

Hanover High School  
**Program of Studies**  
2022 – 2023



The Program of Studies is an excerpt from the entire Student Manual. It is currently in DRAFT form and will be presented at the Hanover School Committee on March 23, 2022.

# Academic Information

Consistent with the Hanover Public School System's belief in equity and excellence for all students, and built upon Hanover High School's Core Values and Beliefs that we provide "a competitive and challenging curriculum specific to individual educational needs, empowering students to succeed in the academic, social, and civic arenas," Hanover High School stresses academic rigor through challenging graduation requirements.

## Graduation Requirements

All students are required to earn 120 credits as well as earn a Competency Determination through participation in MCAS testing in order to graduate. Students must earn a Competency Determination in English Language Arts and Math MCAS exams or successfully complete an Educational Proficiency Plan (EPP). In addition, all students must pass the Science MCAS.

## Graduation Participation

Graduation is a privilege, not a right. The Principal has the prerogative to award the diploma at a later date. Once seniors have been released from school after their final exams, they are not to return to school except for school business or as directed by the Administration for specific exercises. No disruption of the school will be tolerated at any time. Failure to comply can result in nonparticipation in graduation and withholding of the diploma until after graduation. Criminal conduct will be reported to the police. The Principal shall, well in advance of graduation, make known in writing to members of the graduating class and their parents the standards of proper conduct pertaining to graduation. Because the school is interested in maintaining the quality and integrity of its programs throughout the school year, infractions of school rules which occur after May 1<sup>st</sup> of any school year may be subject to further consequences in addition to those listed below, which include but are not limited to, removal from school activities, senior class activities and/or participation in graduation activities or ceremonies. The Principal has the right to refuse a student's participation in the graduation ceremonies and to withhold awarding of a diploma on graduation day for reasons including but not limited to: (1) Failure to pass the required courses and meet academic requirements for graduation, (2) Failure to participate in the graduation rehearsals as deemed necessary by the Principal, (3) Refusal to wear academic robes (caps, tassels, and gowns) and other appropriate clothing as required by the Principal, (4) Violation of the Drug & Alcohol Policy after May 1, (5) Serving of a suspension at the time of graduation and (6) Any breach of behavior or decorum that would tend to discredit the school while attending or while en route to or from any of the traditional functions.

## Hanover High School Course of Study

### Humanities Courses (45 credits)

- English – 20 credits (4 years)
  - Students may not take more than one English course per year until senior year. During senior year, students may take English 11 and senior-level English as necessary to graduate.
- History – 15 credits (3 years)
  - Must include two years of US History and one year of World History
- World Language – 10 credits (2 years)

### STEM Courses (35 credits)

- Math – 20 credits (4 years)
- Science – 15 credits (3 years)
  - Must include biology as well as two additional lab sciences

### Physical Education/Wellness Electives (10 credits)

### Other Electives (30 credits)

- Any approved elective except PE/Wellness, which is already required

Total: 120 credits to graduate

## Promotion Requirements

Grade 9 to Grade 10 – 30 credits

Grade 10 to Grade 11 – 60 credits

Grade 11 to Grade 12 – 90 credits

## Community Service Graduation Requirement – 40 Hours

Hanover High School is committed to the benefits of a Community Service Graduation Requirement. Our Core Values and Beliefs Statement summarizes, “We believe that respect, compassion, and empathy promote a positive climate that fosters school spirit and unity.” Further, our 21<sup>st</sup> Century Learning Expectations require that HHS students act responsibly and are “active citizens who demonstrate an understanding of civic responsibility.” Therefore, community service is an opportunity for students to become active citizens by developing an appreciation for the responsibility we all have as citizens to contribute to the improvement of the communities in which we live. In doing so, students will also have the opportunity to enhance their personal growth, build their self-esteem, and develop their social skills. By making community service a graduation requirement, Hanover High School recognizes the need for all students to become active citizens.

*Definition: Community Service is an action, performance, or a “hands-on” activity by an individual or group without compensation, whose effort will directly benefit others. Participation or membership in an extra-curricular club or organization does not constitute community service (i.e., meetings or rehearsals). Taking part in a community service activity that is done by the extra-curricular club would count.*

Students will be required to do 10 hours of community service per year for a total of 40 hours. In this way, students remain active in their community for all four years. Transfer students would be required to do 10 hours of community service for each year they attend HHS. In as much as these are already embedded into the curriculum, the Senior Humanities Projects will not count toward the ten hours for the purposes of this graduation requirement. An informational presentation on the procedures for procuring and documenting community service will be given to all students at the start of each year, and regular communications will be made available throughout the year. It is possible to complete these yearly requirements in the summer prior to the next school year. The ten hours of Community Service must be accrued between July 1 and June 30 of each school year with the exception of senior year where the community service activity must be completed by May 1st. Students will be able to log their hours directly into the Aspen Student Information System for approval, and they will receive several communications throughout the year regarding service opportunities and their individual progress towards this graduation requirement. The Hanover Public Schools Family and Community Engagement Office (FACE) oversees all community service communications. Their email address is [communityservice@hanoverschools.org](mailto:communityservice@hanoverschools.org).

## Course Levels

### *Advanced Placement (AP)*

Advanced Placement courses involve a prescribed curriculum determined by the College Entrance Examination Board. The course work is considered college-level preparation, carries additional weight in computing grade point average, offers the opportunity to earn college credit, and is designated to be rigorous and challenging. Students considering enrollment in an AP course should speak with their guidance counselor, the AP teacher, and their parents/guardians and consult each department course description for AP courses offered in each department before making any decisions. All AP courses require summer work prior to the start of the school year. Any student who enrolls in an AP course is required to take the AP exam in May of the school year. Students must pay for the AP exams before January 15. Financial assistance is available upon request.

### *Honors (H)*

These courses are recommended for students who demonstrate high academic achievement through a combination of motivation and aptitude. These courses contain considerable enrichment and acceleration. Instruction assumes that students are able to grasp content and concepts on initial presentation. These courses emphasize higher-order thinking in analysis, synthesis, and evaluation. Outside reading, problem-solving, and study are required. Students are expected to show initiative with respect to organization of time, long-term assignments, and seeking extra help. Written work must exhibit complexity in structure, thought, and vocabulary.

### *College Preparatory*

These courses are demanding and require a great deal of outside preparation. Student work requires thoughtful application and analysis of content. Consolidation and application of concepts are developed both independently and with teacher guidance. Written work exhibits proficiency in sentence structure, sophistication of vocabulary, and in the development and integration of themes and concepts. Outside reading, problem-solving, and study precede and follow classroom discussions. All courses in this Program of Studies are college preparatory courses, unless identified as honors (H) or advanced placement (AP).

### *Course Selection and Changes*

- The master schedule of courses for the high school is determined by student requests in the spring of each year. Staffing is assigned based on student requests. Courses should be chosen carefully by students, who should seek the advice of faculty, guidance counselors, and parents/guardians.
- Courses requested by a student are not guaranteed to be a part of the student's schedule.
- At times, adjustments are made to student schedules because of conflicts that result when two courses are offered at the exact same time and options are not available. When such a conflict arises, students and parents/guardians are often placed in courses they may not have requested in order to give the student a full and complete schedule.
- Student-initiated course changes during the add/drop period (the first week of school) begin with the student's guidance counselor. Changes involving errors, conflicts, or necessary revisions are handled first. Course changes must be made in the best interest of the student's academic schedule. Requests made to change teachers will not be honored without the permission of the principal.
- After the add/drop deadline has passed, the student and/or parent will initiate communication with the teacher, department head, director, and/or guidance counselor when schedule changes or level drops are requested.
- All parental and student-initiated schedule changes after the add/drop deadline require the completion of the schedule change request form and a conversation with the department head and guidance counselor. Forms are provided by the department head.
- The deadline for all add/drops is one week after the first day of school

### *Initial Course Selection for Grade Nine*

Course placement for grade nine students incorporates grades in their current eighth-grade courses, teacher recommendations, MCAS test results, standardized test results, as well as student and parent requests. The high school guidance counselors meet with incoming 9th-grade students in the spring of their 8th-grade year during an assembly presentation to assist with their ninth-grade course selection. A Curriculum Night is also held to acquaint parents/guardians and incoming eighth-graders to Hanover High School and its rigorous academic program.

### *Level Changes*

The following grade recommendations serve as guidelines for students who seek to maintain or change levels. These grade recommendations are not cast in stone and serve to begin the conversation between you, your guidance counselor, teachers, and parents/guardians. In general, a student should earn a B- or better to continue in an honors course. It is recommended that a student earn a B+ or better to move from college preparatory to honors coursework. Guidance Counselors consult with the curriculum director, teachers, parents, and students when the student requests a level change.

### *Dual Enrollment*

As part of the Massachusetts Education Reform Act, students may qualify to take college-level courses for high school credit. Students will be awarded a minimum of 2.5 credits for each semester course successfully completed. The Hanover School System is not responsible for tuition or transportation. Additionally, Hanover High School offers a dual-enrollment program in partnership with Quincy College whereby adjunct-qualified HHS teachers may teach an approved HHS course that is recognized as a Quincy College course. There is a fee associated with this dual-enrollment opportunity. See your Guidance Counselor for more information.

### *Assessment*

### *School Accreditation*

Hanover High School is accredited by the New England Association of Schools and Colleges (NEASC) which is one of six regional accrediting associations in the United States. NEASC conducts a comprehensive evaluation of member secondary schools once every ten years. Association accreditation expresses confidence in the secondary schools' ability to meet predetermined standards in instruction, curriculum, assessment, leadership, and community resources.

#### *Massachusetts Four-Year State College and University Admission Requirements*

The following college preparatory courses must be taken and passed: English - 4 years, Mathematics - 4 years (Algebra 1 & 2, and Geometry or Trigonometry or comparable coursework), Science-3 years (3 lab sciences), Social Science - 2 years (1 year of U.S. History), Foreign Language - 2 courses (in a single language in high school), and Electives - 2 years (from the above subjects or from the arts and humanities or computer science).

#### *The minimum GPA for any Massachusetts State College or University is 3.0*

For those candidates who do not meet the minimum GPA, a sliding scale consisting of the GPA and SAT I scores can be used. Some students who do not meet minimum requirements may be accepted under a special admissions program. However, no applicant with a recalculated high school GPA below 2.0 may be admitted to a four-year state college or university. Attainment of minimum admission requirements does not guarantee acceptance. Students should consult with guidance for more detailed information.

#### *NCAA Requirements*

Any student who plans to participate in college athletics is advised to see their Guidance Counselor at the end of their sophomore year for specific NCAA requirements.

#### *PSAT*

Consistent with our beliefs to provide "a challenging curriculum specific to individual educational needs," Hanover High School is requiring all 11th-grade students to take the PSAT/NMSQT in preparation for college and career. The exam will be administered in October during the school day. The score report from these exams will provide the individualized educational tools necessary for our students to get an early start in preparation for college and careers. Hanover High School faculty will evaluate the results in the aggregate addressing school-wide strengths and weaknesses as well as overall Hanover High School curriculum design. The PSAT provides all students an opportunity to experience college-level academic content and be evaluated accordingly. Any parents/guardians who have questions about this opportunity for all are urged to call the principal. There is a fee to take the PSAT. Any student on free and reduced lunch will be exempt from payment. Financial aid is available upon request.

#### *PREACT*

The Pre-ACT empowers 10th graders with a unique test practice experience. Scores provide valuable insights into a student's predicted performance on the ACT and help inform important high school course decisions. Pre-ACT reporting includes both academic and career indicators, which are designed to identify strengths and areas of improvement. All sophomores are required to take the Pre-ACT. The exam will be administered during the testing window of January to May. There is a fee to take the Pre-Act. Any student on free and reduced lunch will be exempt from payment. Financial aid is available upon request.

#### *Calculation of Final Grades*

*Year course:* Sum of the term grades times two, plus the final exam grade, all divided by 9.

*Semester Course:* Sum of the term grades times four, plus the final exam grade, all divided by 9.

#### *Grade Point Average and Class Rank Percentile*

Any Hanover High School leveled course is part of the HHS Grade Point Average (GPA). In order to compile a GPA, the "Weights for Final Grades" chart will be used. This chart is used for GPA calculation and CLASS RANK PERCENTILE. Grade point averages will be listed on transcripts on a 4.0 scale.

*HHS GPA:* Includes all leveled courses

*Academic Core Course GPA:* Includes all weighted non-elective core courses

All students are calculated in class rank percentile. Any course that is leveled will be factored in determining class rank

percentile. Class rank percentile will be determined at the end of the junior year and at the middle and third quarter of the senior year.

- A weighted numerical equivalent is assigned to the final grade of every leveled course. Failing grades are also included. See the following grid.
- Class rank percentile is determined by the sum of the final GPA equivalents divided by the number of leveled/weighted courses.
- Transfer grades are not calculated into either HHS GPA or Core Course GPA.
- A minimum of two full years of attendance (70 Credits of HHS coursework) at Hanover High School is required to be considered for Valedictorian and/or Salutatorian and academic scholarship awards based upon Grade Point Average.
- A student who earns an A- or higher in all courses will be designated as achieving High Honors.
- A student who earns a B- or higher in all courses will be designated as achieving Honors.

*Weights for Final Grades, GPA, and Class Rank Percentile*

Grade	Numeric	AP	Honors	CP
A+	97-100	5.1	4.8	4.3
A	93-96	4.8	4.5	4.0
A-	90-92	4.5	4.2	3.7
B+	87-89	4.2	3.9	3.4
B	83-86	3.9	3.6	3.1
B-	80-82	3.6	3.3	2.8
C+	77-79	3.3	3.0	2.5
C	73-76	3.0	2.7	2.2
C-	70-72	2.7	2.4	1.9
D+	67-69	2.4	2.1	1.6
D	63-66	2.1	1.8	1.3
D-	60-62	1.8	1.5	1.0
F	0-59	0.0	0.0	0.0

*Performance Reports*

- Report cards are issued on a quarterly basis. Students receive report cards via Aspen. Specific dates when report cards are issued can be found in the Student Manual. These dates are subject to change at the discretion of the Principal based upon snow days.
- Interim Progress Reports are available to all students and parents in all subjects at the midpoint of every marking term via the parent portal. Parents are urged to stay in contact with teachers on a regular basis if they have concerns about their child’s performance. Parental visits to the school should be made by appointment. Parent conferences are held twice a year at the end of the first and second terms.

*Final Exams*

If a senior has obtained a B+ (87) average and has earned at least a B+ (87) for the 4<sup>th</sup> term in a yearlong course, then he/she has the choice of being exempted from the final exam in that class. Any students who do not take their required final exam on the day designated, and have not made other arrangements, will receive a grade of zero for their final exam. All freshmen, sophomores, and juniors are required to take all final exams regardless of their averages.

### *Make-up Work Due to Absence*

Completion of work missed by a student due to absence is the responsibility of the student. Parents should contact the Guidance Department for make-up work due to an extended absence of over 5 days. Students should contact teachers for absences less than 5 days. Incomplete work at the end of a marking period must be made up within two weeks. Failure to make up work in the given period of time will result in a failing grade for the specific assignments. The Principal has the discretion to extend time for make-up.

