

NIKOLA TESLA STEM HIGH SCHOOL

INSPIRE, EDUCATE, INNOVATE



SUPPLEMENTAL COURSE CATALOG 2026-2027

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Typical Tesla STEM Student Schedule

6 classes at STEM required each year

9th Grade	10th Grade
<ol style="list-style-type: none"> 1. Honors English 9 2. Math: Algebra 1 Geometry Alg 2 Pre-Calc 3. Science: Honors Physics 4. Fine Art: Graphic Production 5. World Language: Honors Spanish 1, 2, or 3 6. CTE: AP CS Principles 	<ol style="list-style-type: none"> 1. Honors English 10 2. Math: Geometry Alg.2 Pre-Calc AP Calc AB 3. Biology: AP OR Honors 4. AP Environmental Science 5. World Language: Honors Spanish 2 or 3 <i>OR Elective</i> _____ (if 2-year language requirement already met) 6. Elective: _____ (AP CSA, Hn Chem, Engr 1, Business/Econ)
11th Grade	12th Grade
<ol style="list-style-type: none"> 1. English 11: AP OR Honors 2. Math: Alg.2 Pre-Calc AP Calc AB AP Calc BC 3. Honors U.S. History 4. Honors Chemistry <i>OR Elective</i> (if Chemistry already completed) 5. STEM Lab or Elective: _____ 6. Elective: _____ <p>Electives:</p> <ul style="list-style-type: none"> Lab: AP Psych/Forensics (2 periods, Soc. St elective) Lab: EESD AP Chemistry Business/Econ (Social Studies elective) AP Statistics Honors Spanish 3 Computer Science Pathway courses Engineering Pathway courses 	<ol style="list-style-type: none"> 1. English 12 – Honors Analytical & Critical Reading 2. Math: Pre-Cal AP Stats AP Calc AB AP Calc BC 3. Honors Contemporary World Problems 4. Civics & Health (1 sem. grad req each via LWSD) <i>OR Elective:</i>(if Health and/or Civics completed out of district) 5. STEM Lab or Elective: _____ 6. STEM Lab or Elective: _____ <p>Electives:</p> <ul style="list-style-type: none"> Lab: Anatomy/Physiology & BioMed Lab (2 periods) Lab: AP Physics C (2 periods) AP Chemistry Business/Econ (Social Studies elective) or Dig. Mark. AP Statistics Computer Science Pathway courses Engineering Pathway courses

<u>Elective Options:</u>	<u>Optional After School</u>															
<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; border: none;">*Honors Chemistry</td> <td style="width: 33%; border: none;">*Honors Spanish 3</td> <td style="width: 33%; border: none;">*AP Computer Sci A</td> </tr> <tr> <td style="border: none;">*AP Chemistry</td> <td style="border: none;">*AP Statistics</td> <td style="border: none;">*Data Structures</td> </tr> <tr> <td style="border: none;">*Engineering 1</td> <td style="border: none;">*Business/Economics</td> <td style="border: none;">*Advanced Projects Java</td> </tr> <tr> <td style="border: none;">*Engineering 2</td> <td style="border: none;">*Digital Marketing</td> <td style="border: none;">*Peer Tutor/Teacher Assistant</td> </tr> <tr> <td style="border: none;">* Engineering 3</td> <td style="border: none;"></td> <td style="border: none;">*Independent Research</td> </tr> </table>	*Honors Chemistry	*Honors Spanish 3	*AP Computer Sci A	*AP Chemistry	*AP Statistics	*Data Structures	*Engineering 1	*Business/Economics	*Advanced Projects Java	*Engineering 2	*Digital Marketing	*Peer Tutor/Teacher Assistant	* Engineering 3		*Independent Research	<p>Music (2x/week after school)</p>
*Honors Chemistry	*Honors Spanish 3	*AP Computer Sci A														
*AP Chemistry	*AP Statistics	*Data Structures														
*Engineering 1	*Business/Economics	*Advanced Projects Java														
*Engineering 2	*Digital Marketing	*Peer Tutor/Teacher Assistant														
* Engineering 3		*Independent Research														

Tesla STEM Information Regarding Our 6 Period Schedule

As part of their four-year choice school program of study, all students are expected to register for and take six credit bearing courses each semester. Requests for a class schedule with less than six credit bearing courses will be reviewed with extenuating considerations in mind by school counselors and then be reviewed by administration for approval. Extenuating circumstances may include, but are not limited to:

- Employment
- Medical need with documentation
- Educational opportunities outside the school consistent with the student's High School & Beyond Plan

Students interested in attending classes through Running Start can only do so outside of the six-period school day.

All year-long courses at Tesla STEM are year-long commitments. Schedule changes out of a year-long class at the semester will not be considered. LWSD choice schools provide a unique curriculum which emphasizes interconnected and complex learning in the school's area of focus. As a choice school, there are Tesla STEM courses that are a part of our foundational or unique choice school programming that are mandatory for all students. As part of our STEM-focus, we also require students to enroll in Math and Science courses for all four years of high school. Additionally, we require that students take all graduation requirements offered at Tesla STEM on campus within their full-time school day.

Information Regarding Dual-Credit Courses

Dual credit is an opportunity for a high school student to prepare and gain experience for college while still in high school and have the opportunity to earn high school and college credit. It is one form of advanced high school coursework, among others, including advanced high school courses and honors programs.

There are three types of dual credit programs in Washington:

1. **CONCURRENT ENROLLMENT PROGRAMS** : provide opportunity for students to enroll in a college course for both high school and college. Credit is earned at the same time for the college course from a college or university and recorded on a student's high school transcript as high school credit, and the college transcript as college credit. A concurrent enrollment course may be either academic or professional technical.
 - **Running Start (RS)** is a concurrent enrollment program. Students enroll in college courses at a community or technical college or public, four-year university. The course is taught by college faculty. Students earn college and high school credit when they complete the course. The credit and grades students earn will be transcribed on their permanent college transcript. All of Washington's public four-year college and universities accept Running Start credit.
 - **College in the High School (CiHS or CHS)** is a concurrent enrollment program. Students enroll in college courses at their high school. The course is taught by a high school instructor approved by the appropriate college/university academic leadership and who meets the minimum qualifications for instructors teaching the course on campus. Students earn college and high school credit when they complete the course. The credit and grades students earn will be transcribed on their permanent college transcript. All of Washington's public four-year college and universities accept college credit earned through College in the High School coursework.

