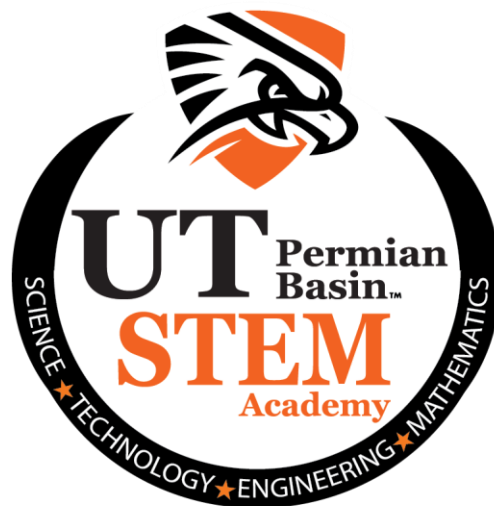


High School Planning Packet & Course Descriptions



2020 - 2021

UTPB STEM Academy High School Course Plan

Core Discipline	Distinguished Level of Achievement with STEM Endorsement - 26 Credits
English 4 credits	Four credits must consist of: <ul style="list-style-type: none"> • English I • English II • English III or Dual Credit equivalent 1301 & 1302 • Advanced English Course- English IV or Dual Credit course equivalent 2322 & 2323
Mathematics 4 credits	Four credits must consist of: <ul style="list-style-type: none"> • Algebra I • Geometry • Algebra II • Financial Math or • Pre-Calculus or Dual Credit course equivalent 2412 & 2413 • Dual Credit course equivalent based on degree plan
Science 4 credits	Four credits must consist of: <ul style="list-style-type: none"> • Biology • Chemistry • Physics • Local Science course such as Environment Science • Dual Credit course equivalent based on degree plan
Social Studies & Economics 3-4 credits	Three credits must consist of: <ul style="list-style-type: none"> • World Geography • World History • US History or Dual Credit course equivalent 1301 & 1302 Two one-half credits must consist of: <ul style="list-style-type: none"> • US Government or Dual Credit course equivalent PoliSci 2305 & 2306 • Economics
Fine Arts 1 credit	One credit from the following: <ul style="list-style-type: none"> • Art • Dual credit course equivalent Music1301
Physical Education 1 credit	One credit from the following: <ul style="list-style-type: none"> • Team or Individual Sports PE • Dual credit course equivalent through Odessa College Kin 1106 & Kin 1164
Language Other Than English (LOTE) 2-3 credits	Two-Three credits must consist of: <ul style="list-style-type: none"> • Computer Science 1 • Computer Science 2 • Computer Science 3 * Performance Acknowledgement
Elective/Endorsement 6-7	Six or Seven from the following: <ul style="list-style-type: none"> • Engineering • Biomedical Science • Computer Programming/CyberSecurity • Gateway PLTW • Internships and Career Prep • Additional PE course • Fine Arts or Dual Credit course equivalent • Dual Credit course equivalent (Soc, Leadership, Psych, PoliSci, Speech) • College Transitions • Special Topics in Social Studies • Economics Advances studies (Dual Credit course – Micro Economics)
Endorsements	Students entering 9th grade must choose and complete curriculum requirements from one of the following endorsements: <ul style="list-style-type: none"> • STEM • Multidisciplinary Studies

State Assessment Requirements For Graduation	<p><i>Students must satisfactorily pass following STAAR End-of-Course assessment (EOC).</i></p> <ul style="list-style-type: none"> • English I • English II • Algebra I • Biology • US History
Performance Acknowledgements	<p><i>Outstanding Performance in</i></p> <ol style="list-style-type: none"> 1. Dual Credit 2. Bilingualism 3. PSAT, ACT or SAT 4. Business or industry certificate <p>* see Performance Acknowledgement Criteria</p>

Foundation Graduation Program

Foundation High School Program – 22 Credits	Foundation High School Program + Endorsements – 26 Credits
4 English Credits: ELA, I, II, III, one advanced English course	4 English Credits: ELA, I, II, III, one advanced English course
3 Math Credits: Algebra I, Geometry, one credit in any authorized math course	4 Math Credits: Algebra I, Geometry, two credits in any authorized advanced math course
3 Science Credits: Biology, two credits in any authorized advanced science course	3 or 4 Science Credits: Biology, Chemistry, Physics, Additional science credit
3 Social Studies Credits: World Geography or World History, U.S. History, Government, Economics	4 Social Studies Credits: World Geography or World History, U.S. History, Government, Economics
2 World Language or Computer Programming Credits	2 or 3 World Language or Computer Programming Credits
1 Physical Education Credit	1 Physical Education Credit
1 Fine Arts Credit	1 Fine Arts Credit
5 Elective Credits	7 Elective Credits

STEM (Science, Technology, Engineering and Math)

Students may earn a STEM endorsement by selecting and completing the requirements from among these 5 options.

Note: Algebra II, Chemistry and Physics are required for the STEM endorsement regardless of the option the student selects from below.