### *Incomplete Work due to Medical Problems*

Students who receive an incomplete grade at the end of a term will have ten (10) school days to complete the necessary work. Students with documented medical issues will be allowed to withdraw from a course and at that time will be assigned a WP (withdraw passing) or WF (withdraw failing) depending on the student's average grade of all work completed at that point. Credit for the course will not be given. WP or WF does not waive a prerequisite for a course the following year. In the case of an extenuating issue and at the discretion of the Principal, students may be given a WM (withdraw medical) as a final grade notation. Credit for the course will not be given. WM does not waive a prerequisite for a course the following year.

### *Extended Absences - Tutoring*

Upon receipt of a physician's order that a student must remain at home or in a hospital for not less than fourteen (14) days for medical reasons, the student becomes eligible for tutoring services under Chapter 766 CMR 28.03 (3c).

### *Test and Quiz Make-up*

Teachers are available during office hours as determined by the teacher. Teachers responsible for the instruction of different courses and levels may post a make-up schedule by course. It is the responsibility of the student to arrange make-up times for tests, quizzes, and homework. Students have the equivalent number of days they have been absent plus one additional day to make up work.

### *Homework*

Homework is integral to learning and is an extension of the classroom experience. A central goal of any academic endeavor is to develop and foster independent learning, and homework provides much of that opportunity. Homework may be assigned to supplement or to reinforce classroom learning. As a general but not an absolute procedure, homework is assigned in every major subject on every school night. However, individual teachers determine, according to the course requirements, the type and the nature of the individual assignments as well as the quantity and value of each. Homework varies by subject and by task, including such activities as reading, problem-solving, computing, formal and informal writing, brainstorming, preparing reports, conducting research, analyzing, interviewing, reviewing, reflecting, and studying. Consequently, the amount of time allotted to homework must be determined by the nature of the assignment and may vary considerably according to the individual teacher's requirements. It is not unreasonable, however, for students in the most demanding courses to receive as much as one hour or more of homework per subject per night. Students are also accountable for the assigned work and are expected to meet established deadlines. Consequences for failure to complete the work or to meet the deadlines are established by individual classroom teachers and are made known at the time of the initial assignment. Absent students have the responsibility to find out what they have missed and to make up that homework.

### *Withdrawal from a Course*

Any withdrawal from a course after term one is indicated on the student's record by W (withdrawal), WP (if passing at the time of the withdrawal), or WF (if failing at the time of the withdrawal).

### *Summer School and Course Failure Options*

Students who fail a course with a grade below a 50 must repeat the course for credit during the following school year. When a student fails a course with a 50 or higher, he/she may participate in a summer school program approved in advance by the administration, at the student's expense. Students may enroll in a maximum of two summer school classes in one summer for credit. Please see the Student Manual for further applicable policies and information regarding summer school.



## Specialized Academic Programs

### *Special Education*

Hanover High School provides special education services to students in accordance with the Individuals with Disabilities Education Act (IDEA) and the Massachusetts General Law Chapter 766. Special Education is intended to provide services to students with disabilities requiring specially designed instruction in order to make progress in the general education curriculum. A variety of services including academic support, reading, speech and language, physical therapy, occupational therapy, adaptive physical education, career and college transition planning, and vocational training are provided. Services are provided to students in the least restrictive environment as determined by the Team. Specific questions regarding special education should be directed to the High School Special Education Administrator.

### *Academic Strategies*

Students are eligible for Academic Strategies only if specially designed instruction outside of the general education classroom is identified as part of an Individual Education Plan (IEP). Academic Strategies supports students by developing specially designed curricula to enable students to make effective progress and access the general education curriculum. Students in Academic Strategies work toward the individual goals and objectives of their IEP as determined by the Team. Depending on their IEPs students may earn 2.5 or 5.0 credits per year in Academic Strategies and will be graded pass/fail.

### *Independent Study*

Independent Study provides an opportunity for the more advanced, responsible student to work on a project of his/her choice with a teacher-advisor outside of the regular classroom setting. A student must develop a project proposal and present it to a faculty member who would volunteer to act as an advisor. The student will be graded each marking term on the basis of demonstrated achievement and effort. A student may earn up to five (5) credits per year. The privilege of developing and implementing an independent study program will depend on the availability of teacher supervision and time. Independent Study courses will not count toward a student's GPA and Class Rank calculations as they are not leveled. All requests for Independent Studies must go to the appropriate director for review and receive final approval from the Principal.

### *Virtual High School*

Students may earn up to 2.5 credits per semester or up to 5 credits per year in this innovative and challenging program. Hanover High School students will have the opportunity to enroll in unique courses not traditionally available at Hanover High School, such as Pre-Veterinary Medicine or Entrepreneurship or Screenwriting. Virtual High School classes take place entirely over the Internet. Students may choose from a full catalog of semester-length courses, including honors and college preparatory offerings. Year-long Advanced Placement courses are also available. Students will not be able to enroll in any Virtual High School course that is currently being taught at Hanover High School without the written permission of the Principal. VHS students gain essential learning skills, such as information and media literacy practice, online collaboration, communication, and team-building. The structure of VHS courses requires productivity, initiative, and self-direction from students who will be entirely accountable and responsible for their own learning. Class sizes are limited to 25, and there is an emphasis on the interaction between teachers and students. Activities are student-centered and discussion and group activities are a part of each VHS course. Students will be scheduled to report to either the Library or the Engineering Design room to attend their VHS class. Students will be chosen on a first come first served basis with preference given to seniors, juniors, sophomores, and finally freshmen in that order. VHS classes are offered in a scheduled asynchronous mode. This means that classes follow a semester schedule and assignments are due at specified weekly intervals. However, students can complete their work at any time during the week, as long as work is posted by specified due dates. Site coordinator Mrs. McHugh will be available throughout the year for technical assistance, distribution of class materials, and biweekly progress reports which will be sent home. The VHS course will count toward a student's GPA and Class Rank if the student is taking the course as part of their seven-period day. VHS courses taken as an extra course beyond the seven-period day will not count toward the student's GPA and Class Rank. All VHS courses count toward partial fulfillment of the graduation requirements described on page 16. Please login to VHS online at: [www.govhs.org](http://www.govhs.org) to see the course offerings. For further information, please see your guidance counselor or librarian and request a registration form and VHS course contract.

### *School to Work Program*

The School-to-Work Program provides a structure for the school and business community to close the gap between



classroom learning and the skills necessary for career success. It is a cooperative program designed to provide the student with a meaningful job, which will make him/her a contributing member of the community and will instill a strong work ethic. This course provides the opportunity for students to gain authentic work experience and skills, possible full-time employment upon graduation, and career exploration. The program requires students to attend school for six periods a day and work a minimum of 10 hours per school week. Students must be at least 16 years of age and will be required to have an annual physical examination. Specific guidelines and rules will be distributed to all candidates at an initial meeting in June. For grade 11-12 students.

# PROGRAM OF STUDIES

## 2022 – 2023

The Program of Studies includes course descriptions that assist you as you plan your course selections for the year. Greater detail can be provided by faculty, directors, and guidance counselors. Promotion requirements and graduation requirements are clearly defined in the Academic Information section, as well as in the introduction provided by each department area.

You are encouraged to challenge yourself academically by enrolling in courses that demand excellence in your schoolwork. Meeting these challenges ensures that you're equipped with the essential skills necessary to meet the high expectations of college and the workplace. In short, our goal is to provide you with the essential skills needed for your success after graduation. The Massachusetts Department of Elementary and Secondary Education identifies broad, skills-based themes. These include: (a) Information and Communication, (b) Thinking and Problem Solving, (c) Interpersonal and Self-direction Skills, (d) Global Knowledge and Understanding, (e) Financial, Economic, and Business Literacy, (f) and Civic Literacy. These themes are woven throughout the course descriptions.

As you select courses, it is important to involve your parents, directors, and guidance counselor in the decision making process. Our experienced and professional staff will provide you with the support, encouragement, and challenges that you need to become a successful individual in school and in life.

Parents and guardians are encouraged to participate actively in the course selection process this year as your student makes decisions about his/her course of study for next year. Your involvement is critical to ensuring that your child enrolls in the appropriate courses and makes decisions that will have an impact on their future goals and aspirations. If you have questions, please do not hesitate to contact your student's guidance counselor, a department head, a member of the faculty, or an administrator.

### How to Use The Program of Studies

Students are encouraged to plan a course of studies for four years. Please take some time to review the graduation requirements that are detailed in this section and utilize the four-year sequence planner at the end of this booklet. Schedule your program with your future in mind. Students who intend to continue their education after graduation must pay close attention to college admissions requirements when planning a four-year sequence. Levels are designated in most courses and all levels are college preparatory. The curriculum for all courses is aligned with the Department of Elementary and Secondary Education Frameworks. Seek input carefully and take advantage of the advice available from teachers, counselors, administrators as well as parents/guardians. If you have questions about the types of courses you should take in order to be equipped for a specific career field or specific type of college or university, please consult your Guidance Counselor ahead of time. Courses detailed in this *Program of Studies* indicate Hanover High School's commitment to equity and excellence for all students. However, if an insufficient number of students select a specific course, it may not be possible to offer the course. In many cases where courses are oversubscribed, priority for enrollment will be given to seniors, juniors, sophomores, and finally freshmen. Students who are unable to enroll in a course of their first choice will be provided a course by his/her counselor to give the student a full schedule. Students may meet with the counselor to make changes should this occur.

## ENGLISH COURSES

Course No.	Title	Level	Credits	Grades
111	English 9 – Honors	H	5.0	9
112	English 9	CP	5.0	9
113	English 9	CP	5.0	9
121	English 10 – Honors	H	5.0	10
122	English 10	CP	5.0	10
123	English 10	CP	5.0	10
130	English 11/12 – Language & Composition – AP	AP	5.0	11, 12
131	English 11 – Honors	H	5.0	11
132	English 11	CP	5.0	11
133	English 11	CP	5.0	11
140	English 11/12 – Literature & Composition – AP	AP	5.0	11, 12
144	English 12 – Reader’s Journey – Honors	H	5.0	12
145	English 12 – Reader’s Journey	CP	5.0	12
146	English 12 – An Adventure in Space and Time – Honors	H	5.0	12
147	English 12 – An Adventure in Space and Time	CP	5.0	12
153	English 12 – Literature and Popular Culture – Honors	H	5.0	12
154	English 12 – Literature and Popular Culture	CP	5.0	12

## ENGLISH

English courses develop students' reading, writing, speaking, listening, and thinking skills and provide students with an understanding of literary works of merit. In alignment with Massachusetts State Frameworks in literacy, the curriculum focuses extensively on informative/explanatory writing, narrative compositions, and the development of spoken and written arguments. Reading is deliberately addressed in terms of the close reading of literature and informational/non-fiction texts. In English courses, students, as both readers and writers, develop a greater awareness of the magic and power of words, learn to use critical thinking skills to challenge unexamined assumptions, employ a variety of media for effective communication, and develop an awareness of the way literature mirrors various aspects of the human condition. Skills such as critical thinking, collaboration, public speaking, global awareness, creativity, self-direction, interpersonal awareness, and technology are encouraged and stressed in all English courses.

### 111 ENGLISH 9 – Honors

5 credits/year

Ninth grade Honors English focuses on writing that includes the informal and critical essay. In addition, students expand their critical writing skills by including the use of references from outside sources—both online and textual. Consequently, the students are expected to attain a higher degree of mastery in essay writing. Students are introduced to world literature through a variety of genres: novels, plays, epic poetry, short stories, etc. The literature is used as a basis for sharpening critical and analytical skills. Some of the works read include: *Romeo and Juliet*, *Animal Farm*, *Our Town*, *Great Expectations*, *The Odyssey* and *Les Miserables*. In addition, the students are given vocabulary words that are added to a cumulative list. Students work on independent projects, are assigned independent reading, and work on oral interpretation and informative speeches. Students in this course are expected to demonstrate a consistent work ethic, an aptitude for literary analysis, and a desire to improve their writing skills through challenging assignments.

### 112, 113 ENGLISH 9

5 credits/year

In this course, students practice writing in order to develop concise sentences and paragraphs leading to the composition of the informative essay. Grammar is studied in order to give students the tools needed to write well. The students read selected literature designed to promote improvement in comprehension skills and vocabulary, and to understand the figures of speech. Students read novels, poems, plays, and short stories. Students read such works as *Romeo and Juliet*, *Animal Farm*, *Our Town*, *Great Expectations*, and *The Odyssey*. These works require the student to read with a greater depth of understanding. Weekly cumulative vocabulary is required. The students prepare an informative speech, read a book of their choosing each quarter, and work in groups to create literature-based projects. A co-taught section of this course is available.

### 121 ENGLISH 10 – Honors

5 credit/year

This course examines a variety of literary works chosen because they are intellectually demanding and, consequently, promote improvements in reading comprehension skills and improved vocabulary. *Julius Caesar*, *A Tale of Two Cities*, *Lord of the Flies*, and *Night*, as well as other significant works, are studied. The genres of the short story, poetry, and nonfiction are also included as study units. Students are also encouraged to write, direct, and act in their own dramatic creations and present an informative or persuasive speech. Writing expository papers is required with frequent assignments of varying length. Critical and persuasive papers are assigned that require MLA documentation of online and textual sources. Grammar and usage units are reviewed and studied during the year, and independent reading assignments are required. Students in this course are expected to demonstrate a consistent work ethic, an aptitude for literary analysis, and a desire to improve their writing skills through challenging assignments.

### 122, 123 ENGLISH 10

5 credits/year

In this course, literature is selected to further the student's introduction to and information about world literature. This literature is selected to promote improvement in comprehension skills and to increase vocabulary. Students read several classics such as *Lord of the Flies*, *To Kill a Mockingbird* and *Night*. Short story, essay, drama, non-fiction, and poetry units are also presented. Literary terms and themes are studied. Grammar is reviewed as a necessary tool for improving the writing process. Weekly cumulative vocabulary is required. The students concentrate on the development and reinforcement of the necessary skills to create effective expository, descriptive, persuasive and narrative essays. To further sharpen their composition skills, students are taught how to write a summary. Students also engage in group projects of a literary or creative nature and give oral presentations. A co-taught section of this course is available.

130 ENGLISH 11/12 – ADVANCED PLACEMENT LANGUAGE & COMPOSITION 5 credits/year  
This yearlong college course is designed to prepare students for the AP Language and Composition exam given in May of each year. While engaging in the study of rhetoric, this course will focus primarily on the reading and writing of nonfiction. Through close readings of non-fiction texts, such as *The Glass Castle*, *In Cold Blood*, *Outliers*, and *The Immortal Life of Henrietta Lacks*, students will develop a keener sense of the methods and rhetorical strategies at work in successful writing. Students will read a variety of essays from a range of historical contexts and will immerse themselves in the process of writing as they try their hands at synthesis, argument, and analysis essays. Extensive reading and writing are expected from students throughout the course. Any student who enrolls in an AP course is required to take the AP exam in May.