CHS Courses offered at Tesla STEM include:

 - **The University of Washington (No-Cost)**: ATMOS100, BIOL100, BIOL 118 &119, SPAN103 (www.uwhs.uw.edu/about)
 - **Bellevue College (No-Cost)**: BIOL&160, MATH&254, MATH&153 (www.bellevuecollege.edu/chs/)
 - **UT Austin (~\$300)**: ES301 (www.engineeryourworld.org)
2. **COLLEGE PREPARATORY PROGRAMS WITH EXAMS (AP, IB, CAMBRIDGE)**: provide opportunity for students to enroll in high school courses for which a student may earn college credit dependent on an exam score earned through recognized standardized examinations.
 - **Advanced Placement (AP)** is a college preparatory program with exam. Students enroll in Advanced Placement high school courses. The course is taught by a high school teacher. Students earn high school credit when they complete the course. Students may earn college credit depending on their exam score on a standardized AP exam. All of Washington's public four-year college and universities award college credit for qualifying AP exams scores (<https://apstudents.collegeboard.org/getting-credit-placement/search-policies>)
 - **Cost**: There is no fee for students to enroll in AP Courses and earn high school credit. More information at <https://apstudents.collegeboard.org/what-is-ap>. Approximately \$100 per exam for students who choose to take the end-of-course national AP Exam. Financial assistance is available for those who qualify.
3. **ARTICULATED CREDIT PROGRAMS**: provide opportunity for students to earn college credit retroactively for high school coursework in a technical field aligned with a college course. Credit is awarded only by the college(s) that establish an articulation agreement between the district and the college for the high school course. Students receive a college transcript based on performance in the articulated college course.
 - **Career and Technical Education (CTE) Dual Credit** is an articulated credit program. CTE Dual Credit courses have articulation agreements with aligned college level courses. Students earn college credit while at their high school or skill center by meeting course competencies. The course is taught by a qualified high school teacher, and students earn high school credit upon course completion. Transcription processes vary by agreement. Students' application of credit earned may vary depending upon the degree pathway pursued. Transferability of CTE dual credit courses are variable, and students should check with the college or university they hope to attend after high school for individual policy.

Credit transfer equivalency guides: <https://councilofpresidents.org/dual-credit-tool/dual-credit-resources/> Learn more at www.pnwcollegecredit.org.

Approximately \$50 for the year (for one or more dual-credit courses) to earn CTE Dual Credit. Note: registering and paying for college credit for any Dual Credit course automatically starts an official college transcript with the

institution offering the course.

Period 0/7 Information – Tesla STEM High School

While all our scholars receive a robust STEM education within our 6-period schedule, some may want to extend their learning by taking a Period 0 (before school) or Period 7 (after school) class. The information students submit now will be used to fill the limited seats in these classes once staffing is finalized and course offerings are determined.

Continuing Period 0/7 Classes: The following classes ***will continue to be offered:***

- **Orchestra (Grades 9-12)**
Period 7, year-long; Mondays & Thursdays from 2:50-3:50pm plus required evening concerts
- **ASB (Grades 9-12) - Students elected**
Period 0, year-long; Mondays & Thursdays from 7:00-8:00am plus required ASB events/activities
- **Link Crew (Grades 11-12) - Students selected by application**
Period 0, year-long; Fridays from 7:00-8:00am plus required Link Crew events/activities
- **Online Health and Hybrid Civics (Grade 12):**
Period 7. Offering these two semester-long graduation requirements outside the school day allows seniors to fit both a STEM Lab and an elective into their 6-period schedule.
Note: Online health and online civics will also be offered during the school day.
 - o **Online Health (Grade 12):** Fully online; semester-long
 - o **Hybrid Civics (Grade 12):** Semester-long; includes both online learning and in-person classes every other Wednesday from 1:15–2:45 pm.

Potential Period 0/7 Classes: The following classes ***may be offered*** if there is staffing and enough student interest.

- **Independent Research (Grade 11)**
Period 0, year-long; Mondays–Thursdays from 7:00-8:00am plus attendance at CRESEF and WSSEF
- **Honors Chemistry (Grades 10-11)**
Period 0, year-long; Mondays–Thursdays from 7:00-8:00am plus two-hour final exam each semester
- **Personal & Business Law (Grades 11-12)**
Period 0, 1st Semester only; Mondays–Thursdays from 7:00-8:00am plus two-hour final exam
- **Choir (Grades 9-12)**
Period 7, year-long; Tuesdays & Fridays from 2:50-3:50pm plus required evening concerts

Important Notes:

- Taking a Period 0/7 class will add to a student’s overall workload. Students are encouraged to consider all their commitments, both in and outside of school, to maintain balance and well-being.
- Students in a Period 0/7 class will **not** be able to attend office hours or clubs during class times.
- Only one Period 0/7 class can be taken (*exceptions: Orchestra, Choir, ASB, and Link Crew*).
- Enrollment in a Period 0/7 class requires taking 6 academic classes during the regular school day, so students cannot TA or Peer Tutor (*exceptions: Orchestra, Choir, ASB, and Link Crew*).
- If interest in a Period 0/7 class exceeds the number of available seats, a lottery will be used to determine which students are offered a seat in the class.
- Families are responsible for transportation for their students to attend Period 0/7 classes.

Placement Notification: Students who are placed in Period 0/7 classes will be notified via email by early June.

Class of 2026+ Minimum Graduation & University Requirements

SUBJECT	STATE MINIMUM GRAD REQUIREMENTS	TESLA STEM COURSE OFFERINGS	UNIVERSITY REQUIREMENTS
ENGLISH	4 Credits	Hn English 9, Hn English 10, Hn or AP English 11, English 12 – Hns Analytical & Critical Reading	All Universities: 4
SOCIAL STUDIES	3 Credits	Hn U.S. History, Hn Contemporary World Problems, AP Psychology, Economics (0.5 credits), Civics (0.5 credits)	Minimum: 3 Competitive Universities: 3-4
WORLD LANGUAGE	2 Credits <i>Must take two years of the same language</i>	Hn Spanish 1-3	Minimum: 2 Competitive Universities: 3-4
MATH	3 Credits	Algebra 1, Geometry, Hn Algebra 2, Hn Precalculus, AP Statistics, AP Calculus AB, AP Calc BC, MVC, AP CSP, AP CSA	Minimum: 3 Competitive Universities: 3-4 (<i>many Universities mandate Senior year Math</i>)
SCIENCE	3 Credits	Hn Physics, Hn or AP Biology, Biology Lab, AP Environmental Science, Hn or AP Chemistry, Forensics, Environmental Engineering & Sustainable Design, AP Physics C, Hn Anatomy/BioMed	Minimum: 2 Competitive Universities: 3-4
FINE ARTS	2 Credits <i>1st cr mandatory, 2nd cr optional based on HSB Plan</i>	Graphic Arts, Music	Minimum: .5 -1 Competitive Art Universities: 2-3
OCCUPATIONAL	1 Credit	Environmental Engineering & Sustainable Design, all Engineering classes, Forensics, AP Psychology, all Comp Sci classes, all Business classes	
P.E.		Pass PE Proficiency Process in 11 th /12 th grade	
HEALTH	0.5 Credit	Online Health course @ STEM or through outside approved online provider	
ELECTIVES	Varies	Advanced Science classes, Advanced Math, Computer Sciences, Music, Engineering, Business, all other additional classes	
TOTAL CREDITS	24 credits		<i>*Check individual colleges for additional course requirements and testing requirements (ACT, SAT, etc.)</i>
STATE GRADUATION PATHWAY/TESTING REQUIREMENT		Math Smarter Balanced Assessment or Approved Graduation Pathway	
		English Smarter Balanced Assessment or Approved Graduation Pathway	
HIGH SCHOOL & BEYOND PLAN REQ.		HSBP online lessons each year; completed in Senior Year	

