramatic interpretation, and script study and analysis. Whether you have never spoken orally, or if you are experienced in the performing arts, there are skills to be gained in this class. There will be opportunities to create original work, and chances to go on field trips to watch professionals display these skills live. At the end of the term, with the proper preparation, the class will culminate in a small presentation of student work for friends and family.

Beginning Guitar #903

2.5 Credits

Introductory classroom instruction in folk and popular styles of guitar playing: technique, music reading, chord symbols, song accompaniment patterns, stage etiquette and ensemble performance. Prerequisites:

none. If you want to play simple folk and pop tunes, learn to accompany yourself with guitar, or jam with a garage band, this is the course for you! You'll study music reading, chord symbols, finger picking techniques, bass lines and accompaniment patterns. The course culminates in a performance of selected material.

Music Theory #950

2.5 Credits

Music Theory is the science behind the art of music. This course is designed for the student with little to no formal music theory training. A very basic knowledge of treble clef note identification is suggested, but not required. The students will be introduced to basic written theory, musical penmanship, chord identification, part-writing, sight-singing with solfeggio, and auditory skills.

WELLNESS

Philosophy

Students enrolled in Wellness will participate in a wide variety of activities and learning experiences, which develop the individual's physical, intellectual, emotional, and social self. The overall goal of the program is to educate and empower students to strive for their optimal level of personal wellness throughout their lifespan. The wellness curriculum at Littleton High School is aligned with the Massachusetts Curriculum Frameworks as well as the National Standards.

****Physical Education Requirements****

Beginning with the Class of 2018, Littleton High School students are required to fulfill a Physical Education/Health & Wellness credit requirement each school year and earn a total of 12.5 Credits (10 credits in Physical Education and 2.5 credits in Health) to meet graduation requirements.

Students may meet these requirements by taking one Littleton High School Physical Education course for one semester each year and one Health course for one semester. Students may also opt to substitute their successful completion of LHS sports for Physical Education activity courses and credits. Please see the alternative credit option information below.

Alternative Credit Option for Physical Education

Students may elect to earn Physical Education credits by participation in an LHS Sport. Students scheduled for Physical Education class during the school day, however, may not add extra credit to their transcript by participation in an LHS Sport. This option is intended as an alternative for students who need/prefer not to take Physical Education during the school day. The Alternative Credit Option for Physical Education must meet certain criteria in order to be approved. These specific requirements will be provided and explained by school administrators and counselors as needed.

Students can earn a total of 2.5 Physical Education credits per year for successful participation and completion of an LHS Sport.

This Alternative Credit Option may be available for students on a limited basis for non-LHS Athletic & Physical Activities (e.g. Figure Skating) in the future. Please contact a counselor or an administrator for more information.

If a student would like to fulfill their grade level Physical Education credit requirement beyond the school day, s/he may request an **Alternative Credit Option** for Littleton High School Physical Education courses.

A student requesting approval of credits for participation in a school-sponsored sport or a non-school related sport or physical activity must submit an Alternative Credit Request to a Littleton High School administrator/designee for the activity/sport. Credit will be issued after documented and approved completion of the alternate activity/sport. Guidance Counselors will monitor the student fulfillment of Physical Education credits via this **Alternative Credit Option** as they monitor student completion of all Littleton High School graduation requirements.

Students will earn 2.5 credits for the school year and receive a Passing Grade (P) after successfully completing an **Alternative Credit Option** (a seasonal LHS sport or an alternate activity/sport). Only one **Alternative Credit Option** is allowed for each student per year.

This **Alternative Credit Option** is an OPTIONAL opportunity; and, therefore, does not allow a student-athlete to be exempt from the LPS Athletic Fee that is required for participation in a Littleton High School sport. All students pursuing an **Alternative Credit Option** do so at their own expense and must have written approval of an LHS administrator. The final decision to approve a proposed alternate activity/sport for Physical Education Credits rests with the High School Principal/designee.

Strength and Conditioning # 014

2.5 Credits

In this course students will receive instruction in more advanced strength and conditioning activities. Students will participate in a high-intensity strength training program to benefit their personal fitness needs and enhance their athletic performance. Additional activities in this course may include but are not limited to agility training, plyometrics, flexibility development, cardiovascular conditioning and health related issues.

Fit for Life # 026

2.5 Credits

This course is designed for those students with little or no prior fitness training experience. In this course students will be instructed in proper training along with safety procedures. Students will be introduced to the benefits of fitness training and its contributions to overall health. Workouts will be customized to meet individual's desired results. It will help the students develop activity and personal fitness plans to meet their needs now and in the future.

Sports and Games #030**2.5 credits**

Students in this course will participate in a variety of individual and team activities. Students will have an opportunity to practice game and sportsmanship skills, participate in tournaments, and develop leadership, decision-making and communication skills. This class will incorporate activities to enhance lifelong recreational participation. Students will understand the components of physical fitness and the benefits of a physically active lifestyle while participating in recreational team activities. It will help the students develop activity and personal fitness plans to meet their needs now and in the future. Activities can include but are not limited to badminton, tennis, golf, soccer, touch football, basketball, volleyball, softball, ultimate Frisbee, floor hockey and recreational games.