131 ENGLISH 11 – Honors 5 credits/year  
Honors English stresses the chronological, as well as thematic, study of American literature. All genres are included. An understanding of Puritanism through the writing of Edwards, Taylor and Bradstreet is stressed, as are the Romantic and Transcendental movements through the writing of Poe, Bryant, Emerson, and Thoreau. The writings of these 18th and 19th century writers are linked to the thinking and writing of 20th and 21st century writers in order to emphasize thematic and archetypal relevance. These readings also serve as a background for the in-depth study of *The Scarlet Letter*, *Huckleberry Finn*, *The Great Gatsby*, and *The Catcher in the Rye*. The essays and sermons of the Puritans, the speeches of our founding fathers, and the Lincoln/Douglas debates lead naturally into the unrest as seen in the writing of Faulkner, Baldwin, and King. Students will also draw on texts from *Conversations in American Literature*. Critical and expository essays ranging from five paragraphs to the formal paper are required. Some assignments include the use of supportive quotations and paraphrased passages from texts under study; others demand the use of outside sources—both text and online sources, and these online sources are often accessed via web searches and the literary website JSTOR. Additionally, students gather in groups to discuss, debate, come to a consensus, and report out on various literary challenges. Students in this course are expected to demonstrate a consistent work ethic, an aptitude for literary analysis, and a desire to improve their writing skills through challenging assignments. Practice is given to the college application essay. Cumulative vocabulary is required.

132,133 ENGLISH 11 5 credits/year  
This course surveys American literature. The overview will begin with a study of pre-colonial literature and the experience of the colonizers and the colonized. Puritanism and the Romantic/Transcendental movements are explored. Students read novels such as *The Scarlet Letter*, *The Grapes of Wrath*, and *The Catcher in the Rye*. Lessons learned from classic American literature will assist students in gaining greater understanding of themselves and the world around them. Students often respond via the class website to discuss literary texts and to comment on the comments of their classmates. Independent reading is assigned each term. Expository writing - an ongoing process - is stressed, with a review of accepted usage and sentence structure. Writing assignments range from the personal essay, to the critical analysis of a literary work, to practice in writing essays for college applications. Students sharpen their composition skills by developing their proficiency with summary. Students often engage in group work to collectively think about and to solve thorny literary conundrums.

140 ENGLISH 11/12 – ADVANCED PLACEMENT LITERATURE & COMPOSITION 5 credits/year  
This yearlong college course is designed to prepare students for the AP English Literature and Composition exam given in May of each year. Students selecting this elective are presumed to have developed solid skills, are highly motivated, thoroughly enjoy reading great literature, and look forward to both written and oral analysis. Students also work in groups to edit plays, find thematic links that run through various literary texts, and work to explicate complicated poems. Students not only read poetry; they create their own and read it aloud. When students engage in critical research papers, they rely both on the text and on Internet sites such as JSTOR. Previous success (B or higher) in an honors English 11 or AP Language class is required. Requirements: Summer reading; also, any student who enrolls in an AP course is required to take the AP exam in May.

144 ENGLISH 12 – A READER’S JOURNEY – Honors

5 credits/year

145 ENGLISH 12 – A READER’S JOURNEY

The Reader’s Journey course is designed for students who want to develop as readers, whether they are avid readers who already know their reading preferences, or reluctant readers looking to discover their identities as readers. It allows students to develop an individualized reading plan to address their reading strengths and weaknesses as well as their interests. They will use these texts to hone their critical reading skills. All students’ reading lists will include both fiction and nonfiction texts that span a variety of cultures, time periods, and genres, including essays, poetry, and short stories. Students will work with the teacher to create a reading plan that includes relevant texts by completing assignments based on those texts. Over the course of the year, students will participate in conferences with the teacher, facilitate class discussion, participate in reading circles, and write expository, narrative, and persuasive essays. Students will keep a reading journal throughout the year. This course will culminate in the development of a project that is planned, prepared, and presented in close association with teacher and community involvement. Students can take this course at either a college preparatory or honors level. Students in the honors course are expected to demonstrate a consistent work ethic, an aptitude for literary analysis, and a desire to improve their writing skills through challenging assignments.

146 ENGLISH 12 – AN ADVENTURE IN SPACE AND TIME – Honors

5 credits/year

147 ENGLISH 12 – AN ADVENTURE IN SPACE AND TIME

This science fiction and fantasy course will cover the conjoined genres of science fiction and fantasy. Students will read literature from the scope and history of sci-fi and fantasy, as well as look at the influence they have had on the real world, such as Star Trek’s influence on the genesis of the iPhone, for example. Texts will not be limited to print, but include television and movies as well. Students will become familiar with the history of Western science fiction & fantasy and be exposed to the science fiction & fantasy of other cultures. Students will write literary analysis of science fiction & fantasy as well as create their own works in accordance with the conventions of the genres. Students will also utilize a website that allows the publication of stories in “micro-” format, designed for mobile devices. This course will culminate in the development of a project that is planned, prepared, and presented in close association with teacher and community involvement. Students can take this course at either a college preparatory or honors level. Students in the honors course are expected to demonstrate a consistent work ethic, an aptitude for literary analysis, and a desire to improve their writing skills through challenging assignments.

153 ENGLISH 12 – LITERATURE AND POPULAR CULTURE - Honors

5 credits/year

154 ENGLISH 12 – LITERATURE AND POPULAR CULTURE

The Literature and Popular Culture course includes readings from a variety of genres in both classic and contemporary texts from American, British, and global literary traditions. Students will keep a journal for reflective responses to our readings and complete critical expository essays. They will also learn to read as writers and write as readers in preparation for the college writing experience. Throughout the course, students will draw connections between our readings and present popular culture. Multi-week units include: The Role of the United States Supreme Court, The Economy as it Influences Daily life, The Criminal Justice System, Science, Technology, Progress, America’s Obsession with Celebrity, Life After High School. We will analyze thematic relationships between the two, evaluate these relationships in other cultural and literary contexts, and apply our findings through creative expression. This course will culminate in the development of a project that is planned, prepared, and presented in close association with teacher and community involvement. Students can take this course at either a college preparatory or honors level. Senior students are expected to manage their assignments in a timely fashion, engage in direct conversation with the classroom teacher when struggling, and display a willingness to contribute to intellectual discussions. Students can take this course at either a college preparatory or honors level. Students in the honors course are expected to demonstrate a consistent work ethic, an aptitude for literary analysis, and a desire to improve their writing skills through challenging assignments. The honors level will also require students to read an extra full length text and write an additional 600-800 word essay each term.

HISTORY AND SOCIAL STUDIES COURSES

Course No.	Title	Level	Credits	Grades
211	United States History 1 – Honors	H	5.0	9
212	United States History 1	CP	5.0	9
213	United States History 1	CP	5.0	9
220	United States History 2 – AP	AP	5.0	10
221	United States History 2 – Honors	H	5.0	10
222	United States History 2	CP	5.0	10
223	United States History 2	CP	5.0	10
200	World History: Modern – AP	AP	5.0	11
201	World History – Honors	H	5.0	11
202	World History	CP	5.0	11
230	U.S. Government and Politics – AP	AP	5.0	11, 12
231	Comparative Government and Politics – AP	AP	5.0	11, 12
249	Psychology and Sociology	CP	5.0	12
250	Psychology – AP	AP	5.0	12
259	Sports and Society	CP	5.0	12
260	Global Studies – Honors	H	5.0	12
261	Global Studies	CP	5.0	12
263	Economics – Honors	H	5.0	12
265	Peer Leadership Seminar	CP	2.5	9, 10, 11, 12
272	19th and 20th Century American History – Honors	H	5.0	12
926	Life Skills Student Aide	CP	2.5	9, 10, 11, 12
943	Community Service	CP	5.0	11, 12



## HISTORY AND SOCIAL STUDIES

All Social Studies courses incorporate the learning standards of the Massachusetts Curriculum Frameworks developed by the Massachusetts Department of Elementary and Secondary Education and meet the high expectations stated in the Hanover High School Core Values and Beliefs Statement. Students must complete 15 credits in Social Studies. All freshmen take US History 1 and sophomores take US History 2. All juniors take World History. Students have the opportunity to take four AP courses in Social Studies, beginning with US History in their sophomore year. Seniors continue to have their elective choices.

### 211 UNITED STATES HISTORY 1 – Honors

5 credits/year

This course covers the Revolution through World War I. It is designed for students who have consistently demonstrated strong academic ability and the motivation to work independently. The pace of this course is rapid. Students will be presented with an intellectual foundation of the nation's political, social and economic institutions. Additionally, students will read, analyze and communicate orally and in writing about primary source documents. These readings and other assignments serve as a means to assist students in developing critical thinking and problem solving skills so that they can thrive in a global society.

### 212, 213 UNITED STATES HISTORY 1

5 credits/year

This is an academically rigorous course designed to present a comprehensive survey of American History from the Revolution through World War I. The development and appreciation of American political, social and economic institutions is emphasized. Students will utilize appropriate research, communication and collaboration skills to assess the United States' participation in a global society. Primary source material is commonly used for analysis and evaluation. A co-taught section of this course is available.

### 220 UNITED STATES HISTORY 2 – Advanced Placement

5 credits/year

Advanced Placement United States History is an intensive study of American History from the Colonial period to the present. It is a demanding program that allows students the opportunity to pursue college-level studies while still in high school, and in this case, as early as sophomore year. The course requires students to do a great amount of outside work. Strong reading skills are needed as weekly primary and secondary source reading will be required. Students will be required to write weekly essays. Students as well as parents/guardians are asked to make a strong commitment to the course and accept greater responsibility for their education. Prerequisite for this course is an extensive summer reading requirement. There will be a significant negative impact on a student's term 1 grade if the summer assignment is not completed on time. Any student who enrolls in an AP course is required to take the AP exam in May.

*Guideline:* The most successful students have earned a B+ or better in US History 1 – Honors.

### 221 UNITED STATES HISTORY 2 – Honors

5 credits/year

This course covers American History from the 1920's to the present. It is an academically rigorous course designed for students who have demonstrated consistently strong academic ability in writing and research as well as those students motivated towards independent learning. The pace of this course is rapid and will follow much of the AP curriculum. Students will be presented with an in-depth coverage of social, economic and political concepts. The role of the United States in global affairs will be a major aspect of this course. Primary source material is commonly used and students are expected to make extensive use of critical reading and writing skills.

### 222 UNITED STATES HISTORY 2

5 credits/year

This course is designed to present an academically demanding, comprehensive survey of United States history from the 1920's to the present. It continues to build on the development of the nation's political, social, and economic institutions and the global role of the United States into the twenty-first century. Students will continue to develop their research, communication, and collaboration skills to understand America's role in global affairs, often using primary source materials for analysis and evaluation. A co-taught section of this course is available.

- 200      WORLD HISTORY: MODERN – Advanced Placement      5 credits/year  
This is a rigorous, college-level course designed to explore human history from 1200 CE to the present. The course of study will emphasize the development of analytical and writing skills necessary for success on a collegiate level. To this end, the course devotes considerable time to the critical evaluation of primary and secondary sources, analysis of historiography (The principles, theories, or methodology of scholarly historical research and presentation) and inquiry into global connections that have shaped our present world. A special emphasis will be given to preparation for the AP Exam, including multiple choice question strategies, and long essay and short essay development. Students are expected to complete a summer assignment. There will be a significant negative impact on a student's term 1 grade if the summer assignment is not completed on time. Any student who enrolls in an AP course is required to take the AP exam in May.  
*Guideline:* The most successful students have earned a B or better in US History 2 – AP.
- 201      WORLD HISTORY – Honors      5 credits/year  
World History Honors is designed to allow students to practice and utilize analytic skills and factual knowledge necessary to deal critically with the problems presented in a 21<sup>st</sup> Century global society. This course is designed for students who have a high level of interest in history and excellent reading, writing and analytic skills and who have demonstrated a capability of working independently. Primary source documents will be used as a means of gathering and communicating historical relevance. Additionally, students will be presented and expected to engage with comprehensive material pertaining to European, Latin American, Asian, and African political, economic, and religious histories.
- 202      WORLD HISTORY      5 credits/year  
World History 1 is designed to allow students to practice analytical skills and factual knowledge necessary to deal critically with the problems presented in a 21<sup>st</sup> Century global society. This course is an academically rigorous course designed to present a comprehensive survey of European, Latin American, Asian, and African political, economic, and religious histories. Primary source material is commonly used as a means for analysis, synthesis and evaluation.
- 230      U.S. GOVERNMENT AND POLITICS – Advanced Placement      5 credits/year  
This course explores the political theory and everyday practice that direct the daily operation of our government and public policies. It is a demanding program that allows the student the opportunity to pursue college-level studies while still in high school. The course is for all intents and purposes taught on a college level and it requires a substantial amount of reading and preparation for every class. The objectives of this course go beyond a basic analysis of how the United States government “works.” Students will develop a critical understanding of the strengths and weaknesses of the American political system, as well as their rights and responsibilities as citizens. Additionally, students will complete a summer work requirement. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.
- 231      COMPARATIVE GOVERNMENT AND POLITICS – Advanced Placement      5 credits/year  
This course introduces students to the rich diversity of political life outside the United States. The course uses a comparative approach to examine the political structures, policies, and political, economic, and social challenges among six selected countries: Great Britain, Mexico, Russia, Iran, China, and Nigeria. Additionally, students examine how different governments solve similar problems by comparing the effectiveness of approaches to many global issues. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.
- 249      PSYCHOLOGY & SOCIOLOGY      5 credits/year  
This course is an introduction to the study of human behavior and is structured to both life-oriented and science-oriented psychology. Attention is given to the nature of the discipline, human maturation and development, learning and thinking, motivation and emotion, sensation and perception, and individual differences. This course also studies the relationship between the individual and society. Topics will include the study of culture, socialization, group membership, status, roles, race relations, and the major American institutions: the family, religion, government, and economic institutions.

250 PSYCHOLOGY – Advanced Placement

5 credits/year

This course is designed to introduce 12th grade students to the systematic and scientific study of the behavior and mental processes of human beings. Students are exposed to the psychological facts, principles, and phenomena associated with each of the major subfields within psychology. They also learn about the ethics and methods psychologists use in their science and practice. Topics include but are not limited to history of psychology, research methods, biological bases of behavior, sensation and perception, states of consciousness, learning, cognition, motivation and emotion, developmental psychology, personality, testing and individual differences, abnormal psychology, psychological disorders and social psychology. Additionally, there is an extensive reading and writing summer requirement. Students willing to accept the challenge of a rigorous college curriculum should consider enrolling in the course. Previous success in an honors or AP Biology class is recommended. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.

259 SPORTS AND SOCIETY

5 credits/year

This course will focus on the role and impact of sports in United States society. Topics will include philosophy of youth and high school sports, role of parents and coaches, high school and college sports, Title IX, media influences, college graduation rates of scholarship athletics, globalization of professional sports, and current events.