****LWSD Math and World Language are the ONLY middle school classes that receive high school credit****

LWSD graduation requirements can also be accessed at <https://www.lwsd.org/students-families/students/high-school-guide>

English Language Arts

English 9 (Honors) - 1 Credit - ENG171/ENG172

Prerequisite: Current Freshman

This course introduces students to a variety of literatures, including key works, Herman Melville's Moby-Dick, or the Whale, William Shakespeare's Romeo and Juliet, and Maya Angelou's I Know Why the Caged Bird Sings. STEM literacy and critical thinking are emphasized as are the study of the fundamental elements of communication in a variety of media. We focus on themes of knowledge, responsibility, the power of individual choice and the connection of humanities within the STEM model, specifically "The Grand Challenges for Engineering." Public speaking units, including Lincoln- Douglas debate, original oratory and presentation, will be intensive in preparing students for the rigor of upper grades. By the end of the year, students will have received skills important to work in literary and STEM study, such as:

- Careful and analytic reading of academic prose
- Ability to situate oneself in a critical conversation and debate
- Ability to create a logically coherent claim
- Ability to develop a coherent and sustained argument using evidence
- Ability to speak and present ideas, research, and work products to a variety of audiences

English 10 (Honors) - 1 Credit - ENG 271/ENG272

Prerequisite: Current Sophomore

From the Romantic poets and Mary Shelley's Frankenstein to dystopian literature such as Aldous Huxley's Brave New World and Ray Bradbury's Fahrenheit 451, along with assorted short stories and dramatic tragedy like William Shakespeare's Macbeth, we will investigate and question what it means to be human and our relationship with nature, the natural order, and STEM issues. Students will write clear, organized, vivid prose with specific textual references for evidence. Analytical essays will be written with sophistication in sentence, paragraph, and essay form. By the end of the year, students will have received skills important to use in literary and STEM study, such as:

- Careful reading of primary textual evidence
- Ability to summarize the main claims of an academic essay
- Ability to formulate a distinct critical perspective
- Ability to present well organized arguments
- Careful adherence to research skills

English Language & Comp - 1 Credit - (Honors) ENG371/ENG372 or (AP) ENG 491/ENG492

Prerequisite: Current Junior

Students will read and carefully analyze a broad selection of informational texts featuring a variety of authors and historical contexts. Students will develop sophistication and stylistic maturity in their own writing while building their skills in comprehension, interpretation, evaluation, argumentation, rhetorical analysis, and vocabulary acquisition. In addition, literature selections will focus on American literature. A summer reading assignment is also required.

Students who elect to take the course for AP credit will complete additional work, including one extra paper, more vocabulary, a more extensive first semester final, and will prepare to sit for the AP Language & Composition exam in May. AP Language final exams and tests are designed to more closely mimic the AP exam. AP Language is considered to be a college-level course, so students may potentially receive credit and/or advanced placement from the university they plan to attend depending on the score they earn on the AP Exam.

English 12 – Analytical & Critical Reading (Honors) - 1 Credit – ENG741/ENG742

Prerequisite: Current Senior

Literature courses offer the opportunity for students to study and reflect upon the themes presented in the body of literature being presented. Students improve their critical-thinking skills as they determine the underlying assumptions and values within the reading selection and as they understand how the work reflects society's problems and culture. Oral discussion is an integral part of literature courses, and written compositions are often required. Literature courses may survey representative works, reflect a particular genre or a specific theme, or survey works of a particular time or people.

Fine Arts

Graphic Art/Production - 1 Credit - CDA361/CDA362

Prerequisite: All Freshmen are required to take this yearlong class

Graphic Production and Design I introduces students to the fundamentals of graphic design, focusing on type, images, visual awareness, and conceptual and technical skills within print design. Students will learn about the role of a graphic designer as a creative problem solver who conceptualizes, plans, and executes designs to communicate messages. This two-semester course covers the meaning of graphic design, the design process, and the role of graphic designers in society. Through hands-on exercises and projects, students will engage in critical thinking and making. Instruction includes computer-assisted art and design, photography, concept development, technical drawing, color theory, and imaging. Traditional art materials and Adobe Creative Suite software will be used to create original designs.

Additional Information: Students will collaborate on school-wide projects with peers, and teachers, gaining real-world experience and building a supportive network. This interactive course combines technical skill development with practical applications, preparing students to succeed in the evolving design market with market-ready design products and to make strong visual presentations for STEM courses

Optional CTE Dual Credit

Bellevue College Course Equivalency – DMA 103: Digital 2D Design (5 college credits)

- OR -

LW Tech Course Equivalency – DSGN 121: Vector Illustration 1 w/ Illustrator (4 college credits)

Orchestra - 0.5 Credit (7th Period Course) - MUS311/MUS312

Prerequisite: Previous instrumental (strings, winds, brass, and percussion) experience

Orchestra introduces the instrumental music student to the demands and schedule of performance at the high school level. Students will continue to develop individual musicianship and technical skills through the study and performance of a variety of music. This class allows musical expression, self-discipline, and dedication to group efforts. Students are instructed in the fundamentals of musical performance (tone, rhythm, scales, theory, instrumental techniques), with an emphasis on high level group performance. Students must practice regularly, perform assigned music accurately and attend performances throughout the year. By the end of this course students will be able to sight read grade three music, perform grade four music, evaluate individual performance to aid improvement and understand preparation and performance skills used by professional musicians.

Choir - 0.5 Credit (7th Period Course) - MUS411/MUS412

Prerequisite: Previous choir experience preferred but not required

Choir introduces the vocal music student to the demands and schedule of performance at the high school level. Students will continue to develop individual musicianship and technical skills through the study and performance of a variety of music. This class allows musical expression, self-discipline, and dedication to group efforts. Students are instructed in the fundamentals of musical performance (tone, rhythm, scales, theory, vocal technique), with an emphasis on high level group performance. Students must practice regularly, perform assigned music accurately and attend performances throughout the year. Through the process of learning music theory, history, developing sight-reading skills, evaluating individual and group performance, and practicing good ensemble skills, the students will learn to make music that goes beyond the written page and creates a moving experience for performers and listeners.

Social Studies

US History (Honors) - 1 Credit - SOC371/SOC372

Prerequisite: Current Junior

Students will examine the history of the United States from pre-colonial times to the present through several units of study. The course follows a timeline covering such topics as the Colonial Period, Constitutional Period, Pre-Civil War, Post-Civil War, Expansion and Industrialization, and Early, Middle and late 20th Century. Students will develop and practice historical reasoning skills such as compare and contrast, cause and effect and will apply those skills in tests, writing assignments and classroom projects. By the end of this course, students will be able to read and interpret difficult primary sources, write complex essays on historical topics, and present their understanding of complex historical topics in a variety of formats.