Health #010**2.5 Credits**

This one semester course is required for graduation. The course includes topics about physical health (i.e. nutrition, lifestyle factors, and human sexuality), social health (i.e. communication, peer pressure/harassment, healthy relationships) and mental health (i.e. mental disorders, eating disorders, addictive behaviors, relaxation techniques.)

Nutrition #017**2.5 Credits**

Prerequisite: Biology

This one semester course is an elective for sophomores, juniors and seniors who have an interest in nutrition and the body's use of nutrients. The course will focus on the relationship between diet and athletic performance, as well as the effect of diet on certain health problems. There will be an emphasis on creating personal nutrition plans.

Child Development #018**2.5 Credits**

Prerequisite: Health

This one semester course is an elective for juniors and seniors who have an interest in early childhood education. The course will focus on the physical, emotional, social, and intellectual development of children from fetal development to approximately age six. There will also be an emphasis on parenting and family challenges.

Wellness Topics #014.**2.5 Credits**

This one semester course is an elective for juniors and seniors who have an interest in current health topics or concerns. The course will focus on the National Health Skills (Advocacy, Analyzing Influences, Accessing Information, Decision Making, Goal Setting, Self-Management, Interpersonal Communication) in conjunction with the National Health Observances. Students will be working independently to complete the assignments during and outside of class.

Yoga # 025**2.5 Credits**

This one semester course is offered to all grades. Yoga provides students with a beginner's level class including an introduction to yoga poses, relaxation, and self-reflection. In addition to stretching and building core strength, students will gain first-hand experience with self-care and stress-reduction techniques.

SPECIAL EDUCATION

Several programs have been designed to provide support for students with a variety of disabilities and educational needs.

The Massachusetts Department of Elementary and Secondary Education has established a three-step process to identify and plan for the special education student. Following a referral, a student with a suspected disability in the general curriculum participates in an evaluation after which a Team meeting is convened to determine eligibility, develop an Individualized Education Program (IEP), and establish placement criteria. Once a final IEP is written and approved, the identified special education student may receive direct or indirect service through one of our specified programs. These may include academic support within a general education class or specialized instruction within the Learning Center setting. For students with more significant educational or behavioral needs, alternative academic classes and/or emotional/behavioral intervention services may be provided in order to afford access to the curriculum with appropriate modifications and accommodations. Specifics of the course parameters are determined by the needs of the respective population. Collaboration and communication among special education liaisons, classroom teachers, parents, students, and outside support professionals are paramount in the success of our special education students. We strive to promote the cognitive, social, and emotional growth of each child in order that she/he may maximize her/his potential and thereby become a productive contributor to society.

Curriculum Skills # 094**2.5 Credits/Semester****Prerequisite: IEP**

This course of specialized instruction is designed to provide students with the necessary skills to successfully transition to the Littleton High School academic, social, and behavioral environment, access the mainstream curriculum, and make effective progress in the general classroom. In addition, students will be engaged in individualized work to address their annual goals as well as any areas of need identified on their IEPs. Development of such independent skills may include note-taking, test preparation, writing, generating and using graphic organizers, reading comprehension, using resources, self-help, mathematics, assistive technology, critical thinking, and areas of content difficulties. Focus areas are designed to advance the independent application of learned skills, including those pertaining to advocacy, academic success, and post-secondary planning.

Literature 1 & 2 # 114, 116**Grades 9 & 10****5 Credits****Prerequisite: IEP**

This course is designed for students who need added support, instruction and practice with their decoding and/or comprehension skills. Vocabulary development and an understanding of literary elements are also emphasized. Students read from a variety of literature genres that will include short stories, novels, plays, non-fiction and content area selections. Using these materials, students receive practice in applying their decoding skills, and engage in class discussions and directed questioning to enhance their comprehension skills.

Language Arts 1 & 2 # 119, 128**5 Credits****Grades 9 and 10**

The emphasis of this course is on writing instruction. Students will move through the writing process using a five-step model which includes brainstorming, organizing ideas using a graphic organizer, writing a rough draft, editing and revising, and publishing a final draft. While students will have opportunities to engage in creative writing, informational or expository writing for academics and everyday life is the focus. Students will be taught specific skills, including sentence structure, punctuation, and descriptive language that they will then apply to their writing.

Language Arts 3 & 4 #129, 130**5 Credits**

This emphasis of this course for juniors and seniors is on reading and writing instruction. Students will read from a variety of literature genres such as fiction, non-fiction, short stories and plays. Students will engage in literary discussions to develop and nurture critical thinking skills. In addition, students will write for a variety of purposes such as expository, persuasive, narrative, and descriptive writing will be the focus for academics and everyday life. Vocabulary development is a primary focus, as is grammar and sentence structure.