260 GLOBAL STUDIES – Honors

5 credits/year

261 GLOBAL STUDIES

This is a rigorous, college-level course in which students will examine the individual's role in the global society and the events that shape our changing world. Topics and themes include food and population, war, the spread of disease, human rights, sustainable development, empowerment of women, poverty, ecological degradation, and migration. Utilizing case studies, assigned nonfiction readings, and research, students will examine the root causes, effects, multiple perspectives as well as attempts to resolve international conflicts by developing critical reviews, comparative analysis, and argumentative essays and presentations.

263 ECONOMICS – Honors

5 credits/year

Economics is the study of how people and governments make decisions regarding money, production, consumption, and employment. Topics covered will include the law of supply and demand, saving, borrowing, and investing. Students considering a major in business or students simply interested in their own financial futures should consider taking this class. Upon completion of the course, students will understand terms such as labor, capital, inflation, unemployment, and money supply.

272 19<sup>th</sup> and 20<sup>th</sup> CENTURY AMERICAN HISTORY THROUGH FILM – Honors

5 credits/year

Using a thematic approach, this academic course will explore historical events and specific time periods as depicted through film as well as primary and secondary sources. Students will be required to make extensive use of their writing and communication skills. Films will be critiqued for historical accuracy and biases. This course will also focus on international topics that have had an impact on American culture, foreign policy and the role of the United States in world affairs. Books such as *The Grapes of Wrath*, *All Quiet on the Western Front*, or *The Right Stuff* will be assigned for summer reading and the test will be given in the fall.

265 PEER LEADERSHIP SEMINAR

5 credits/year

The students in this class will be trained by the Anti-Defamation League's World of Difference peer trainers. The training will provide students with the skills and resources necessary to design and lead interactive projects for their peers and other students. The role of a student in the Peer Leadership Seminar is to create and run educational projects for their peers and to promote and model civility and respect. Students must have the willingness to take a stand against prejudice and be willing to make a commitment to creating a positive social atmosphere at Hanover High School. Each student will be responsible for participating in several school-based projects throughout the year. The mission of the Peer Leadership Seminar is to reduce stereotyping and prejudice and increase acceptance of individual differences. This course is graded as Pass/Fail.

926 LIFE SKILLS STUDENT AIDE

2.5 credits/year

The Life Skills Student-Aide Program provides an opportunity for students to partner with Hanover High School special education teachers and students in our Life Skills programs in order to provide a mutually valuable learning experience for all involved. Student aides will work with students in our Life Skills program during a scheduled time in the school day, and may serve in one or more of the following capacities: mentor, one-on-one or small group tutor, teacher assistant. Student aides will typically work with the same teacher, class, and/or student(s) to establish a consistent partnership. This course is graded as Pass/Fail and satisfies the one-year community service requirement for Hanover High School students. Completion of an application and teacher recommendation is required.

944 COMMUNITY SERVICE

5.0 credits/year

943 COMMUNITY SERVICE

2.5 credits/year

Students will engage in community service in an effort to understand critical issues facing society. The objectives are to improve and acquire skills, expand interests, challenge capabilities, realize potential, and discover first-hand knowledge of current issues in our community. Students will participate in existing service projects as well as generate new service projects. The community service experiences may include internships with local organizations during the school day. This course is graded pass/fail.

## MATHEMATICS COURSES

Course No.	Title	Level	Credits	Grades
312	Algebra 1	CP	5.0	9
321	Geometry – Honors	H	5.0	9, 10
322	Geometry	CP	5.0	9, 10
323	Geometry	CP	5.0	10
331	Algebra 2 – Honors	H	5.0	10, 11
332	Algebra 2	CP	5.0	10, 11
333	Algebra 2	CP	5.0	11
334	Algebra 3	CP	5.0	12
341	Precalculus – Honors	H	5.0	11, 12
342	Precalculus	CP	5.0	11, 12
350	Calculus – AP	AP	5.0	12
351	Calculus – Honors	H	5.0	12
362	Probability and Statistics	CP	5.0	12

*Note: Please find the Accounting and Computer Science courses listed in the Business and Information Technology section of this Program of Studies.*

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important processes and proficiencies with longstanding importance in mathematics education. The first of these are the process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency of adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition.

### The Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning

Hanover High School adheres to these Mathematical Practice Standards that apply throughout each course, and together with the content standards, prescribe that the students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

The mathematics department offers a wide range of 5-credit courses to meet the needs of all students. Each student must earn 20 credits in mathematics as well as pass (earn a Competency Determination) the MCAS Mathematics test in order to graduate. Furthermore, it is strongly recommended that all students take and pass Algebra 2. At the discretion of the

principal, Accounting may be used as the fourth year of mathematics for those students who have completed Algebra 2. Please note that some math courses have a suggested guideline to assist students in selecting courses that will provide them with the best opportunity to be challenged and to achieve success.

#### CALCULATOR POLICY

Technology is an essential element in the teaching and learning of high school mathematics. According to the National Council of Teachers of Mathematics, “When technological tools are available, students can focus on decision making, reflection, reasoning, and problem solving.” To that end, Hanover High School students enrolled in Algebra 1, Algebra 2, Precalculus, Calculus, or Statistics should purchase a graphing calculator, preferably a TI-84 Plus or TI-84 Color. It is important for students to gain familiarity with their own calculator in order to use it as a tool during class and for homework. Furthermore, students are expected to use calculators on standardized assessments, including MCAS, PSAT, SAT, and AP, as well as college placement exams. Many of the questions on these assessments are designed in such a way that students are expected to use a graphing calculator. Although there are graphing calculator apps that can be downloaded and used on mobile devices, keep in mind that mobile devices are not allowed on the MCAS, PSAT, SAT, and AP exams. Therefore, it is important that students have access to and learn to use an assessment-approved graphing calculator. There is a very limited number of graphing calculators that can be borrowed on a first come first serve basis – please contact the office for more information.

#### 312 ALGEBRA 1

5 credits/year

The fundamental purpose of this course is to formalize and extend the mathematics that students learned in the prior grades. The critical areas deepen and extend understanding of linear and exponential relationships by contrasting them with each other and by applying linear models to data that exhibit a linear trend, and students engage in methods for analyzing, solving, and using quadratic functions. Upon successful completion of this course, students will be able to:

- Interpret the structure of expressions
- Write expressions in equivalent forms to solve problems
- Perform arithmetic operations on polynomials
- Understand the relationship between zeros and factors of polynomials
- Use polynomial identities to solve problems
- Rewrite rational functions
- Create equations that describe numbers or relationships
- Understand solving equations as a process of reasoning and explain the reasoning
- Solve equations and inequalities in one variable
- Solve systems of equations
- Represent and solve equations and inequalities graphically

*Guideline:* The most successful students have earned a C– or better in Grade 8 Math; a co-taught section of this course is available.

#### 321 GEOMETRY – Honors

5 credits/year

The fundamental purpose of the course in Geometry is to formalize and extend students’ geometric experiences. Students explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. The course is designed for students with a high interest and motivation in mathematics. At times, students are expected to be able to work and study mathematics outside of class. Upon successful completion of this course, students will be able to:

- Experiment with transformations in the plane
- Understand congruence in terms of rigid motions
- Prove geometric theorems
- Make geometric constructions
- Understand similarity in terms of similarity transformations
- Prove theorems involving similarity
- Define trigonometric ratios and solve problems involving right triangles
- Apply trigonometry to general triangles
- Understand and apply theorems about circles
- Find arc lengths and areas of sectors of circles
- Translate between the geometric description and the equation for a conic section

- Use coordinates to prove simple geometric theorems algebraically
- Explain volume formulas and use them to solve problems
- Visualize relationships between two-dimensional and three-dimensional objects
- Apply geometric concepts in modeling situations

*Guideline:* The most successful students have earned an A– or better in Algebra 1.

### 322 GEOMETRY

5 credits/year

The fundamental purpose of the course in Geometry is to formalize and extend students' geometric experiences. Students explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. Upon successful completion of this course, students will be able to:

- Experiment with transformations in the plane
- Understand congruence in terms of rigid motions
- Prove geometric theorems
- Make geometric constructions
- Understand and apply similarity concepts
- Define trigonometric ratios and solve problems involving right triangles
- Understand and apply theorems about circles
- Find arc lengths and areas of sectors of circles
- Use coordinates to prove simple geometric theorems algebraically
- Explain volume formulas and use them to solve problems
- Visualize relationships between two-dimensional and three-dimensional objects
- Apply geometric concepts in modeling situations

*Guideline:* The most successful students have earned a C– or better in Algebra 1; a co-taught section of this course is available.

### 331 ALGEBRA 2 – Honors

5 credits/year

Building on their work with linear, quadratic, and exponential functions, students extend their repertoire of functions to include polynomial, rational, and radical functions. Students work closely with the expressions that define the functions, and continue to expand and hone their abilities to model situations and to solve equations, including solving quadratic equations over the set of complex numbers and solving exponential equations using the properties of logarithms. A graphing calculator is used extensively throughout the course to organize data in tables and graphs, formulate equations, and make predictions and decisions. Students in this course are expected to produce high quality projects outside of class. Upon successful completion of this course, students will be able to:

- Understand the relationship between zeros and factors of polynomials
- Solve systems of equations
- Represent and solve equations and inequalities graphically
- Understand the concept of a function and use function notation
- Interpret functions that arise in applications in terms of the context
- Analyze functions using different representations
- Build a function that models a relationship between two quantities
- Build new functions from existing functions
- Construct and compare linear and exponential models and solve problems
- Interpret expressions for functions in terms of the situation they model

*Guideline:* The most successful students have earned a B– or better in Geometry – Honors.

### 332 ALGEBRA 2

5 credits/year

Building on their work with linear, quadratic, and exponential functions, students extend their repertoire of functions to include polynomial, rational, and radical functions. Students work closely with the expressions that define the functions, and continue to expand and hone their abilities to model situations and to solve equations, including solving quadratic equations over the set of complex numbers and solving exponential equations using the properties of logarithms. A graphing calculator is used extensively throughout the course to organize data in tables and graphs, formulate equations, and make predictions and decisions. Upon successful completion of this course, students will be able to:

- Understand the relationship between zeros and factors of polynomials
- Solve systems of equations



- Represent and solve equations and inequalities graphically
- Understand the concept of a function and use function notation
- Interpret functions that arise in applications in terms of the context
- Analyze functions using different representations
- Build a function that models a relationship between two quantities
- Build new functions from existing functions
- Construct and compare linear and exponential models and solve problems
- Interpret expressions for functions in terms of the situation they model

*Guideline:* The most successful students have earned a C– or better in Geometry 1; A co-taught section of this course is available.

334 ALGEBRA 3 5 credits/year

334D ALGEBRA 3 – Dual Enrollment Quincy College

This course includes the study of arithmetic topics, problem solving, equations and inequalities, sequence and series, elementary functions and elementary trigonometry. This course is designed to help students develop effective strategies to solve math problems on college placement exams, and will also include units from the NEFE High School Financial Planning Program. Upon completion of this course, students should be able to:

- Apply various problem-solving strategies
- Solve problems that involve fundamental arithmetic and algebra concepts
- Solve linear equations and quadratic equation by factoring
- Solve systems of equations and inequalities
- Simplify expressions and solve equations using the properties of exponents and radicals
- Gain knowledge of basic trigonometric functions and exponential functions
- Study sequences and series, determinants, permutations and combinations,
- Gain knowledge about sound money management skills
- Develop positive behaviors to attain financial maturity

*Guideline:* The most successful students have earned a C– or better in Algebra 2; A co-taught section of this course is available.

341 PRECALCULUS – Honors 5 credits/year

341D PRECALCULUS – Honors – Dual Enrollment Quincy College

Students who enroll in this course should be familiar with arithmetic, algebra, and geometry. They will build upon their previous mathematical knowledge and experience. The course is designed for students with a high interest and motivation in mathematics. Students need to be able to work and study on their own. The course curriculum is devoted to trigonometry and specific functions, which lead to an introduction of calculus. The graphing calculator is an essential tool in this course. Upon successful completion of this course, students should be able to:

- Define trigonometric ratios and solve problems involving right triangles
- Apply trigonometry to general triangles
- Find arc lengths and areas of sectors of circles
- Extend the domain of trigonometric functions using the unit circle
- Model periodic phenomena with trigonometric functions
- Prove and apply trigonometric identities
- Represent, model, and perform operations with vector quantities
- Represent complex numbers and their operations on the complex plane
- Interpret and understand the twelve fundamental functions and notation, as they arise in application
- Build a function that models a relationship between two quantities and from existing functions
- Construct and compare linear, quadratic, cubic, and exponential models and solve problems

*Guideline:* The most successful students have earned a B– or better in Algebra 2 – Honors.

342 PRECALCULUS 5 credits/year

Students who enroll in this course should be familiar with arithmetic, algebra, and geometry. They will build upon their previous mathematical knowledge and experience. The course curriculum is devoted to trigonometry and specific functions, which lead to an introduction of calculus. The graphing calculator is an essential tool in this course. Upon successful completion of this course, students should be able to:

- Define trigonometric ratios and solve problems involving right triangles
- Apply trigonometry to general triangles
- Find arc lengths and areas of sectors of circles
- Extend the domain of trigonometric functions using the unit circle
- Model periodic phenomena with trigonometric functions
- Prove and apply trigonometric identities
- Represent and model with vector quantities
- Interpret and understand the twelve fundamental functions and notation, as they arise in application
- Construct and compare linear, quadratic, cubic, and exponential models and solve problems

*Guideline:* The most successful students have earned a C– or better in Algebra 2

350 CALCULUS – Advanced Placement

5 credits/year

Students who enroll in this course will use a multi-representative approach to Calculus expressing problems numerically, graphically, verbally, and analytically. Emphasis is placed on the use of technology to solve problems. The graphing calculator is required for this course. Students will cover topics from differential and integral calculus as outlined in the syllabus provided by the College Board. Students must take the required Calculus AB Advanced Placement Exam to receive Advanced Placement credit. Any student who enrolls in an AP course is required to take the AP exam in May of the school year. Upon successful completion of this course, students should be able to:

- Calculate limits and find rates of change
- Determine slopes, tangent lines, and normal lines
- Apply rules of differentiation and sketch polynomials
- Solve related rates, distance, velocity, and acceleration problems
- Evaluate definite integrals and finite sums
- Interpret solutions to differential equations and slope fields
- Model and solve exponential growth and decay
- Use integration as net change as well as to solve for area and volume

*Guideline:* The most successful students have earned a B– or better in Precalculus – Honors.