Contemporary World Problems (Honors) - 1 Credit - SOC275/SOC276

Prerequisite: Current Senior

This course examines the history of the contemporary world (generally 20th century to present) with a focus on the countries that have had an impact or a close relationship with the United States. Students will examine the formation of modern political and economic systems and the impacts those countries have had on the world. Deeper studies of other countries also include discussions on colonization, scientific and industrial revolutions, the development of national and regional identities, and global expansion and international conflicts. Other topics of study include political theories, climate change, terrorism, civic engagement, genocide studies, and media literacy. By the end of this course, students will be able to explain how historical events have affected contemporary societies and governments and how they might continue to do so in the future.

Civics - 0.5 Credit – SOC521

Prerequisite: Current Senior

This course is designed to prepare students to fulfill their role as citizens in a democratic society. This online course consists of a series of assignments over the semester that examine the foundations of America's democratic traditions. By the end of this course students will have an understanding of the structure and function of the U.S. government as well as the rights and responsibilities of U.S. citizenship. There is an option for students to choose a fully online course or a hybrid course in which students work in both online modules and in-person classes that allow for simulations and hands-on practice.

These courses also count as social studies credits:

AP Psychology -1.0 Credit Social Studies - See "Signature Labs" Section for pre-requisites and a detailed course description.

Business and Marketing Foundations/Economics -0.5 Credit Social Studies - See "Business" Section for prerequisites and a detailed course description.

World Language

Spanish I (Honors) - 1 Credit - FOR513/FOR514

Prerequisite: None

This class is for students with no previous experience with the Spanish language. Through the use of authentic resources (e.g., newspaper articles, videos, podcasts, blogs), students will learn to communicate at the novice level in the three communications modes: interpersonal, interpretative, and presentational. Instruction will be mostly Spanish.

Spanish II (Honors) - 1 Credit - FOR523/FOR524

Prerequisite: Spanish I/Instructor Approval

Students will continue to build on the communication skills learned in Spanish 1. The curriculum is structured on themes that are of interest to the students. Students will learn to communicate at the intermediate low level. Grammar and new vocabulary will be taught in context through reading and listening to authentic sources. Students will continue to learn about the Hispanic culture, make connections with other disciplines, compare the Spanish language and the Hispanic culture with their own language and culture, and awaken their desire to use the language for enjoyment and enrichment. Instruction will be mostly in Spanish.

Spanish III (Honors) - 1 Credit - FOR533/FOR534

Prerequisite: Spanish II/Instructor Approval

Students will continue to build on the language structures learned in Spanish 1 and 2. They will expand their ability to communicate in Spanish and deepen their understanding of Hispanic culture. Through the use of authentic resources (e.g., newspaper articles, videos, podcasts, blogs), students will increase their knowledge of Hispanic culture, make connections with other disciplines, compare Spanish and Hispanic culture with their own language and culture, and develop a desire to use the language for enjoyment and enrichment. In addition, students will learn new grammar concepts and increase their vocabulary. The goal of the class is for students to communicate at the Intermediate Mid-level. Instruction will be conducted mostly in Spanish.

The curriculum is aligned with the goals and standards developed by the American Council on the Teaching of Foreign Languages (ACTFL).

Math

The math courses are designed as a sequential pathway, laying the foundation for further mathematical study. Each course has a strong emphasis on applied problems and integrates engineering curriculum throughout the content.

Algebra I - 1 Credit - MAT241/MAT242

Prerequisite: None

This course formalizes & extends mathematics that students learned in the middle grades. Students will (1) develop fluency between various forms of linear equations, inequalities & simple exponential functions, & using them to solve problems; (2) compare/contrast linear & exponential functions, translate between different representations, use function notation, & interpret arithmetic sequences as linear functions & geometric sequences as exponential functions; (3) using regression techniques to describe linear relationships quantitatively & make judgments about the appropriateness of linear models; (4) extend the laws of exponents to rational exponents, see structure in and create quadratic and exponential expressions, & solve equations, inequalities and systems of equations involving quadratic expressions; and (5) compare quadratic, linear, & exponential functions. They also identify the real solutions of quadratic equations as the zeroes of a related quadratic function and expand their experience to more specialized functions – absolute value, step, and those that are piecewise-defined.

Geometry - 1 Credit - MAT321/MAT322

Prerequisite: Algebra 1

Geometry is study of shapes and angles that describe the physical space in which we live. The course is primarily focused on logical and spatial reasoning. Students will use both inductive and deductive reasoning to communicate their thinking and written proofs as well as geometric constructions to validate their conclusions. The course will have an additional emphasis on applications to the world around us. During this yearlong course, students will study the properties and applications of angles; parallel and perpendicular lines; triangles; similarity and congruence; right angle trigonometry; quadrilaterals; circles; coordinate geometry; three dimensional solids; the measures of length, area and volume; and geometric probability.

Algebra II (Honors) - 1 Credit - MAT271/MAT272

Prerequisite: Successful completion of Algebra I & Geometry

Advanced Algebra is the study of things that vary with relation to one another and can be described with mathematical statements. The course is primarily focused on analyzing mathematical relations graphically, numerically, symbolically, and verbally. Students will analyze and identify the relationship among mathematical expression and justify their conclusions through graphs, tables, and symbolic manipulation. During this yearlong course, students will study linear equations, systems of equations, inequalities, quadratic and polynomial equations, the expansion of the number system to include complex numbers, exponential functions, logarithmic equations, series, and statistical analysis of data. Students will need a graphing calculator for this class (TI-84 or above).

Precalculus (Honors)- 1 Credit - MAT615/MAT616

Prerequisite: Successful completion of Algebra II

Precalculus is a deeper examination of the topics of Algebra II and Trigonometry. This course is designed to prepare students for further rigorous study of mathematics and is the recommended course for students intending to take Calculus at the high school or University Level and pursue degrees in Mathematics, Computer Science or Engineering. During this yearlong course, students will study: trigonometric functions and identities; polynomial, rational, absolute value, piece-wise, exponential, logarithmic, parametric and polar functions; vectors; conic sections and an introduction to limits. Students will need a graphing calculator for this class (TI-83 or above).

AP Statistics - 1 Credit (AP) - CVM301/CVM302

Prerequisite: Successful completion of Algebra II

This course is designed to cover topics needed to successfully complete the Advanced Placement exam. It is an introduction to the major concepts and tools for collection, analyzing, and drawing conclusions from data. Students are exposed to four broad conceptual themes: exploring data, sampling and experimentation, anticipating patterns, and statistical inference. Some major assignments include designing and implementing sample surveys, observational studies, and experiments, critical statistical analysis of real-life data. By the end of this course students will have a working knowledge of the ideas and tools of practical statistics and will be able to make informed decisions based on data. A graphing calculator is required for this class (TI-84 or above).

AP Calculus AB - 1 Credit (AP) - MAT631/MAT632

Prerequisite: Successful completion of Precalculus (previously Math Analysis)

The focus of the course is to provide students with a solid conceptual understanding of Calculus topics and provide them with a framework for further studies in mathematics. Students are also encouraged to take the AP Exam in the spring for the purpose of earning college credit or accelerated placement. This course covers the subjects of limits as well as differential and integral calculus comparable to the first 2 quarters of Calculus at most Universities. Students entering AP Calculus AB should have finished 4 years of preparatory work in mathematics through Pre-Calculus or Math Analysis and have a solid foundation in the analysis of the following classes of functions: Linear, quadratic, polynomial, rational, power, exponential, logarithmic, absolute value, piece-wise, step, and trigonometric. A graphing calculator is required for this class (TI-83 or above).