Option 1: Computer Programming/CyberSecurity

Students take 4 computer programming courses

- Foundations of Cybersecurity
- Internetworking Technologies 1
- Advanced Computer Science 1 DC, or Digital Forensics
- Advanced Computer Science 1 DC, Digital Forensics, or Project-Based Research

Option 2: CTE Courses (PLTW or Engineering Your World)

Students earn four CTE credits by taking at least two courses in the same cluster

- Biomedical four courses (see course descriptions)
- Engineering - four courses (see course descriptions)

Option 3: Math

Students take five math courses

- Algebra I
- Geometry
- Algebra II
- Two upper level courses

Option 4: Science

Students take five science courses

- Biology
- Chemistry
- Physics
- Two upper level courses through DC

Option 5: Combination

Multidisciplinary Studies

Students may earn a Multidisciplinary Studies endorsement by selecting and completing the requirements from among these options.

Option 1: Four by Four

Option 2: Dual Credit

Option 3: CTE

Dual Credit Program

Admittance Requirements

Step 1: TSI Student Requirement

Reading	351
Math	350
Writing	5 on essay OR 4 with a 340 on multiple choice

(R/W for all non-math courses; M for all math courses)

Score Exemptions

ACT	SAT*	STAAR (EOC)
23 COMPOSITE	480 EBRW**	4000 English II
19 English	530 Math	4000 Algebra I
19 Math	*Must meet both sections	
*Must meet all 3 sections	**English Based Reading/Writing	

Counselors must submit all required documentation below before applications are processed:

1. TSI (or exemption) scores
2. High school transcript


Dual Credit

Area	Core Curriculum Course Option	Aligned High School Courses
English	*ENGL 1301 : Composition I	Eng 3 part 1
	*ENGL 1302: Composition II	Eng 3 part 2
	*ENGL 2322: British Literature to 1800	Advanced English part 1
	*ENGL 2323: British Literature since 1800	Advanced English part 2
	*ENGL 2327: American Literature to 1865	Advanced English part 1
	ENGL 2328: American Literature since 1865	Advanced English part 2
History	*HIST 1301: US to 1877	US History part 1
	*HIST 1302: US since 1877	US History part 2
	PLSC 2305 American National Politics	Government
	PLSC 2306 State and Local Politics	Electives
Fine Arts	*MUSC 1301: Jazz, Pop, and Rock	Fine Arts
	ART 1301: Art Appreciation	Fine Arts
	Theatre 1	Fine Arts
Social/Behavioral	*PSYC 1301: Intro to Psychology	Elective
	*SOC 1301: Intro to Sociology	Elective
Speech	COMM 1315: Intro to Public Speaking	Elective
Mathematics	MATH 1314: College Algebra	Adv Math
	MATH 2412: Pre-Calculus	Adv Math
	MATH 2413: Calculus I	Adv Math
Language Other Than English	SPAN 1411: Beginning Spanish I	LOTE part 1
	SPAN 1412: Beginning Spanish II	LOTE part 2
	SPAN 2311: Second Year Spanish I	Adv LOTE part 1
	SPAN 2312: Second Year Spanish II	Adv LOTE part 2
	ENGR 1322: Engineering Design & Problem Solving	Elective

STEM 4-Year Plan

Grade	8 th	Freshman 9 th	Sophomore 10 th	Junior 11 th	Senior 12 th
English	8 th ELA English I	English I or English II	English II or DC 1301 & 1302	English III or DC 1301 & 1302 or DC 2322 & 2323	Advanced English or DC 1301 & 1302 or DC 2322 & 2323
Mathematics	8 th Math Algebra I	Algebra I or Geometry	Geometry or Algebra II	Algebra II or PreCal or DC 2312 & 2313	Financial Mathematics or PreCal or DC 2412 & 2313 or DC based on degree plan
Science	8 th Grade Science	Biology	Chemistry	Physics	Local Science- Earth and Space or Astronomy Or DC based on degree plan
Social Studies	U.S. History	W Geography	W. History	U.S. History or DC US History 1301 & 1302	Government & Economics Or DC Economics & DC PLSC 2305

Physical Ed	PE	Individual Sports or DC equivalent OC Kin 1106 & Kin 1164			
LOTE		Comp Sci I or Comp Sci II	Comp Sci II or Comp Sci III	Comp Sci III or DC CS 1	
Fine Arts		DC Music 1301 or Art			
Electives/ Endorsements					
Computer Programming & Gateway PLTW	Med Det Flight & Space Science of Tech Environmental Science Auto & Rob Des & Mod	Comp Sci 1 and, Foundations of Cybersecurity	Comp Sci 2 and, Internetworking Technologies 1	Robotics 1, DC CS 1, or Digital Forensics	Robotics 2, DC CS1, or Project-Based Research

Engineering		Engineering Your World 1	Engineering Your World 2	Engineering Your World 3, or Intro to Engineering Design (IED).	Engineering Your World 4, DC Engineering, or Engineering Design and Presentation 1
Biomedical Sciences		Principals of Biomed Science	Human Body Systems	Medical Interventions	Biomedical Innovation, Scientific Research and Design, or DC Biology
Speech (elective)		DC COMM 1315			
Optional				DC courses based on degree plan or Industry Internships	DC courses based on degree plan or Industry Internships

Below are sample occupations under the STEM endorsement. Not all STEM-related occupations are included here (there are hundreds), and some of those listed below may fall under other endorsements as well. Talk to your school Counselor for more information.