351 CALCULUS – Honors

5 credits/year

351D CALCULUS – Honors – Dual Enrollment Quincy College

Students who enroll in this course will use a multi-representative approach to Calculus expressing problems numerically, graphically, verbally, and analytically. Emphasis is placed on the use of technology to solve problems. The graphing calculator is required for this course. Students will cover topics from differential and integral calculus. Upon successful completion of this course, students should be able to:

- Calculate limits and find rates of change
- Determine slopes, tangent lines, and normal lines
- Apply rules of differentiation and sketch polynomials
- Solve related rates, distance, velocity, and acceleration problems
- Evaluate definite integrals and finite sums
- Interpret solutions to differential equations and slope fields
- Use integration as net change as well as to solve for area

*Guideline:* The most successful students have earned a C+ or better in Precalculus – Honors.

362 PROBABILITY AND STATISTICS

5 credits/year

This course is designed for students that have completed Algebra 2. Students will study methods of data collection and analysis. They will be exposed to various visual representations of data. The concepts of probability theory and combinatorics will also be studied. The graphing calculator is a required tool in this course. Upon completion of this course, students should be able to:

- Model sets of finite data appropriately
- Observe and analyze patterns in data and model the data using an appropriate mathematical function.
- Use probability to describe data distributions

*Guideline:* The most successful students have earned a C– or better in Algebra 2.

SCIENCE AND ENGINEERING COURSES

Course No.	Title	Level	Credits	Grades
420	Biology – Advanced Placement	AP	7.5	11, 12
421	Biology – Honors	H	5.0	9
422	Biology	CP	5.0	9
423	Biology	CP	5.0	9
430	Chemistry – Advanced Placement	AP	7.5	10, 11, 12
431	Chemistry – Honors	H	5.0	10
432	Chemistry	CP	5.0	10
433	Chemistry	CP	5.0	10
439	Physics C – Advanced Placement	AP	7.5	12
440	Physics 2 – Advanced Placement	AP	7.5	12
441	Physics 1 – Advanced Placement	AP	7.5	11, 12
442	Physics – Honors	H	5.0	12
443	Physics – Conceptual	CP	5.0	11, 12
450	Environmental Science – Advanced Placement	AP	7.5	11, 12
449	Environmental Science – Honors	H	5.0	11, 12
452	Environmental Science	CP	5.0	11, 12
468	Marine Science	CP	5.0	11, 12
471	Anatomy and Physiology – Honors	H	5.0	11, 12
478	Healthcare Occupations	CP	2.5	9, 10, 11, 12
927	Science Lab Aide	CP	2.5	10, 11, 12
484	Engineering 1: Technical Drawing and Design	CP	2.5	9, 10, 11, 12
485	Engineering 2: Design and Fabrication	CP	2.5	9, 10, 11, 12
486	Engineering 3: Modeling and Prototyping	CP	5.0	11, 12
489	Engineering 4: Engineering Capstone – Honors	H	5.0	12
492	Robotics	CP	2.5	9, 10, 11, 12

## SCIENCE AND ENGINEERING

All students must earn a Competency Determination on the Science MCAS test in order to graduate. All freshmen must take Biology and, as a result, take the Biology MCAS test in the spring of their freshman year. In addition to the Competency Determination in Science, all students are required to pass a minimum of 15 credits in science, in order to meet the Hanover High School graduation requirements. In addition to Biology, it is strongly recommended that all students pass Chemistry as part of their science requirements. Each science course strives to weave interdisciplinary themes such as global awareness, health literacy and civic literacy, with a strong content-based curriculum. Students use tools of modern technology to develop critical thinking and problem solving skills so they can thrive in a global society.

### 420 BIOLOGY – Advanced Placement

5 credits/year

This course is equivalent to a freshman level course in college and follows the guidelines of the College Board for the Advanced Placement Curriculum. The course will investigate biochemistry, molecular genetics, heredity, evolution, taxonomy, general botany and zoology principles, and ecology. Due to the intensity and the amount of materials that need to be covered, students will be expected to address some material on an individual basis in addition to material discussed in class. Laboratory experiences are an integral part of the course and may include animal dissection. Students may also be required to participate in after-school labs. Summer reading will be required. This course is open to grade 11 and 12 students who have demonstrated a high level of achievement and success in Biology (H) and Chemistry (H) and are recommended by the teacher and their guidance counselor. Students may choose to purchase the textbook in the course at the beginning of the school year so that they may write and take notes in the text. Many students find the text an excellent reference as they enter college. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.

### 421 BIOLOGY – Honors

5 credits/year

This honors course is based upon the study of biological concepts, unifying principles and interrelationships. Living organisms are studied in their unity, including connections to the environment and current biological concerns. The laboratory investigations correlate to the six major units explored during the year: Cells, Genetics, Evolution and Biodiversity, Ecology, Anatomy and Physiology and Biochemistry, and present the students with hands-on and virtual exploration of scientific investigations. The laboratory investigations and class work are designed to provide students with the opportunity to work collaboratively and develop critical thinking, communication and problem solving skills. Outside written research is required including formal laboratory investigations and reports. The honors course is inquiry-based and designed to prepare students for future honors science courses by moving at an accelerated pace, exploring the key concepts in great depth, using mathematical models, and engaging students with independent work where appropriate. This course is designed to prepare students for the Biology MCAS Exam.

### 422 BIOLOGY

5 credits/year

This college preparatory course is based upon the study of biological concepts, unifying principles and interrelationships. Living organisms are studied in their unity, including connections to the environment and current biological concerns. The laboratory investigations correlate to the six major units explored during the year: Cells, Genetics, Evolution and Biodiversity, Ecology, Anatomy and Physiology and Biochemistry, and present the students with hands-on and virtual exploration of scientific investigations. The laboratory investigations and class work provide students with the opportunity to work collaboratively and develop critical thinking, communication and problem solving skills. Outside written research is required including laboratory investigations and reports. This course is designed to prepare students for the Biology MCAS Exam.

### 430 CHEMISTRY – Advanced Placement

5 credits/year

The AP Chemistry course provides students with a college-level foundation to support future advanced coursework in chemistry and is aligned with the College Board AP Chemistry curriculum. Students cultivate their understanding of chemistry through inquiry-based investigations, as they explore topics such as: atomic structure, intermolecular forces and bonding, chemical reactions, kinetics, thermodynamics, and equilibrium. The global impact of chemistry upon our society and the world economy and other associated issues will be discussed to complement the curriculum. According to the College Board, “Students should have successfully completed a general high school chemistry course and Algebra 2.” Students who do not meet this guideline may request permission to enroll in the course from the director. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.

431 CHEMISTRY – Honors 5 credits/year  
Students will communicate and collaborate while performing chemical investigations that complement the various theories/laws embodied in this discipline. Concepts and principles discussed and illustrated through differentiated instruction include scientific measurement, dimensional analysis, properties of matter, the periodic table of the elements, atomic structure, chemical bonding, chemical names and formulas, chemical reactions, chemical quantities, stoichiometry, oxidation and reduction, solutions, and gas laws. The honors course stresses critical thinking and problem solving skills. The global impact of chemistry upon our society and the world economy and other associated issues will be discussed to complement the curriculum. This course will prepare students for taking the MCAS Chemistry exam. For grade 10-11 students who have successfully completed Honors Biology and are concurrently taking Algebra 2.

432 CHEMISTRY 5 credits/year  
This course provides chemical investigations to complement the various theories/laws embodied in this discipline. Concepts and principles discussed and illustrated include scientific measurement, dimensional analysis, properties of matter, the periodic table of the elements, atomic structure, chemical bonding, chemical nomenclature, chemical reactions, chemical quantities, chemical equations, stoichiometry, oxidation/reduction and the gas laws. The global impact of chemistry upon the world economy and associated international relations will be included to complement the curriculum. This course is for grade 10-12 students who have completed Biology and concurrently taking Geometry. A co-taught section of this course is available.

439 PHYSICS C: Mechanics – Advanced Placement 5 credits/year  
Guided by the National Research Council and the National Science Foundation, the College Board AP Program collaborated with college and university educators and AP teachers to develop AP Physics C: Mechanics. This course is a calculus-based, college-level physics course, especially appropriate for students planning to specialize or major in one of the physical sciences or engineering. Students cultivate their understanding of physics through classroom study and activities as well as hands-on laboratory work as they explore concepts like change, force interactions, fields, and conservation. The course covers kinematics; Newton's laws of motion; work, energy, and power; systems of particles and linear momentum; circular motion and rotation; oscillations; and gravitation. Students should have taken or be concurrently taking calculus or an equivalent course. Students may choose to purchase the textbook in the course at the beginning of the school year so that they may write and take notes in the text. Many students find the text an excellent reference as they enter college. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.

440 PHYSICS 2 – Advanced Placement 5 credits/year  
Guided by the National Research Council and the National Science Foundation, the College Board AP Program collaborated with college and university educators and AP teachers to develop AP Physics 2. In this course, students will develop critical thinking and reasoning skills, as defined by the AP Science Practices. Through inquiry-based learning, students will cultivate their understanding of physics and science practices as they explore the following topics: thermodynamics, ideal gases, kinetic theory, fluid statics, fluid dynamics, electrostatics, circuits, magnetism, electromagnetic induction, geometric optics, physical optics, quantum physics, atomic, and nuclear physics. The AP Physics 2 course is a full year course, which should be taken after students have had AP Physics 1. This course is strongly recommended to students who have an interest in physics, engineering, or mathematics and wish to be enrolled in a highly challenging course of study. Students should have taken or be concurrently taking pre-calculus or an equivalent course. Students may choose to purchase the textbook in the course at the beginning of the school year so that they may write and take notes in the text. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.

441 PHYSICS 1 – Advanced Placement 5 credits/year  
Guided by the National Research Council and the National Science Foundation, the College Board AP Program collaborated with college and university educators and AP teachers to develop AP Physics 1. In this course, students will develop critical thinking and reasoning skills, as defined by the AP Science Practices. Through inquiry-based learning, students will cultivate their understanding of physics and science practices as they explore the following topics: kinematics, dynamics, circular motion, harmonic motion, impulse, momentum, collisions, work, energy, rotational motion, circuits, mechanical waves, and sound. The AP Physics 1 course is designed to be taught over the course of a full

academic year and may be taken as a first-year physics course with no prior physics coursework necessary. Students should have taken or be concurrently taking precalculus or an equivalent course. Students may choose to purchase the textbook in the course at the beginning of the school year so that they may write and take notes in the text. Many students find the text an excellent reference as they enter college. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.

442 PHYSICS – Honors

5 credits/year

The curriculum of this course follows the curriculum set forth by the AP College Board for Advanced Placement Physics 1. This course is the equivalent of a first-semester college course in algebra-based physics. The curriculum is taught at a slightly slower pace than the AP Physics 1 class and is covered in a fashion that would enable recommended students to take the AP Physics 2 class for college credit, provided they take both the AP Physics 1 and AP Physics 2 exams. Any material not covered in the Honors Physics class would be required summer work for students wishing to take the AP Physics 2 class. Honors Physics primarily covers Newtonian mechanics including rotational dynamics and angular momentum; work, energy, and power; mechanical waves and sound. A full laboratory program is an integral part of the course. Students should have taken or be concurrently taking pre-calculus or an equivalent course.

443 PHYSICS – Conceptual

5 credits/year

This college preparatory physics course teaches physics concepts without the need for advanced mathematics. This course makes use of a three stage learning cycle of exploration, concept development, and concept application. Principles of force, motion, energy, electricity, magnetism, waves, vibrations, and light are developed and applied through reading assignments, lessons, demonstrations, laboratory work, computer simulations, problem solving, critical thinking and discussions. Real work applications of physics principles will be explored. This course is for those students who have an understanding of algebra and geometry and are seeking acceptance to a standard 2-4 year college.

450 ENVIRONMENTAL SCIENCE – Advanced Placement

5 credits/year

The Advanced Placement Environmental Science course is designed to be the equivalent of an introductory Environmental Science course at the college level and follows the guidelines of the College Board for the Advanced Placement Curriculum. The goal of the Advanced Placement Environmental Science course is to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems, both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving and/or preventing them. AP Environmental Science has a significant laboratory and field investigation component. Experiences both in the laboratory and in the field provide students with important opportunities to test concepts and principles that are introduced in the classroom, to explore specific problems with a depth not easily achieved otherwise, and to gain an awareness of the importance of confounding variables that exist in the “real world.” This course is open to grade 11 and 12 students who have demonstrated achievement and success in Biology and Chemistry and are recommended by a science teacher. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.

449 ENVIRONMENTAL SCIENCE – Honors

5 credits/year

452 ENVIRONMENTAL SCIENCE

This lab-based course will teach the scientific principles, concepts and methodologies required to understand the relationship between human beings, their natural environment, and the Earth’s dynamic forces. Students will identify and analyze environmental problems both natural and human-made and evaluate the relative risks associated with these problems by examining alternative solutions for resolving and/or preventing them. Technology will be used in the classroom and other resource areas assisting the student in understanding a more complete picture of the Earth’s dynamic forces and the effects they will have on people and the environment.

468 MARINE SCIENCE

5 credits/year

468D MARINE SCIENCE – Dual Enrollment Quincy College

This course is designed for students in grades 11 and 12 with an interest in marine biology and oceanography. This course provides an excellent background for students who are interested in further study of the oceans and the organisms that inhabit it. Major concepts include the study of interrelationships of marine and terrestrial environments, the geology and geography of the oceans, marine organisms, and the ecology of coral reefs. Laboratory activities, including the examination of marine specimens are used throughout this course to build upon student knowledge. Labs, modeling,

research, and projects will be used to explore these topics. There will be 2 trips to the coast to see first hand organisms in their environment as well as real life interactions with what we are learning in class. Major topics integrated throughout the course include: marine biology, marine geology, physical oceanography, chemical oceanography, research techniques, and environmental impacts.

471 ANATOMY AND PHYSIOLOGY – Honors 5 credits/year

471D ANATOMY AND PHYSIOLOGY – Honors – Dual Enrollment Quincy College

This elective course will explore the major human organ systems: integumentary, skeletal, muscular, nervous, cardiovascular, respiratory, digestive, and endocrine. The focus of the course will be on students learning how these systems interact to maintain homeostasis. An examination of the current medical issues will be covered through general course work, collaborative laboratory investigations, independent research projects, and presentations. This course is designed for students planning on pursuing a career in the healthcare sciences, including nursing, pharmacology, sports medicine and biotechnology. This course is for self-motivated students that have satisfactorily completed honors biology and chemistry. Laboratory investigations will provide real-world experiences for students, including dissections and biotechnology activities related to the pharmaceutical industry.

478 HEALTH CARE OCCUPATIONS 2.5 credits/year

The Health Science Careers course will cover health and science topics for the student who would like to learn about health careers. Students will learn about human development across the lifespan, disease processes/prevention, health assessment, first aid and more. The course will feature speakers from various health professions. Students will practice standardized test-taking skills and skills that support success in their science classes.

927 SCIENCE LAB AIDE 2.5 credits/year

The Science Lab Aide Program provides an opportunity for students to partner with a science teacher and his/her students in order to provide a mutually valuable learning experience for all involved. As Science Lab Aide, student aides will work with a science teacher at the designated time and may serve in one or more of the following capacities: mentor, one-on-one or small group tutor, teacher assistant. Student aides typically work with the same teacher, class, and/or student(s) to establish a consistent partnership. This course is graded as Pass/Fail and satisfies the one-year community service requirement for Hanover High School students.