AP Calculus BC - 1 Credit (AP) - MAT641/MAT642

Prerequisite: Successful completion of AP Calculus AB

The course is an extension of AP Calculus AB. It features a multi-representational approach to calculus, with concepts, results, and problems expressed graphically, numerically, analytically, and verbally. This course is designed to cover topics needed to successfully complete the AP exam including integration techniques, infinite series, polar coordinates, parametric equations, conic sections with calculus, and vectors. The course regularly incorporates use technology to reinforce relationships among functions, to confirm written work, to implement experimentation, and to assist in interpreting results. A graphing calculator is required (TI-83 or above).

Multivariable Calculus - 2 Credits - MAT647/MAT648

1 Credit/Semester

Prerequisite: Successful completion of AP Calculus BC

This course explores concepts typically covered in a third-semester college calculus course. You'll extend your knowledge from AB and BC Calculus to cases where there are more than one independent or dependent variable including: partial derivatives, multiple integrals, and their applications; parametric curves and surfaces in Euclidean space; solid analytic geometry; and the calculus of vector-valued functions.

Optional BCHS (CHS) Credit

Bellevue College Course Equivalency –

- **MATH&153: Calculus III – (5 college credits)** Emphasizes the study of infinite sequences and series including power series. Topics include plane analytic geometry, graphing in polar coordinates, and an introduction to vectors.
- AND -
- **MATH&254: Calculus IV – (5 college credits)** Extends the concepts of calculus to vector-valued functions and functions of several variables. Partial derivatives are included.

Cost: free

Website: <https://www.bellevuecollege.edu/chs/>

Engineering

Engineering I - 1 Credit - CDM841/CDM842

Prerequisite: None

Engineer Your World is a one-year high school engineering curriculum developed by the Cockrell School of Engineering at University of Texas at Austin in collaboration with the National Science Foundation and NASA. This hands-on, project-based course emphasizes the historic achievements and contemporary challenges of engineers, the engineering design process, and the skills and habits of mind that engineers find most essential in their work. Our first unit focuses on establishing norms for all of our group interactions and for effective documentation of our projects in our engineering notebooks. The next five units all involve designing, building, and testing devices or systems of devices to accomplish specific tasks in response to customer needs. Each unit also emphasizes several specific aspects of the work of professional engineers. Remaining units are: Pinhole Cameras (Discovering Design), Earthquake Simulator (Data Acquisition and Analysis), Piggy Flashlights (Reverse Engineering and Redesign), and Aerial Imaging (Systems).

Optional University of Texas - Austin Credit (CHS)

UT-Austin Equivalent Course –

- **ES301 – Engineering Design and Problem Solving (4.5 credits)** *This course uses a unique, multi-level engineering design process, highlighting engineering’s potential to impact human lives.*
 - **Cost:** ~\$300 (subject to change) | **Website:** www.engineeryourworld.org

Engineering II (Accelerated) - 1 Credit - CVX843/CVX844

Prerequisite: Engineering I

Picking up where *Engineering I* left off, this course is designed to build on the knowledge and skills acquired in the first year of engineering and to challenge students with more complex projects and more independent decision making. Hands-on and project-based, this course emphasizes the historic achievements and contemporary challenges of engineers, the engineering design process, and the skills and habits of mind that engineers find most essential in their work. Students will work in cooperative groups to address challenges ranging from automotive and mechanical engineering to electrical and energy system engineering. The course will culminate in an original design challenge, where students will have an opportunity to apply everything that they have learned in a project of their choice. Students will create formal presentations of their projects, appropriate for community sharing events and for science and engineering competitions.

Optional CTE Dual Credit (if not claimed in Engineering 1)

Lake Washington Tech Course Equivalency – ENGR 100: College Success in Engineering (3 credits)

Engineering 3: STEM Startups (Accelerated) - 1 Credit - CVX845/CVX846

Prerequisite: Engineering I, 11th and 12th grade only

Students make their ideas real and create startups in Advanced Engineering: STEM Startups, an interdisciplinary engineering, design, and business class. First, students complete fast-paced kickoff challenges to develop skills and knowledge in design thinking, user research, technical development, business modeling, project management, and networking. Then, students create their startups using the engineering design process and following these steps: forming professional teams, generating ideas, validating with customers, creating a business plan, building a minimum viable product, iterating with potential customers, building a prototype, designing a pitch, and presenting the pitch to an external panel of entrepreneurs, innovators, and investors. Through the iterative process of building a startup to serve specific customers, students are empowered with an entrepreneurial mindset, connected to a network of industry professionals, and exposed to frameworks and tools that help them design better products.

Computer Science

AP Computer Science Principles- 1 Credit (AP) - CDM913/CDM914

Prerequisite: None

Per College Board, this course provides introductions to programming and to the fundamentals of computing, including problem solving, working with data, understanding the Internet, cybersecurity and privacy. This course is also the initial programming course students take at Tesla STEM. Suggested units will include abstraction, algorithms, computational thinking and global impact. Students will demonstrate project-based learning and teamwork in many of the assignments. Programming topics are designed to build the foundational knowledge necessary for the next-level AP Comp Sci A (Java) course. This course will prepare students to take the AP Computer Science Principles exam in the Spring. Students electing to take the AP exam will also be expected to submit portfolio assignments to the AP College Board as part of the exam.

Optional CTE Dual Credit

Bellevue Course Equivalency – DEV 110: Computer Programming/Principles (5 credits)

AP Computer Science A with Java - 1 Credit (AP) - CDM911/CDM912

Prerequisite: Algebra II & 10th grade and above.

This course is generally equivalent to the first course in an undergraduate computer science program. The emphasis in the course is on procedural and data abstraction, object-oriented programming and design methodology, algorithms, and data structures. The course centers on understanding programming concepts and projects that explore a broad range of fields that leverage programming. It is important that students understand that computer science builds upon a foundation of mathematical reasoning and written communication, and students are expected to have acquired these skills before attempting this course. Successful completion of this course and its projects will prepare students for the AP Comp Sci A exam.

Optional CTE Dual Credit

Bellevue Course Equivalency – DEV 128: Object Oriented Programming with Python (5 credits)

Data Structures (Accelerated) - 1 Credit - CDM921/CDM922

Prerequisite: AP Computer Science A (must have completed a 1.0 credit course), Current Junior/Senior only

This course is a post-AP Computer Science A course and is generally equivalent to the second course in an undergraduate computer science program. It extends the concepts introduced in AP Computer Science, including object-oriented programming with Java. Students will explore the mathematical and theoretical bases of modern computer science, including analysis of fundamental algorithms and their relative efficiencies, computational complexity, and the specific coupling of data structure to computational task. Data structures explored include Linked Lists, Stacks, Queues, Sets, Heaps, Hash Tables, Trees, and Graphs.