Foundations of High School Math 1 & 2 # 323, 324**5 Credits****Grades 9 and 10**

In this course designed for freshmen and sophomores, students work with the foundational principles of Algebra and Geometry. Students will be graphing on the coordinate plane and various other forms of graphing and data collection. Students will learn to perform the four basic operations on rational numbers and become more confident with their ability to perform mathematical operations on all real numbers. Students will be introduced to the concept of the variable and practice using integers and variables while learning concepts and procedures such as the order of operations, combining like terms, the distributive property and solving simple algebraic equations as well as preparing for MCAS.

Foundations of High School Math 3 & 4 #325, 326**5 Credits****Grades 11 and 12**

The Foundations of High School Math 3 and 4 courses are designed for juniors and seniors and cover a variety of algebraic and geometric topics that will further develop students' knowledge base while continuing to maintain and reinforce their basic mathematical skills. Students will work with integers and rational numbers, graph equations and figures on coordinate planes, and model data using statistics. Students will become more confident with their ability to perform mathematical operations by practicing concepts such as order of operations, combining like terms, the distributive property, applying formulas,

and solving algebraic equations. Students will also be introduced to real world mathematical concepts such as measurement, area, perimeter, volume, and financial literacy.

Vocational Seminar #095

Prerequisite: IEP and TEAM approval

**.75 Credits
(per semester)**

This course is co-taught by a Special Education Teacher/Transition Specialist and Speech and Language Pathologist. It meets two times per week in a small group setting. It is open to juniors and seniors and based on IEP team approval. Students receive specialized and direct instruction in topic areas including self-determination and advocacy skills, disability disclosure for accommodations in post-secondary education and the workforce, college and career exploration and planning, social skills at work and post-secondary education, money management and budgeting, and learning about public transportation options. Students have the opportunity to engage with community members, adult service providers, and practice skills such as using the LRTA bus.

Littleton Transition Program

Prerequisite: IEP and TEAM approval

The Littleton Transition Program is designed to help young adults that have completed their high school education grow and develop as they move into adult life. It is a highly individualized, community-based program that develops self-determination skills including vocational training, functional academics, community participation, and social pragmatics. Students are encouraged to discover their own strengths and interests, set goals, and seek help when needed. We connect with nearby transition programs such as Pathways (Concord-Carlisle), Gateway (North Middlesex), and PACE (Acton-Boxboro) for expanded social and educational opportunities in the local community. Students participate in vocational experiences that fit their specific strengths and interests, including sites such as Meals-on-Wheels, Crossroads Cafe, Great Road Kitchen, Littleton Community Farm, and the Council on Aging Thrift Shop. Partnering with members of the Littleton community, parents and families, and adult agencies are key elements of the Littleton Transition Program.

ADDITIONAL EDUCATIONAL OPPORTUNITIES

Tutoring Center

The Littleton High School Tutoring Center provides academic support to students throughout the school day. Students receive instructional support and work collaboratively with staff to develop study skills and improve executive functioning skills in a small group setting. The mission of the Tutoring Center is to encourage students to engage as active learners, set goals, and identify and implement strategies for academic success. academic support is available to students who have been recommended by guidance counselors or teachers and referred by the Student Support Team.

The Tutoring Center operates in tandem with a Community Volunteer and peer Tutoring Program that is open to all students at Littleton High School. Community volunteers and peer tutors are available to

assist students in a variety of content areas as needed. Schedules for community volunteers and peer tutors are available in the Tutoring Center and are posted throughout the school.

Career Exploration

Objectives – This program is an integral part of our commitment that all students will graduate from high school with skills that will make them College and Career ready. Regardless of the direction a student chooses, they must make their own decisions and an educational plan must be in place to meet the individual goals of the student, and to provide a learning structure. The Littleton High School Internship and Work-Study program allows students with paid jobs and/or unpaid internships to prepare for the world of work and earn high school elective credit. This program is aligned with the Massachusetts Work-Based Learning Plan, and will develop Foundation Skills that are common to all jobs, while also developing Career skills specific to their workplace

Internship Program #041

2.5 Credits

This program is designed to immerse students in the real world of careers and provide a unique opportunity to experience the career world beyond Littleton High School's existing curriculum. The program is primarily open to seniors, but juniors and underclassmen may be considered pending the principal's approval. Students will be evaluated using the Massachusetts Work-Based Learning Plan. Students must participate in this internship for five days during the school week. This program is graded on a pass/fail basis.

Work Study #044

2.5 Credits

This program is designed to immerse students in the real world of work and help them acquire specific occupational skills. This opportunity is available for students who intend to immediately enter the workforce after graduation. Students will be evaluated using the Massachusetts Work-Based Learning Plan. Students must participate in this work-study experience for five days during the school week. This program is graded on a pass/fail basis.

Online Learning

Virtual High School

2.5 or 5 Credits

In addition to selecting courses offered at Littleton High School, students may also apply to enroll in courses through VHS (Virtual High School). These challenging courses are appropriate for self-directed students who have the ability to manage the responsibilities of independent, self-guided learning. The VHS course catalog and additional information is available at the website listed below. As Littleton High School is limited in the number of courses we can sponsor, students must apply in writing at the time of course selection. See your Guidance Counselor for an application form.

Please see details about VHS offerings online at:

<https://my.vhslearning.org/PublicStudentCourseList.aspx>