484 ENGINEERING 1: TECHNICAL DRAWING AND DESIGN 2.5 credits/year

This course involves an introductory experience in technical drawing as a tool of technical communication. Primary emphases are on development of basic drafting skills, visualization and solving graphical problems. Students will explore architectural concepts as well as mechanical drawings. This course will also introduce students to the engineering design process, and explore multiple topics in the world of engineering, including electronics, manufacturing, and physical computing. This course is open to all students.

485 ENGINEERING 2: DESIGN AND FABRICATION 2.5 credits/year

Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration, and presentation. Students will also develop fabrication skills including woodworking, electronics, welding, CNC machining, and additive manufacturing. This course is open to all students.

486: ENGINEERING 3: 3D MODELING AND PROTOTYPING 5 credits/year

Through the use of Autodesk Inventor students will get an in-depth study of three dimensional modeling and component creation. Students will be expected to solve problems through the modeling and production of proof-of-concept prototypes. Additional topics include CNC programming, 3D printing, and advanced fabrication. This course is open to students in grades 11 and 12.

489 ENGINEERING 4: ENGINEERING CAPSTONE – Honors 5 credits/year

This course is designed for students to create independent projects to further develop skills and experience in particular areas of interest. All project proposals must be approved by the instructor. Student proposals may be from any field of



previous study in engineering and reflect an appropriate complexity and level of difficulty. This capstone course is open to students in grades 11 and 12 who have completed at least 2 courses in engineering.

492      ROBOTICS

2.5 credits/year

This course is for students with an interest in robotics and computer programming. Students will apply the engineering design process and improve their computational thinking skills as they work collaboratively to design, construct, and write code to control their robots. Students will design autonomous robots that they will build and program using C to complete specific tasks for various challenges. The course is aligned to Next Generation Science and Common Core math standards. Students may have the option to compete in robotics competitions. For grades 11-12 students.

WORLD LANGUAGES COURSES

Course No.	Title	Level	Credits	Grades
501	French 1	CP	5.0	9
504	French 2 – Honors	H	5.0	9, 10
503	French 2	CP	5.0	9, 10
506	French 3 – Honors	H	5.0	10
505	French 3	CP	5.0	10, 11
508	French 4 – Honors	H	5.0	10, 11
507	French 4	CP	5.0	11
509	French 5 – Honors	H	5.0	12
510	French 5 – Advanced Placement	AP	5.0	12
511	Spanish 1	CP	5.0	9
514	Spanish 2 – Honors	H	5.0	9
513	Spanish 2	CP	5.0	9, 10
516	Spanish 3 – Honors	H	5.0	10
515	Spanish 3	CP	5.0	10, 11
518	Spanish 4 – Honors	H	5.0	11
517	Spanish 4	CP	5.0	11, 12
519	Spanish 5 – Honors	H	5.0	12
520	Spanish 5 – Advanced Placement	AP	5.0	12

## WORLD LANGUAGES

Our Core Values and Beliefs statement makes clear that the, “Hanover High School community provides a competitive and challenging curriculum specific to individual educational needs.” The World Language department actuates this mission through its academic curriculum and instruction in French and Spanish. Intricately woven into world language classes are global and cultural awareness, along with literacy in the written and spoken word. Literacy in financial, economic, civic, health, and historical aspects are also taught through the World Languages curricula. Research demonstrates that world language study improves MCAS and SAT verbal and achievement test scores in both English and Mathematics. French is essential for business entrepreneurs dealing with European Union countries, and Spanish will be spoken by 50% of the U.S. population by the year 2030. Through the study of interdisciplinary themes, students make connections to other disciplines, compare their own culture to others around the world, and develop proficiency in the four areas of communication, reading, writing, speaking, and listening. The 2021 MA Curriculum Frameworks endorse a threshold by which both teachers and students engage in the target language 90% of the time. Our world language classes strive to meet that 90% threshold. In order to realize the greatest benefit from world language courses, students are expected to actively participate in all classes and use the target language both in and out of class.

All students are required to take two years of world language at the high school. Many colleges and universities presently require successful completion of three years of the same language. Completion of a fourth and fifth year is desirable for admission to the more selective colleges and universities.

### FRENCH

#### 501 FRENCH 1

5 credits/year

French 1 is the foundational course in a 4-year program that focuses on developing proficiency in reading, writing, speaking, and listening. Vocabulary and grammar are studied while considering the customs, traditions and lifestyles of the French-speaking world. Students are encouraged to take an active role in paired activities and group work as well as oral and written presentations. Students are required to do work outside of the classroom in order to master vocabulary and grammar concepts.

#### 504 FRENCH 2 – Honors

5 credits/year

This course is designed for students who have mastered the foundational concepts presented in French One and who are highly motivated to communicate in French. Students are exposed to additional language structures and vocabulary through the textbook as well as authentic resources such as audio and video selections, short readings, blogs, infographics, online articles, etc. Through this exposure, students will work toward improving their speaking, listening, reading, and writing skills. Students can expect to engage in classroom discussions, paired assignments where the focus is on interacting in French, reading multi-paragraph length texts, and writing with accuracy to convey meaning. There is an emphasis placed on moving from one proficiency level to the next in all domains. At this level, students' receptive language is strengthening and they are beginning to produce spoken and written language on their own. This course is increasingly taught in French with English used for clarification. Students are expected to actively work toward the 90% target language use threshold.

#### 503 FRENCH 2

5 credits/year

This course is designed to strengthen the concepts learned in French One, while adding new grammatical concepts and vocabulary. Students are exposed to additional language structures and vocabulary through the textbook as well as authentic resources such as audio and video selections, short readings, blogs, infographics, etc. Through this exposure, students will begin to become more comfortable with their speaking, listening, reading, and writing skills. Students can expect to answer questions in class in French, with complete reading activities along with other assignments that engage the use of the target language. The goal of this course is to increase the amount of French used during instruction and for students to move from one proficiency level to the next in all domains. Students are encouraged to take an active role in class and are required to do work outside of class in order to strengthen their knowledge and skills.

#### 506 FRENCH 3 – Honors

5 credits/year

This course is designed for students who have mastered the structural and thematic concepts presented in French 2 Honors and who continue to be highly motivated to communicate in French. Students are exposed to higher-order

language structures and vocabulary through the textbook as well as through authentic resources such as news articles, excerpts from literature, video clips, film, audio files, and online resources. Through this exposure, students will strive to improve their reading, writing, listening, and speaking skills in French. Students can expect to engage in short conversations in French with partners and in groups to do performance assessments, read and write higher-level stories and essays in order to progress to the next level of language proficiency. By the end of the year, the student should have stronger receptive and productive language skills. Through the study of French, students will also gain cultural competence as well as diverse perspectives and will make connections to their lives and to other disciplines. This course is taught increasingly in French. English may be used for clarification. Students are expected to actively work toward the 90% target language use threshold.

505 FRENCH 3

5 credits/year

This course is designed to strengthen the concepts learned in French 1 & 2 while adding new grammatical concepts and vocabulary. Students are exposed to increasingly more complex language structures and vocabulary through the textbook as well as authentic resources such as audio and video selections, short readings, blogs, infographics, etc. Through this exposure students are expected to increase their comfort level with their speaking, listening, reading, and writing skills. Students can expect to answer questions in class in the target language, complete reading activities, perform writing tasks, and complete other assignments that engage the use of the target language. The goal of this course is to increase the amount of French used during instruction and for students to continue to advance in their proficiency level. Students are encouraged to take an active role in class and are required to do work outside of class in order to strengthen their knowledge and skills.

508 FRENCH 4 – Honors

5 credits/year

This course is conducted in French. Students will become more proficient in the areas of reading, writing, speaking, and listening. They will sharpen their listening comprehension skills through exposure to native speaker audio texts. Special emphasis will be given to developing interpersonal, interpretive, and presentational writing and speaking skills. Students will also better understand cultural similarities and differences through exposure to literature, poetry, art, and music or throughout our class discussions relating to specific class themes. Students will be introduced to the six themes of the AP French Language and Culture course.

507 FRENCH 4

5 credits/year

This course is designed to strengthen the concepts learned in French 3, while adding some new vocabulary and grammar. Students will be scaffolding on their prior knowledge of the target language while expanding their communication and comprehension. This course will also help students to better understand cultural similarities and differences through exposure to literature, films, music, audio excerpts, news articles, videos, webquests, research projects, and various realia. There is an emphasis on collaborative work in order to gain cultural competence, recognize diverse perspectives, and make connections between their lives and those of the youth of the Francophone world.

509 FRENCH 5 - Honors

5 credits/year

This course is conducted in French. Students should expect to be actively involved in their own learning while working toward proficiency in the areas of reading, writing, speaking, and listening. Literature, poetry, art, music, and film all serve as strategic vehicles to total-language competency. Critical thinking skills are enhanced in the target language through cooperative and collaborative activities. Authentic aural activities are integrated into the course via podcasts or short videos. This course will cover some of the French AP themes but will focus more on in-depth political, cultural, and historical aspects of the Francophone world. Students are expected to be motivated to increase their proficiency level and be willing to actively participate in class discussions on a daily basis. Students are required to regularly do work outside of class in order to fully access the curriculum.

510 FRENCH 5 – Advanced Placement

5 credits/year

This course is a college-level course conducted completely in French. Proficiency is enhanced through the study of advanced grammar, culture, vocabulary, and poetry. Literature, current events, and films serve as avenues for discussion and written assignments. Current events are studied from various Francophone countries, enhancing global awareness and civic literacy. This class will place special focus on the four major skills evaluated on the AP Exam – speaking, reading, listening, and writing. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.

## SPANISH

### 511 SPANISH 1

5 credits/year

Spanish 1 is the foundational course in a 4-year program that focuses on developing proficiency in reading, writing, speaking, and listening. Vocabulary and grammar are studied while considering the customs, traditions, and lifestyles of the Spanish-speaking world. Students are encouraged to take an active role in paired activities and group work as well as oral and written presentations. Students are required to do work outside of the classroom in order to master vocabulary and grammar concepts.

### 514 SPANISH 2 – Honors

5 credits/year

This course is designed for students who have mastered the foundational concepts presented in Spanish One and who are highly motivated to communicate in the target language. Students are exposed to additional language structures and vocabulary through the textbook as well as authentic resources such as audio and video selections, short readings, blogs, infographics, online articles, etc. Through this exposure, students will work toward improving their speaking, listening, reading, and writing skills. Students can expect to engage in classroom discussions, paired assignments where the focus is on interacting in the target language, reading multi-paragraph length texts, and writing with accuracy to convey meaning. There is an emphasis placed on moving from one proficiency level to the next. At this level, students' receptive language is strengthening and they are beginning to produce spoken and written language on their own. This course is increasingly taught in Spanish with English used for clarification. Students are expected to actively work toward the 90% target language use threshold.

### 513 SPANISH 2

5 credits/year

This course is designed to strengthen the concepts learned in Spanish One, while adding new grammatical concepts and vocabulary. Students are exposed to additional language structures and vocabulary through the textbook as well as authentic resources such as audio and video selections, short readings, blogs, infographics, etc. Through this exposure, students will begin to become more comfortable with their speaking, listening, reading, and writing skills. Students can expect to answer questions in class in the target language, along with complete reading activities, and other assignments that engage the use of the target language. The goal of this course is to increase the amount of Spanish used during instruction and for students to move from one proficiency level to the next. Students are encouraged to take an active role in class and are required to do work outside of class in order to strengthen their knowledge and skills.

### 516 SPANISH 3 – Honors

5 credits/year

This course is designed for students who have mastered the structural and thematic concepts presented in Spanish 2 Honors and who continue to be highly motivated to communicate in Spanish. Students are exposed to higher-order language structures and vocabulary through the textbook as well as through authentic resources such as news articles, excerpts from literature, video clips, film, audio files and on-line resources. Through this exposure, students will strive to improve their reading, writing, listening and speaking skills in Spanish. Students can expect to engage in short conversations in Spanish, work in partners and groups to do performance assessments, read and write higher-level stories and essays in order to progress to the next level of language proficiency. By the end of the year, the student should have stronger receptive and productive language skills. Through the study of Spanish, students will also gain cultural competence, learn to appreciate diverse perspectives, make connections to their lives and make connections to other disciplines. This course is increasingly taught in Spanish with English used for clarification. Students are expected to actively work toward the 90% target language use threshold.

### 515 SPANISH 3

5 credits/year

This course is designed to strengthen the concepts learned in levels one and two, while adding new grammatical concepts and vocabulary. Students are exposed to increasingly more complex language structures and vocabulary through the textbook as well as authentic resources such as audio and video selections, short readings, blogs, infographics, etc. Through this exposure students are expected to increase their comfort level with their speaking, listening, reading and writing skills. Students can expect to answer questions in class in the target language, complete reading activities, perform writing tasks and complete other assignments that engage the use of the target language. The goal of this course is to increase the amount of Spanish used during instruction and for students to continue to advance in their proficiency level. Students are encouraged to take an active role in class and are required to do work outside of class in order to strengthen their knowledge and skills.

## 518 SPANISH 4 – Honors

5 credits/year

Spanish 4H is a Latin America and Hispanic Studies survey course, covering the history, culture and literature of Spain, the Caribbean, Central and South America. This course is conducted in Spanish and is designed to integrate all previously-acquired language skills, while promoting initiative and self-direction. Students will perfect their oral proficiency in communication and collaboration in the target language while simultaneously sharpening their reading, writing, and grammatical skills. Students will sharpen their listening comprehension skills through exposure to native speaker audio texts. Special emphasis will be given to developing interpersonal, interpretive and presentational writing and speaking skills. Cultural knowledge will be brought alive through literature, poetry, art and music and will also be intertwined throughout the year with other class themes utilizing authentic sources both written and aural. Students will also be introduced to the six course themes of the AP Spanish Language and Culture class. Students will also explore opportunities for outreach into the community and/or engage in cultural exchanges.

## 517 SPANISH 4

5 credits/year

This course is designed to strengthen the concepts learned in Spanish 3, while adding some new vocabulary and grammar. Students will be scaffolding on their prior knowledge of the target language while expanding their communication and comprehension. This course will also help students to better understand cultural similarities and differences through exposure to literature, films, music, audio excerpts, videos, webquests, research projects, and various realia. There is an emphasis on collaborative work in order to gain cultural competence, recognize diverse perspectives and make connections between their lives and those of the youth of the Hispanic world. Students are encouraged to take an active role in class and are required to do work outside of class in order to strengthen their knowledge and skills.