Optional CTE Dual Credit

Bellevue College Course Equivalency – DEV258: Data Structures (5 credits)

Advanced Projects (Accelerated) - 1 Credit - CVX931/CVX932

*Prerequisite: Data Structures (*prerequisite must be taken at Tesla STEM)*

This course allows students who have had success in both AP Computer Science A and Data Structures to expand on the skills needed to further explore a potential career in software development. Students complete three significant software projects over the course of the year. Each project is owned by a small group of students who are responsible for planning, designing, implementing, debugging, and presenting their solution. Students taking this class strengthen their skills in time management, problem solving, programming, collaboration, and presentation. They learn how to use industry standard tools for managing a software development project with a team. Industry professionals may volunteer as mentors and guest lecturers as availability allows.

Business

Business Foundations and Economics – 1 Credit – CVX405/CDS406

Prerequisite: Current Sophomore - Senior

This yearlong course focuses on an intro to business structure, the fundamentals of marketing, including market research, product development, pricing and promotion of goods and services, and an introduction to finance and operations. Business ethics, workplace skills, and professional behaviors will be identified and practiced throughout the course. Students will develop essential skills for success in the 21st century, such as speaking, presenting, and critical thinking. This course focuses on giving students real-life business experiences and inspiring them about the business world. Thus, it also includes an internship conducting a SWOT analysis for a small business or non-profit, which can be included on resumes. It also provides students with a diverse, industry-wide set of guest speakers. This class is recommended as a baseline class for further marketing and business classes.

The second semester of this course is designed to help students understand the economy at the personal, personal, business, national, and global levels. It covers the foundations of economic thinking, how markets work, government finances and influence on the economy, and how economists measure and manage the economy, as well as learning the basics of micro and macroeconomics theory. Major topics include personal financial literacy, how businesses and government allocate scarce resources, solutions to income inequality, and the economics of environmental policy. Learn to think like an economist! This course counts for a .5 social studies elective credit.

Optional CTE Dual Credit

Bellevue College Course Equivalency – BUS& 101 Intro to Business (5 college credits)

Digital Marketing & Social Media/Business & Marketing Mngt. – 1 Credit – CDX415/CDX404

Prerequisite: Completion of Business and Marketing Foundations

This course is designed to teach advanced marketing concepts and skills with an application to digital and social media. Topics include integrating digital and social media strategies into the promotional mix of a product, creating social media marketing campaigns across channels, and applying appropriate social media tools. Upon completion, students should be able to assess the effectiveness of the digital and social media strategies for a business and suggest ways to create and improve marketing efforts. In addition, students will reflect on ethics and advancements in artificial intelligence in the digital space, their own use of social media as it applies to their digital reputation, and how to be responsible digital citizens.

The second semester of the class is a more advanced study of business, marketing, and economics. Strategy will be discussed at a higher level and students will have a chance to analyze Harvard Business Review Cases that are used in all graduate school level business strategy courses. Students will also interpret the financial statements of real businesses. A capstone project will allow them to interact with industry business professionals on a strategic marketing endeavor.

Optional CTE Dual Credit

Bellevue College Course Equivalency – MKTG 199 Independent Studies (3 college credits)

Personal & Business Law (0 Period Course) – 0.5 Credit – CVS831

Prerequisite: Current Junior or Senior

This course will introduce systems of federal, state, and local laws and how those laws – civil, criminal, and administrative – apply to individuals and organizations. After that introduction, we will focus on the applications of these legal systems to businesses, with a particular focus on how they influence and dictate the activities of STEM-focused businesses. Major units will cover (1) the laws of agency and contract, (2) business formation in the shadow of tax and liability laws, (3) protecting intellectual property, and (4) negotiating skills in business and life. Students will read, draft, analyze and negotiate contracts and other legal documents. We will also analyze the ethics and legal implications of emerging technologies. This course is a foundation in law for those planning to major in business in college, to pursue careers in business or law, or to be better informed about the law and how it impacts businesses and individuals

Science

Inquiry Physics (Honors) - 1 Credit - SCI471/SCI472

Prerequisite: Current Freshman

Inquiry Physics is designed to keep the innate curiosity of 9th grade thinkers alive using an inquiry approach to inspire deeper questioning about the way things work in the physical world around us. Inquiry Physics will provide maximum opportunity to sharpen the analytical and mathematical skills of talented, motivated students through the study of measurement, motion, forces, energy, optics, gravitation and electricity. Daily activities include discussions, labs, small group problem solving and working in students' Physics Journals. This course will help build the foundational problem-solving skills and attitudes required for continued STEM work.

Biology (Honors) - 1.2 Credit - SCI271/SCI272

0.6 Credit/Semester

Biology Honors is a college-preparatory course intended to provide students with the content-knowledge and skills necessary for performing Biology-related research. This year-long course will provide an opportunity for the student to develop an in-depth knowledge of biochemistry, cells, genetics, DNA, evolution, and ecology. Problem based learning (PBL) projects will be conducted so that students can develop their research, experimental or engineering design, and data analysis skills. Wet lab and computational projects will also be conducted with an emphasis on integrating computer science, statistical analysis, and technology. Major focus is on preparation for academically styled laboratory research and scientific practices.

Optional BCHS (CHS) Credit

Bellevue College Course Equivalency –

- ***BIOL&160, General Biology w/Lab (6 college credits):*** *Introduces major concepts of cell biology, including cell physiology and structure, molecular biology, genetics, and evolution. Course is a prerequisite for professional health-science programs. Format includes laboratory work. Fulfills laboratory science course requirement at BC. Strongly recommended: CHEM& 121, CHEM& 140, or one year of high school chemistry.*
 - ***Cost:*** Free | ***Website:*** <https://www.bellevuecollege.edu/chs/>

AP Biology - 1 Credit (AP) - SCI281/SCI282

Prerequisite: Expected successful completion of Summer AP Biology coursework

Advanced Placement Biology is a rigorous, college-paced course intended to provide students with the content knowledge and skills necessary for performing Biology-related research. By the completion of the year-long AP Biology course, students will have an in-depth understanding of the following “big ideas”: Evolution, Cellular Processes: Energy and Communication, Genetics and Information Transfer, and Interactions. In addition, students will be conducting student-directed, inquiry-based lab experiments that will further prepare them for innovative STEM research in their junior and senior years. Wet lab and projects will be conducted with an emphasis on integrating statistical analysis, and technology. Major focus is on preparation for academically styled laboratory research and scientific practices. The AP Biology curriculum is dictated by the College Board's AP Biology Curriculum Framework. Students in this course will take the Advanced Placement Biology exam in May for an opportunity to earn college credit for the course. This course requires a substantial amount of work/ study outside of the classroom.