## 519 SPANISH 5 – Honors

5 credits/year

This course is conducted primarily in Spanish. Students should expect to be actively involved in their own learning while working toward proficiency in the areas of reading, writing, speaking and listening. The course pursues an in-depth analysis of Iberian and Latin American political, cultural, and historical topics. Literature, poetry, art, music, and film all serve as strategic vehicles to total-language competency. Critical thinking skills are enhanced in the target language through cooperative and collaborative activities. Authentic aural activities are integrated in the course via podcasts or short videos. Streaming Internet services and other audio and visual sources will be implemented whenever possible. The course explores topical news stories through the lens of the Latin American experience by considering authentic latin news sources. As such, it requires reading and listening at an advanced level. Students are expected to be self directed, motivated to increase their proficiency level and be willing to actively participate in class discussions on a daily basis. Students are required to regularly do work outside of class in order to fully access the curriculum.

## 520 SPANISH 5 – Advanced Placement

5 credits/year

This course is conducted solely in Spanish. Proficiency is enhanced through the study of advanced grammar, culture, vocabulary, poetry, film, expository assignments, and extensive oral practices. This class will place special emphasis on the four major skills evaluated on the AP exam – speaking, reading, listening, and writing. The understanding and appreciation of Hispanic culture is enhanced through the study of history, customs and culture of various Hispanic nations. Authentic aural activities are integrated in the course via podcasts and streaming radio newscasts via the Internet. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.

**BUSINESS AND INFORMATION TECHNOLOGY COURSES**

<b>Course No.</b>	<b>Title</b>	<b>Level</b>	<b>Credits</b>	<b>Grades</b>
602	Accounting 1	CP	5.0	9, 10, 11, 12
601	Accounting 2 – Honors	H	5.0	10, 11, 12
607	Internship 1	CP	5.0	11, 12
609	Internship 2	CP	5.0	12
617	Marketing and Management	CP	5.0	10, 11, 12
661	Video Production 1	CP	5.0	11, 12
662	Video Production 2 – Honors	H	5.0	12
665	Digital Media	CP	2.5	10, 11, 12
370	Computer Science Principles – Advanced Placement	AP	5.0	10, 11, 12
372	Computer Science A – Advanced Placement	AP	5.0	11, 12
374	Introduction to Computer Science	CP	2.5	9, 10, 11, 12
376	Web Application Development – Honors	H	5.0	10, 11, 12

## BUSINESS AND INFORMATION TECHNOLOGY

Business education programs provide opportunities for relevant, real-world, engaging learning experiences, often using a project-based approach. Such experiences reinforce high academic standards and provide authentic contexts in which students can apply what they learn.

The Business Technology Program at Hanover High School offers a variety of business and computer courses to enrich students' high school experiences, introduce students to the exciting world of Business, and allow students to develop the knowledge and skills needed in our ever-changing society. The Business Technology curriculum allows students to investigate business and technology in depth and will give them a strong background for future use in college, career, and life.

602 ACCOUNTING 1 5 credits/year

602D ACCOUNTING 1 – Dual Enrollment Quincy College

Through independent and collaborative problem solving, and the use of technology, students will develop the knowledge and skills needed to create, maintain, and interpret the financial records of a business, whether as employee or entrepreneur. Students will also develop vital personal financial skills, including budgeting, banking, borrowing, and investing, to foster financially sound decision-making in the future. Real-world, business-related topics, such as ethics, are incorporated into the course to help students develop an understanding of issues existing in today's economy. This course is offered as an optional Dual Enrollment course through Quincy College for students in grades 9-12.

601 ACCOUNTING 2 – Honors 5 credits/year

601D ACCOUNTING 2 – Honors – Dual Enrollment Quincy College

Following a review of Accounting 1, students will master advanced practices and principles of Accounting, including financial statement preparation and analysis, adjustments, inventory valuation, fixed assets and depreciation, receivables and liabilities, and stocks. Students will work independently and collaboratively to solve complex, college-level Accounting problems. Spreadsheet software will be used in problem solving. Additional business topics are included in the course to help students develop an understanding of issues existing in the economy, and to enhance their ability to make sound business decisions. This course is offered as an optional Dual Enrollment course through Quincy College for students in grades 10-12.

607 INTERNSHIP 1 5 credits/year

609 INTERNSHIP 2

Internships provide students with hands-on experiences at real worksites to help them develop an understanding of professions that interest them before they enter college or the job market. Interns develop valuable personal and professional skills and are given the opportunity to network and develop professional relationships in their chosen career field. Today, many employers and colleges seek students who have acquired hands-on work experiences beyond the classroom. During the first semester, students will attend class where topics covered include Career Development and Research, Aptitude Testing, Resumé Writing, Interviewing Techniques, and Professional Development. Upon completion of the first semester requirements, students will intern at a business or organization, which will allow them to explore a career that matches their interest in a future profession. The Site Mentor and the Internship Coordinator will assess students based on six workplace competencies established by the Massachusetts Department of Education and through weekly journal entries. The program requires that students attend school for six periods a day while interning a minimum of four hours per week. Student interns must be responsible, reliable, independent, self-motivated learners. The Internship Coordinator reserves the right to determine if each student will be sent to an Internship Site. For grade 11-12 students.

617 MARKETING & MANAGEMENT 5 credits/year

This real-world elective allows students to work independently and in teams on a variety of project-based activities. The course begins with a comprehensive overview of marketing, including functions of marketing, market segmentation and target marketing, basic economics, the global economy, market research, promotion, advertising, selling, social responsibility, and the impacts and criticisms of marketing in society. Students will develop an understanding of the role marketing plays in their everyday lives. The course then examines the responsibilities of owning, operating and managing a business. Topics include the evolution of management, entrepreneurship, business law, and ethics. Students



will work to develop the professional skills needed for effective leadership, including planning, organizing, decision-making and communication.

661 VIDEO PRODUCTION 1 – Honors

5 credits/year

In this course students will be introduced to communications using audio and visual media. Students will explore the video production process; this includes planning, storyboarding, directing, as well as filming and editing of both fictional and non-fictional video pieces. Students will begin to build visual literacy skills that will help them communicate their ideas through media projects incorporating production deadlines, equipment care, filming techniques and creative problem solving. This course offers an authentic learning experience where students will be required to stretch themselves through collaboration, critical thinking, personal productivity, self-direction and accountability. Work outside of class is required. Applications used include: Photoshop, GarageBand, PowerPoint, iMovie, and Final Cut. This course is open to students with a teacher recommendation in grades 11 and 12 who have successfully completed Digital Media.

662 VIDEO PRODUCTION 2 – Honors

5 credits/year

This is a capstone project-based course in which students are expected to build upon all the skills and techniques learned in Video Production. Students will be expected to strive for excellence in the video production process; including planning, storyboarding, directing, as well as filming and editing of both fictional and non-fictional video pieces. Students will employ and refine their visual literacy skills to communicate their ideas through media projects incorporating production deadlines, equipment care, filming techniques and creative problem solving. This course offers an authentic learning experience where students will be required to stretch themselves through collaboration, critical thinking, personal productivity, self-direction and accountability. Work outside of class is required. This course is only open to teacher-recommended, grade 12 students that have successfully completed Video Production 1.

665 DIGITAL MEDIA

2.5 credits/year

This computer technology course introduces a variety of applications focused on communicating effectively in the current digital marketplace. Students will learn the significance of the changing role of technology through interactive presentations, web-based projects, and graphic design. In addition, students will explore the video production process. Applications used include: Photoshop, Illustrator, Flash, PowerPoint, and Final Cut. This course is for grade 10-12 students.

370 COMPUTER SCIENCE PRINCIPLES – Advanced Placement

5 credits/year

The AP Computer Science Principles course is designed to be equivalent to a first-semester introductory college computing course. In this course, students will develop computational thinking vital for success across all disciplines, such as using computational tools to analyze and study data and working with large data sets to analyze, visualize, and draw conclusions from trends. The course is unique in its focus on fostering student creativity. Students are encouraged to apply creative processes when developing computational artifacts and to think creatively while using computer software and other technology to explore questions that interest them. They will also develop effective communication and collaboration skills, working individually and collaboratively to solve problems, and discussing and writing about the importance of these problems and the impacts to their community, society, and the world. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.

372 COMPUTER SCIENCE A – Advanced Placement

5 credits/year

AP Computer Science A is equivalent to a first-semester, college level course in computer science. The course introduces students to computer science with fundamental topics that include problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing. The course emphasizes both object-oriented and imperative problem solving and design using the Java programming language. These techniques represent proven approaches for developing solutions that can scale up from small, simple problems to large, complex problems. The AP Computer Science A curriculum is compatible with many first year computer science courses in colleges and universities. Any student who enrolls in an AP course is required to take the AP exam in May of the school year.

374 INTRODUCTION TO COMPUTER SCIENCE

2.5 credits/year

This course is for students interested in exploring some of the many facets of computer science. The course consists of three main topics: Web Design, Programming in Python, and Scripting in Google Apps. In Web Design, students will learn to design and code websites using a combination of HyperText Markup Language (HTML) and Cascading Style Sheets (CSS). In Programming with Python, students will learn basic programming concepts such as functions, loops, variables, strings, comments, logical operators, and decision structures and apply their knowledge to create a variety of programs and games using Python. In Scripting in Google Apps, students will learn how to use Google Forms and Sheets to store data that can then be managed and manipulated using Google Apps Scripts.

376 WEB APPLICATION DEVELOPMENT – Honors

5 credits/year

Students will continue to study fundamental concepts of computer science and programming and apply them to web and mobile applications. Topics include algorithms, debugging, object-oriented programming, and security. Students will learn about persisting information in files and databases. A working knowledge of the concepts in Introduction to Computer Science Principles is required to master the material.

*Guideline:* The most successful students have earned a B or better in a prior computer science course.

## ART COURSES

Course No.	Title	Level	Credits	Grades
700	Drawing – Every Other Day	CP	2.5	9, 10, 11, 12
701	Drawing – Every Day	CO	5.0	9, 10, 11, 12
703	Drawing – Honors	H	5.0	10, 11, 12
704	2D Art and Design – Advanced Placement	AP	5.0	10, 11, 12
705	Painting – Every Other Day	CP	2.5	9, 10, 11, 12
706	Painting – Every Day	CP	5.0	9, 10, 11, 12
707	Painting – Honors	H	5.0	10, 11, 12
709	The Art of Kindness	CP	5.0	9, 10, 11, 12
723	3D Art: Ceramics 1	CP	2.5	9, 10, 11, 12
724	3D Art: Ceramics 2	CP	5.0	10, 11, 12
726	3D Art: Ceramics 3	CP	5,0	11, 12
728	3D Art and Design – Advanced Placement	AP	5.0	12
729	Partnership in Art	CP	2.5	9, 10, 11, 12

## ART

700 DRAWING – Every Other Day

2.5 credits/year

701 DRAWING – Every Day

5 credits/year

This course explores a general survey of the art of drawing. Emphasis is placed on the development of drawing skills, using a variety of media. Students will develop techniques and personal styles through observation, imagination, and experimentation. The course can be taken each year, or students can advance to Honors Drawing upon instructor recommendation.

703 DRAWING – Honors

5 credits/year

This course provides motivated students the chance to employ and study advanced drawing skills. Emphasis will be placed on developing a portfolio leading toward meeting the requirement of AP Drawing. Critique format, creativity, and critical thinking are stressed as major components of this course. Students will assume responsibility for self-assessment as well as collaborative assessments. This course is for grade 10-12 students with Art 1 and teacher recommendation.

704 2D ART & DESIGN – Advanced Placement

5 credits/year

This Advanced Placement course gives highly motivated students the opportunity to pursue a college level drawing course while still in high school. Expertise in a variety of media (breadth), a commitment to a particular visual concern or idea (concentration), and a development of the sense of excellence (quality) will be stressed. This course offers the striving art student the opportunity to develop a strong portfolio by participating in a college level art course. Emphasis on color and design through the use of line, shape, spatial illusion, motion, pattern, texture and value will be stressed. Innovation is stressed as a component of self-expression as well as leadership within the arts community. This course is for grade 11-12 students with teacher recommendation. Any student who enrolls in this course is required to submit an AP portfolio in May.

705 PAINTING – Every Other Day

2.5 credits/year

706 PAINTING – Every Day

5 credits/year

This course emphasizes painting technique, material-use, and related design considerations. The course also examines painting procedures and content. Students will explore representational and abstract imagery using a wide variety of painting media. They will also be expected to fully explore their personal style and to experiment with other modes of painted expression. The course can be taken each year, or students can advance to Honors Painting upon instructor recommendation.

707 PAINTING – Honors

5 credits/year

This course provides motivated students the chance to employ and study advanced painting skills. Emphasis will be placed on developing a portfolio leading toward meeting the requirement of the Advanced Placement course. Critique format, creativity, and critical thinking are stressed as major components of this course. Students will assume responsibility for self-assessment as well as collaborative assessments. This course is for grade 10-12 students with teacher recommendation.

709 THE ART OF KINDNESS

2.5 credits/year

This class will explore the power of art to create and strengthen bonds to enhance connectedness and empathy with local and global communities, as well as the natural world. Through collaborative art projects with cooperating organizations and businesses, such as: Department of Social Services, The Memory Project, local long-term care facilities, hospitals, animal shelters, etc. The students will design and create artwork, as a gift, intended to promote peace and healing. Issues of personal identity, gender, racial equity, and diversity, will be explored in relation to the role of art and the artist in society as an agent of change to promote and encourage positive social outcomes.



## MUSIC COURSES

Course No.	Title	Level	Credits	Grades
760	Instrument Workshop	CP	2.5	9, 10, 11, 12
761	Symphonic Band	CP	5.0	9
762	Symphonic Band – Honors	H	5.0	10, 11, 12
763	Jazz Lab – Honors	H	2.5	9, 10, 11, 12
750	Concert Chorus	CP	5.0	9, 10, 11, 12
751	Concert Chorus – Honors	H	5.0	9, 10, 11, 12
752	Select Chorus (VOX) – Honors	H	5.0	10, 11, 12
753	Chorus Every Other Day	CP	2.5	9, 10, 11, 12
765	Guitar 1	CP	2.5	9, 10, 11, 12
766	Guitar 2	CP	2.5	10, 11, 12
767	Guitar 3	CP	2.5	11, 12
770	American Contemporary Music	CP	2.5	9, 10, 11, 12
771	Songwriting	CP	2.5	9, 10, 11, 12
772	Sound Recording and Production	CP	2.5	9, 10, 11, 12
773	Music in Film and Media	CP	2.5	9, 10, 11, 12
774	Partnership in Music	CP	2.5	9, 10, 11, 12
775	Music Theory – Advanced Placement	AP	5.0	10, 11, 12
781	Piano 1	CP	2.5	9, 10, 11, 12
782	Piano 2	CP	2.5	10, 11, 12
783	Piano 3	CP	2.5	11, 12

## MUSIC

The HHS Music Department is committed to providing a comprehensive, sequential, and collaborative program that offers a variety of performing ensembles and non-performance oriented classes designed to meet the needs of all students at Hanover High School. As a result, the performance-based classes participate in many activities throughout the year. These include three to four concerts per year. Ensembles also may participate in the following organizations, performances, and music festivals: the Massachusetts Instrumental and Choral Conductors' Association (MICCA) Music Festival, Bridgewater State University High School Honor Band, University of Massachusetts High School Honor Band, MMEA All-State Festival Band and Chorus, MMEA Southeast District Junior and Senior Festival, Southeastern Massachusetts School Bandmasters Association (SEMSBA) Junior and Senior Festival, Massachusetts Association of Jazz Educators (MAJE) Festival, the UMass Band Day and local parades and community performances such as the Hanover Halloween Parade, Town Tree Lighting, Holiday Caroling, Memorial Day Parade, annual Swing Dance, and Hanover Day. The music department also participates in out-of-state performance tours for the performing ensembles on an every-other year rotation. If you have any questions about these courses, please speak with the department teachers.