AP Environmental Science - 1 Credit (AP) - CVC611/CVC612

Prerequisite: Current Sophomore

This course provides students with the scientific principles; concepts; and methodologies required to understand the interrelationships of the natural world. The course helps students identify and analyze natural and human-induced environmental problems. It enables them to learn how to assess the risks associated with these problems and evaluate alternative solutions for resolving and preventing them. To accomplish this goal; the AP Environmental Science Course and Exam Description defines concepts; skills; and understandings required by representative colleges and universities for granting college credit and placement. This class is designed to explore environmental issues as well as prepare students for the AP Environmental Science exam in a lab environment. Topics will include; but not limited to; the areas

of ecosystems measurements; human populations; pollution; energy use; forestry issues; global health; agriculture (GMOs); and conservation biology. Students will gain lab skills that directly translate to job skills in today's growing biotech and biomed industries. Ramifications and solutions to these problems are discussed

Chemistry (Honors) - 1 Credit - SCI371/SCI372

Prerequisite: None

Chemistry is a pre-college course that explores the world of elements, molecules and chemical reactions. This course is an algebra-based lab science course that takes real-world data and applies mathematical concepts to discover patterns within the physical world. This course explores the concepts of nomenclature, the mole, stoichiometry, thermochemistry, atomic theory, bonding, gas laws, phases of matter at an atomic level, solubility, acids and bases, equilibrium and introduction to organic chemistry. Major assignments in this course include: major lab activities in every unit, end of unit tests, college prep lab notebook, end of term summative final. By the end of this course, students will be able to demonstrate an understanding of major chemical properties and processes, plan and conduct algebra based scientific investigation, and communicate scientific results via lab reports.

AP Chemistry - 1 Credit (AP) - SCI381/SCI382

Prerequisite: Successful completion of Chemistry Honors & recommended grade of B or higher in Algebra 2

The AP Chemistry course covers material typically presented in a college general chemistry course. The AP Chemistry course is designed to be taken only after a successful completion of a first course in high school chemistry. Students will be prepared to take the AP examination in May. The AP course differs qualitatively from the usual first year secondary school course in chemistry with respect to the textbook used, the topics covered, the emphasis on chemical calculations and the mathematical formulation of principles, and the kind of laboratory work done by the student. The AP course offers the laboratory experience equivalent to that of a typical college course. Students in this course should attain a depth of understanding of fundamentals and a reasonable competence in dealing with chemical problems. The course should contribute to the development of the students' ability to think clearly and to express their ideas, orally and in writing, with clarity and logic. This course is an algebra-based lab science. Students may potentially receive credit and/or advanced placement from the university they plan to attend.

STEM Labs Offered in Junior Year

STEM Labs are thematic, interdisciplinary instructional blocks organized around career clusters and pathways. These courses combine rigorous academics and “real world” application of learning. Initial programs will focus on Science, Technology, Engineering and Math (STEM) career pathways to prepare students for postsecondary work in the STEM fields. The 11th Grade English class integrates and delves into a wide range of themes and research that supports the 11th grade STEM Labs.

Environmental Engineering and Sustainable Design (EESD) – 1.5 Credit - CDC621/CDC622

.5 Credit/1st Semester, 1.0 Credit/2nd Semester

Prerequisite: Current Junior

The cause, effect, and science of global climate change, along with a strong emphasis on engineering and sustainability solutions, are the central themes of this course. Students will explore green jobs and solutions to a number of environmental issues through design, efficiency, and engineering projects. Topics covered include architectural design, green construction, alternative energy, water and waste management, transportation system design, public land use, ecosystem services, and urban design and community planning. This class utilizes specific tech skills; such as drafting, energy auditing, 2D and 3D design, model building, landscape design, engineering testing, and systems thinking. Student groups will be encouraged to enter their projects in several national and regional contests.

Optional UWHS (CHS) Credit

UW Course Equivalency –

- **ATMOS100: Climate, Justice & Energy Solutions (5 college credits):** *Presents visions of the future when the climate crisis is solved. Describes paths toward reaching these goals. Solutions include building a resilient society with clean energy, sustainable agriculture, climate justice and a just transition for workers.*
 - **Cost- free | Website:** <https://www.uwhs.uw.edu/courses/science/>

Forensics & AP Psychology – 2.5 Credit - CDC821/CDC822 and CVS561/CVS562

Prerequisite: Current Junior

Forensic Science/Psychology is a junior level course that integrates AP Psychology and Forensic Science and offers multiple opportunities for students to engage in problem-based learning activities such as working crime scenes, investigating a decomposing pig outside to determine the time of death of the deceased victim in the 2nd semester lab final. Students will learn extensively about drugs and how they affect the brain during the Toxicology unit as part of the BIOL100: Brain and Addiction course through the University of Washington. Because this integrated lab has a heavy focus on neuroscience, students will seek to understand how the brain works and apply that knowledge to computing and problem-solving.

*Forensic Science -1.5 Credit - CDC821/CDC822
1.0 Credit/1st Semester, .5 Credit/2nd Semester*

Forensic Science offers students multiple opportunities to engage in problem-based learning, apply forensic science knowledge to engineer solutions to areas of Forensic Science that can be strengthened, and provides students with innovative thinking and 21st Century skills to be successful in STEM occupations. Students will study units in fingerprinting, medical examiner/autopsy analysis, trace evidence, toxicology, blood, anthropology and entomology, and crime scenes. When coupled with psychology, students may participate in potential job shadows or internships at places such as the Washington State Crime Lab or the King County Latent Finger Printing Lab.

Optional UWHS (CHS) Credit

UW Course Equivalency –

- **BIOL100: Introductory Biology: Addiction and the Brain (5 college credits)** : *Explore the effects of a range of mood-altering drugs to learn about brain structures, brain chemicals and genetic differences in people's response to drugs.*
 - **Cost-free | Website:** <https://www.uwhs.uw.edu/courses/science/>

AP Psychology-1 Credit (AP) - CVS561/ CVS562

Students will apply understanding of the brain and psychology to solve problems and analyze criminal behavior and crime trends. Students will cover the entire AP curriculum, with special focus on brain research and neuroscience, FBI profiling, abnormal psychology and psychological disorders, social psychology, jury selection, personality profiling, and sensation/perception. Other AP units of student interest include States of Consciousness, Learning, Cognition, Motivation and Emotion, and Development.

Independent Research - 1 Credit - ISC101/ISC102

Prerequisite: Current Junior.

Students will perform unique, authentic research and compete in the Central Sound Regional Science and Engineering Fair (CSRSEF) and Washington State Science and Engineering Fair (WSSEF) after successful completion of this course. It is recommended that during the summer before taking this course, students secure summer research with a mentor scientist if they wish to maintain a competitive advantage and qualify for the International Science and Engineering Fair (ISEF) in May as well. Students will receive instruction and have time to work in class on their research, which includes finding a mentor, finding and reading scientific articles, completing literature reviews, writing their research plan, completing their fair paperwork, conducting their experiment, statistically analyzing their data, working on their photoshop document for their trifold poster board, writing their research paper and plotter printing. After the CSRSEF and WSSEF competitions in March, students will be working on developing partnerships with the school and greater Puget Sound STEM community.

STEM Labs Offered in Senior Year

STEM Labs are thematic, interdisciplinary instructional blocks organized around career clusters and pathways. These courses combine rigorous academics and “real world” application of learning. Initial programs will focus on Science, Technology, Engineering and Math (STEM) career pathways to prepare students for postsecondary work in the STEM fields. The 12th Grade English class integrates and delves into a wide range of themes and research that supports the 12th grade STEM Labs.

Advanced Physics Lab - 2 Credit (AP) - SCI485/SCI486 and SCI489/SCI490 *Prerequisite: Current Senior, Concurrent Enrollment in/or completion of AP Calculus AB, and completion of Honors Physics*

The senior level Advanced Physics Lab integrates AP Physics C: Mechanics, and AP Physics C: Electromagnetism. This course is an in-depth investigation into the physical universe. It will include extensive mathematical modeling of physical phenomena and calculus-based problem solving. Mind expanding theoretical material will be balanced with hands-on lab investigations and projects. Projects will form the bridge to allow students to creatively integrate their physics understanding, lab skills and language arts studies. Students will participate in a major group project on a physics topic of their choice for the final unit of the year. This class is designed to prepare students for future university level science and engineering studies. In particular, it will lay the analytical foundation for mechanical and electrical engineering.

Advanced Physics C: Mechanics - 1 Credit (AP) - SCI485/SCI486

The first semester will focus on classical mechanics: motion, forces, momentum, energy, simple harmonic motion and Newtonian Gravity. Special emphasis will be placed on rotational physics. The development of advanced mathematical problem-solving ability (including calculus) will be the key goal of this course. Advanced physics labs will look closely at torque, angular momentum, universal gravitation and the fundamental conservation laws. Students will be prepared to take the AP Physics C: Mechanics exam in May.

Advanced Physics C: Electromagnetism - 1 Credit (AP) - SCI489/SCI490

The second semester will focus on Maxwell’s Equations of Electromagnetism. Calculus based problem solving beginning with Gauss’ Law, and continuing with the other three primary laws of electromagnetism will be at the heart of students’ work. Students will be challenged to use mental models and abstract reasoning as they grapple with the flux of electric and magnetic fields. Advanced physics labs will include examining electric and magnetic interactions in detail, for example by measuring the charge to mass ratio for the electron. Students will also get plenty of hands-on lab time to become familiar with AC and DC circuits and the tools of electronics including digital multi-meters, function generators. Students will be prepared to take the AP Physics C Electromagnetism exam in May.

Biomedical Engineering Lab - 2.4 Credit - CDC561/CDC562 and SCI801/SCI802

Prerequisite: Current Senior; AP Biology or B or higher in Honors Biology

The STEM Lab Concentration in Biomedical Engineering is a course that integrates Human Anatomy and Physiology, Advanced Biomedical Engineering, and offers opportunities for students to engage in systems biology problem solving. This course addresses the “Good Health and Well-being” and “Reduced Inequalities” Sustainable Development Goals adopted by the United Nations. Students will use the knowledge gained in Human Anatomy and Physiology to research and communicate medical information to improve the quality and efficiency of healthcare. Students will work to improve biomedical technologies and medicines for healthcare patients. As a part of this STEM lab concentration, students will be encouraged to enter projects in national competitions. As a part of this STEM lab concentration, students will be encouraged to enter projects in national competitions.

*Anatomy & UW in the HS BIOL 118 & 119 Physiology - 1.4 Credit - CDC561/CDC562
.7 Credit/Semester*

This course is an in-depth study of human anatomy and physiology, focusing on the eleven human body systems: integumentary/tissues, skeletal, muscular, digestive, urinary, cardiovascular, respiratory, nervous, reproductive, endocrine, and lymphatic. Primary study within this course includes terminology associated with the human body and the relationships between the structure and function of organ systems. Lab exercises in this course include animal dissections, microscopic analysis, and physiological tests with Vernier probeware. This course will be taken in conjunction with the Biomedical Engineering course program to provide students with the knowledge needed to design and develop medical advances.

Optional UWHS (CHS) Credit

UW Course Equivalency –

- **BIOL118 & 119: Survey of Physiology + Physiology Lab (7 college credits)** *This course is a survey of human physiology.*
 - **Cost-free:** | **Website:** <https://www.uwhs.uw.edu/courses/science/>

Advanced Biomedical Engineering Lab -1 Credit (Accelerated) - SCI801/SCI802

This course is an extension of the Human Anatomy and Physiology course. Students will critically evaluate current medical practices, engage in communication concerning ethics associated with health, and research and develop improvements in medical technology. This course will focus on the areas of Bioethics, Genetic Engineering, Clinical Applications, Pharmaceutical Drug Development & Manufacturing, Cancer Detection and Treatment, Tissue Engineering, Biomechanics and Prosthetics, Immunoengineering, Cardiovascular Bioengineering, and Digestive Engineering. Biomedical Engineering will incorporate partnerships with local organizations and businesses and will require students to work collaboratively in problem-based learning activities.

Health

Health - .5 Credit – HEA511

Prerequisite: Senior standing prioritized

Students will develop into health literate individuals who are able to access, understand, appraise, apply and advocate for health information and services in order to maintain or enhance one's own health and the health of others. In this semester-long course, the class will pursue a healthy lifestyle around specific topics that include: Wellness, Safety, CPR and AED, Nutrition, Sexual Health, Social Emotional Health, Mental and Behavioral Health, and Substance Use and Abuse. Health-literate people are able to address their own health needs along with the needs of others – both now and in the future as their needs change throughout their lives.

Other Electives

Organization/Executive Functioning/Study Skills - 1 Credit – ELE011/ELE012

Required: Enrollment by signature of IEP Provider

This course is designed for students with IEPs to receive direct instruction on specific goals and objectives based on their IEPs. Time will be allocated for implementation and demonstration of acquired skills utilizing curriculum from general education classes. Direct teaching of study skills and strategies for use in high school and beyond will also be integrated.

Leadership I - 0.5 Credit – ELE201/ELE202

0 Period twice weekly

Required: Elected ASB Officers only

This year-long course is designed to give students the opportunity to learn the ways in which they can become successful leaders in their school and community. This course will instruct students in the various methods and techniques for planning, implementing and evaluating projects related to school activities as well as challenge them to build their character and strive to be the best possible version of themselves. Students will be expected to be at all activities as well as additional preparation time outside of class hours.

Leadership II - 0.25 credit – ELE204/ELE205

0 Period once weekly

Required: Link Crew only

This year-long course builds positive school culture through character development, collaboration, project planning and more. Leadership Development combines the study of leadership styles and theories with reflection and activities to help students understand themselves as individuals and develop the skills they need to work in groups and become successful leaders in their school and community. Students run Freshman orientation, Freshman camp and other activities throughout the year for the Freshman class, helping them acclimate to high school and the Tesla STEM culture as well as serving as mentors.

Peer Tutoring – 0.5 Credit/semester - ELE101/ELE102

Prerequisite: Current Junior or Senior and Teacher/Staff Approval

This elective is suitable for students who are looking to enhance learning for other students at Tesla. Students approved to be a peer tutor will be matched with an instructor in a subject the student is knowledgeable in and will be in the instructor's classroom on a daily basis to support students needing extra academic assistance. This elective is suitable for students who have met graduation and their personal college application course requirements and who work well with others. Students interested in becoming a peer tutor will need to talk to their counselor to secure approval for this elective credit. Preference is for a full-year commitment, but a Fall/Spring semester commitment is considered as well for students completing Health at STEM during one semester and looking for a meaningful experience for the remaining semester.