### PERFORMING ENSEMBLES

#### 760 INSTRUMENT WORKSHOP

2.5 credits/year

This instrumental class is for any students interested in learning a wind or percussion instrument or for students intending to major in music education. Students may choose to focus on the flute, clarinet, saxophone, trumpet, french horn, trombone, baritone, tuba, and percussion. The focus will be reading basic music notation, building individual technique, developing ensemble skills such as tuning and listening, and performing individually and with others. This is the perfect course for a student who previously played an instrument and wants to return or a band student who wants to learn a double or new instrument. Students planning on majoring in Music Education or Performance are also encouraged to take this course. No previous experience required. Students will be required to rent or bring their own instruments. Some school-owned equipment may be available as well.

#### 761 SYMPHONIC BAND

5 credits/year

Symphonic Band is the centerpiece of the instrumental music department and is open to all wind and percussion instrumental students in grades 9-12. The Symphonic Band begins as the Pride of Hanover Marching Band in the Fall. Students will develop technique and musicianship through performance of quality literature from a variety of genres, styles, and historical periods. Students are expected to prepare for performances and rehearsals through individual practice and sectional rehearsals. Students are encouraged but not required to take private lessons on their instrument. Performing experiences include the Holiday Pops concert, MICCA Festival, Spring Pops, and a variety of community events. Throughout the duration of the course, the students will develop collaborative skills, creativity and innovation, life skills in leadership, ethics, accountability, adaptability, personal responsibility, productivity, social development, self-direction and responsibility. Previous instrumental music experience is recommended. students in grades 9-12 students who do not desire honors credit.

#### 762 SYMPHONIC BAND – H

5 credits/year

To receive honors credit in instrumental performance, students will meet all obligations of Symphonic Band (see course description above). Additionally, students will be required to audition for SEMMEA or SEMSBA, study privately, and assume a leadership role (drum major, section leader, librarian, public relations, uniform manager). This course is for grade 9-12 students with teacher recommendation.

763 JAZZ LAB - H

2.5 credits/year

The Jazz Lab course is a multifaceted course designed for students who wish to learn to play and improvise in the Jazz idiom and who are interested in learning about the history of Jazz Music. Members will begin to learn elements of Jazz theory, improvisation, and interpretation involving chords, scales, patterns, and stylistic considerations, and will perform in both big band and small-combo settings. Wind players must also be enrolled in the Symphonic Band. Guitar, bass, drum, and piano students are not required to be enrolled. All students will increase their global awareness through the study of music from other nations and cultures resulting in mutual respect for diverse societies and customs. Through the duration of the course, the students will develop skills in collaboration, creativity and innovation, life skills in leadership, ethics, accountability, adaptability, personal responsibility, personal productivity, people skills, self-direction, and social responsibility. This course is for grade 9-12 students with teacher recommendation.

750 CONCERT CHORUS

5 credits/year

Concert Chorus is a mixed-voice (male and female) ensemble, open to all students in grades 9-12 who want to sing in a positive, welcoming environment. The primary focus of the class is to help students gain confidence in the use of their own voice. Through this daily practice, students will gain confidence in basic musicianship skills, such as the ability to read music, listen to and analyze music; as well as learning to sing collaboratively and expressively with others. Through the study of a wide variety of choral literature, students will increase their global awareness through the study of music from other nations and cultures resulting in a mutual respect for diverse societies and customs. Additionally, students will study and sing several genres of music, including contemporary music of the student's choice. Through the duration of the course, students will develop skills in collaboration, creativity and innovation, life skills in leadership, ethics, accountability, adaptability, personal responsibility, people skills, self-direction, and social responsibility.

751 CONCERT CHORUS – Honors

5 credits/year

To receive honors credit in choral performance, students will meet all obligations of Concert Chorus. Additionally, students will be required to audition for SEMMEA or SEMSBA, study privately, and/or assume a leadership role (president, VP, historian). Additional attendance at events outside of school may also be required. This course is for grade 10-12 students, with teacher recommendation.

752 SELECT CHORUS (VOX) – Honors

5 credits/year

This ensemble is open to students in grades 10-12 who are committed to achieving the highest levels of musical excellence. Treble voices who show significant control over their vocal technique through an audition and interview process will be selected to join the ensemble. The course will provide students numerous performance opportunities, via school related performances and out-of-school performance engagements. Through the study of a wide variety of choral literature, students will increase their global awareness through the study of music from other nations and cultures resulting in a mutual respect for diverse societies and customs. Emphasis will be placed on the development of individual vocal technique, choral ensemble balance, stylistic interpretation and analysis, musicianship skills, and creativity through musical expression. Through the duration of the course, the students will develop skills in collaboration, creativity and innovation, life skills in leadership, ethics, accountability, adaptability, personal responsibility, personal productivity, people skills, self-direction and social responsibility. Members of this ensemble are expected to audition for MMEA District, SEMSBA, and ACDA honor choirs, as determined by the student and the Director. Ensemble members are strongly encouraged, though not required, to take private voice lessons to help maintain the high level of musical integrity that has been established by this group.

## MUSIC ELECTIVES

765 GUITAR 1

2.5 credits/year

This course serves as an introduction to guitar playing, and is especially suited for students who would like to eventually play guitar in a band, or write their own songs. Over the course of the year, students will develop skills related to performing on the acoustic guitar including: playing chords and melodies, basic strumming patterns, finger picking technique, and bar chords. Through dedicated practice, students will cultivate musicianship skills, such as the ability to read music and follow a chord chart, listen to and analyze songs, and perform as a soloist and member of an ensemble. Students will increase their global awareness through the study of music from other nations and cultures, resulting in a mutual respect for diverse societies and customs. Through the duration of the course, students will develop skills in



critical thinking, communication skills, collaboration, creativity and innovation, and contextual learning; and life skills in accountability, adaptability, personal responsibility, personal productivity, people skills, and self-direction. Possible final project topics for the class include, but are not limited to: forming a band with fellow classmates and writing your own song; composing a solo song; creating a music video covering a song you love. This course is for students in grades 9-12.

766 GUITAR 2 2.5 credits/year

Students who have successfully completed Guitar 2 may register for Guitar 2.

767 GUITAR 3 2.5 credits/year

Students who have successfully completed Guitar 2 may register for Guitar 3.

781 PIANO 1 2.5 credits/year

This course will provide students with introductory experiences on the keyboard. Taught in the Music Technology Lab, each student will have opportunities to develop performance techniques necessary to perform simple songs on our KORG keyboards. No prior piano/keyboard skills are needed for this course. Students will gain a working knowledge of selected scales, chord progressions, music reading skills, and expressive characteristics appropriate to the keyboard. Students will also explore the evolution of the keyboard to its current technology, and will learn about famous pianists and composers. The students will increase their global awareness through the study of music from other nations and cultures resulting in a mutual respect for diverse societies and customs. Through the duration of the course, the students will develop skills in critical thinking, communication skills, collaboration, creativity and innovation, and contextual learning; and life skills in accountability, adaptability, personal responsibility, personal productivity, people skills, and self-direction. This course is for grade 9-12 students.

782 PIANO 2 2.5 credits/year

Students who have successfully completed Piano 1 may register for Piano 2.

783 PIANO 3 2.5 credits/year

Students who have successfully completed Piano 2 may register for Piano 3.

770 AMERICAN CONTEMPORARY MUSIC 2.5 credits/year

This course is intended for the student who has a general interest in music, but may not be involved in one of the performance ensembles. The course will follow the development of Western music through the birth of American music and then carefully examine the various styles that were indigenous to America. The development of popular music, beginning with the blues and Jazz, continuing through early rock-n-roll, with the British invasion, and popular trends up to today will be explored as well as Musical Theater and contemporary American music. The students will increase their global awareness through the study of Western and African music and how these traditions gave birth to American music. Through the duration of the course, students will develop skills in critical thinking, communication skills, collaboration, creativity and innovation, and contextual learning; and life skills in accountability, adaptability, personal responsibility, personal productivity, people skills, and self-direction. This course is for students in grades 9-12.

771 SONGWRITING 2.5 credits/year

This course is intended for the student who has an interest in discovering what makes a hit song and how they are written. It is also a gateway for advanced studies in music theory. Students will review the basic fundamentals of music including sound, harmony, melody, rhythm, timbre, form and growth. By the completion of the course, students will have a portfolio of songs and compositions in a variety of styles. Students will also explore the composition of digital music by using various music technology software including StudioOne, Garageband, Finale, and Noteflight. Students taking this course should have an interest in creative writing, music composition, and collaboration. No formal music training is required. This course fulfills the prerequisite for AP Music Theory. Songwriting can be taken simultaneously or sequentially with Recording and Music Production or as a standalone course. This course is intended for students in grades 9-12.





allowing students to grow in their ability to express themselves while gaining confidence in a safe space. Through this class, all students will share in the joy of drama while creating friendships and learning from each other. This class is open to all students in grades 9-12.

790 TECHNICAL THEATER

2.5 credits/year

This course will introduce students to technical theater concepts, design, and implementation. The course will center around hands-on training as well as theory in theatrical elements including, but not limited to, lighting, sound, stage management, properties, costumes, makeup, safety protocols (IATSE Standards), publicity and house management, set design and supervised construction, show production, and rights and licensing. Students will gain a well-rounded understanding of technical theater, theater production and theatrical design. They will research, read and analyze theatrical productions/works for technical design elements. Learned skills will be applied to classwork, full scale productions (Main Stage Musical, Drama Festival, Spring Show, PRISM, etc.) and in school presentations. They will learn how to keep a clean and safe workspace, how to program and run our sound and lighting boards, how to work our rigging and fly rail systems, and general theater maintenance. This course is open to all students in grades 9-12.

## PHYSICAL EDUCATION AND WELLNESS COURSES

Course No.	Title	Level	Credits	Grades
802	Physical Education 9/10	CP	2.5	9, 10
808	Physical Education 11/12	CP	2.5	11, 12
811	Lifesaving Skills	CP	2.5	11, 12
814	Partnership in Physical Education	CP	2.5	10, 11, 12
815	Personal and Social Development	CP	2.5	9, 10, 11, 12

### Physical Education and Wellness

Physical Education and Health Education are combined to make up the Wellness Education Curriculum. Each course offers students a combination of life-time activities and health related topics designed to broaden the student's overall well-being - including, but not limited to - the creation of a supportive learning community and developing self-awareness and self-management.

802 PE 9/10

2.5 credits/year

This introductory course will provide learners with an understanding of health-related fitness, group dynamics, communication and collaboration, and individual/team skill building. The following learning experiences may be included: basketball, badminton, health-related fitness, strength training, touch football, field hockey, power walking, volleyball, ultimate Frisbee, yoga, softball, Wiffle ball, rag ball and tennis. Students will be able to perform and demonstrate proper stretching mechanics. Students will demonstrate their learning and achievement through performance-based and written assessments. In addition to physical activities, each year relevant adolescent health and wellness topics will be integrated into the curriculum. The curriculum may include wellness topics such as diet, sun safety, body image, substance abuse, bullying and depression.

803 PE 11/12

2.5 credits/year

This physical education course, for juniors and seniors, will include learning experiences in health-related fitness and exercise concepts, group dynamics, movement studies, rhythmic and dance, strength and conditioning, lifetime activities, and advanced team concepts. Specific activities offered include badminton, weight training, aerobics, yoga, Pilates, team handball, floor hockey, two-hand touch football, ultimate Frisbee, power walking, tennis, softball, and basketball. Students will demonstrate their learning achievement and will be accountable through performance and cognitive technological assessments. All students will either design their own personal fitness plan or develop and conduct a lesson plan for a unit of their choice. Each personal fitness plan or lesson plan will include at least one form of technology and demonstrate effective writing skills. In addition to physical activities, each year relevant adolescent health and wellness topics will be integrated into the curriculum. The curriculum may include wellness topics such as safe driving, substance abuse, gender identity, healthy relationships, CPR and First Aid, healthy sleep habits and depression.

811 PE: LIFESAVING SKILLS

2.5 credits/year

This elective course for grade 11-12 students will teach students how to appropriately respond to, prevent, and identify a variety of medical and emergency situations. Topics to be covered include, but are not limited to the following: first aid, adult, child, infant Cardiopulmonary Resuscitation (CPR) and AED use, mock ALICE training, Tourniquet training, Self defense-R.A.D for Men and R.A.D for Women, and Narcan administration. Students will have the option to obtain certification from the American Red Cross for First Aid and CPR. In addition, students will be exposed to a variety of current health/wellness topics. Knowledge gained from a variety of topics will help educate, empower, and foster positive decision-making. Community involvement/partnerships will be implemented during this course as much as practical and possible. Students in this course are expected to be active participants, efficient communicators, and effective collaborators.

814 PARTNERSHIP IN PHYSICAL EDUCATION

2.5 credits/year

A collaborative instructional program for both typical learners as well as learners with a disability to give all students the skills necessary for a lifetime of rich leisure, recreation, and sport experiences to enhance physical fitness and wellness. Interested students should contact one of the PE/Wellness teachers. This course is open to grades 10-12.

815 PERSONAL AND SOCIAL DEVELOPMENT

2.5 credits/year

This course focuses on helping students develop the skills, knowledge, and work ethic to be responsible and productive members of a changing society. Students will begin creating their "Career and Academic Plan (MyCAP)". MyCAP is a student-centered, multi-year planning tool designed to provide students with ongoing opportunities to plan for their academic, personal/social and career success. Through identification of interests and goals along with an acknowledgement of any barriers to success and support necessary to overcome those barriers, MyCAP maps the academic plan, personal/social skill attainment, and workplace readiness activities required for postsecondary success. Students will be introduced to the college and career electronic platform, Scoir. This electronic platform provides a place to organize and record progress related to academic achievement, personal/social skill development, and college/career development information that leads to college and workplace readiness. Students will participate in a social emotional learning curriculum through School-Connect, a leading provider of high school social emotional learning (SEL) curriculum. This multimedia curriculum is designed to improve high school students' social, emotional, and academic skills and strengthen relationships among students and between students, teachers and staff. The program consists of four modules based on CASEL's Social and Emotional Learning (SEL) Competencies identified by researchers as critical to success in school, the workplace, and life in general: social awareness, self-awareness, self-management, relationship skills, and responsible decision making.