UTPB STEM GPA SCALES

	Core Subjects	CIE	Dual Credit
Numeric	4.0 Scale	5.0 Scale	6.0 Scale
			*Other
97-100	4.0	5.0	6.0
93-96	3.75	4.75	6.0
90-92	3.5	4.5	6.0
85-89	3.25	4.25	5.0
80-84	3.0	4.0	5.0
75-79	2.5	3.5	4.0
70-74	2.0	3.0	4.0
65-69	1.5	2.5	3.0
60-64	1.0	2.0	3.0
0-59	0.0	0.0	0.0

Example (High School Transcript):

COURSE	NUMERIC	UNWEIGHTED GRADE POINTS FROM ABOVE	WEIGHTED GRADE POINTS FROM ABOVE	CREDITS	UNWEIGHTED GRADE POINTS X CREDITS	WEIGHTED GRADE POINTS X CREDITS
Algebra I	98	4.0	4.0	1	4.0	4.0
World History	89	3.25	3.25	1	3.25	3.25
Biology	90	3.5	3.5	1	3.5	3.5
English	78	2.5	2.5	1	2.5	2.5
Computer Science (CSP)	80	3.0	4.0	1	3.0	4.0
Intro to Engineering (IED)	85	3.25	4.25	1	3.25	4.25
Dual Credit Art	B	3.0	5.0	1	3.0	5.0
TOTALS				7	22.5	26.5

22.5

7

3.21

Total Unweighted Grade Points / Total Credit Hours = Unweighted GPA

26.5

7

3.79

Total Weighted Grade Points / Total Credit Hours = Weighted GPA

Notification Requirements

Concerning Top 10% Graduation

In compliance with Texas Education Code (§ 51.803) requirements all students are hereby notified that each general academic teaching institution shall admit an applicant for admission to the institution as an undergraduate student if the applicant graduated with a grade point average in the top 10 percent of the student's high school graduating class in one of the two school years preceding the academic year for which the applicant is applying for admission.

*Exceptions exist for UT Austin. Please see Education Code for details.

Concerning FAFSA, TAFSA, or Exemptions (HB 3 updates)

All students beginning with the graduating class of Spring 2021 will be required to complete the Federal Application for Federal Student Aid (FAFSA), Texas Application for State Financial Aid (TAFSA), or complete a state approved exemption form.

Speech Content

If speech is not taken through dual credit, the speech content (TEKS) will be imbedded in English IV.

Advanced Courses

The courses listed below are those approved as advanced courses by the school district.

*These are **not** the exempt list for UIL purposes

Environmental Science

Special Topics in Social Studies (any time taken)

Any course taken through dual credit

Pathway courses (ex: Programming, BioMed, and Engineering)

Financial Math

Career Prep 1 and 2

Practicum in STEM (Internships)(1st and/or 2nd time taken)

Social Studies Advanced Studies

Economics Advanced Studies

Course Description

Algebra 1

Offered in: 8-9

Credits: 1

Prerequisite: Grade 8 Mathematics, or meet advancement criteria.

In Algebra I, students will build on the knowledge and skills for mathematics in Grades 6-8, which provide a foundation in linear relationships, number and operations, and proportionality. Students will study linear, quadratic, and exponential functions and their related transformations, equations, and associated solutions. Students will connect functions and their associated solutions in both mathematical and real-world situations. Students will use technology to collect and explore data and analyze statistical relationships. In addition, students will study polynomials of degree one and two, radical expressions, sequences, and laws of exponents. Students will generate and solve linear systems with two equations and two variables and will create new functions through transformations.

Algebra II

Offered in: 10-11

Credits: 1

Prerequisite: Algebra 1

In Algebra II, students will build on the knowledge and skills for mathematics in Kindergarten-Grade 8 and Algebra I. Students will broaden their knowledge of quadratic functions, exponential functions, and systems of equations. Students will study logarithmic, square root, cubic, cube root, absolute value, rational functions, and their related equations. Students will connect functions to their inverses and associated equations and solutions in both mathematical and real-world situations. In addition, students will extend their knowledge of data analysis and numeric and algebraic methods.

Biology

Offered in: 9

Credits: 1

Prerequisite: none

In Biology, students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Biology study a variety of topics that include: structures and functions of cells and viruses; growth and development of organisms; cells, tissues, and organs; nucleic acids and

genetics; biological evolution; taxonomy; metabolism and energy transfers in living organisms; living systems; homeostasis; and ecosystems and the environment.

Career Prep 1

Offered in: 11th and 12th

Prerequisites: Completion, and acceptance, of CTE handbook paperwork. Course can be taken for 1 or 2 credits.

Career Preparation serves as a capstone work-based learning course for programs of study. It is a work-site learning course related careers. Classroom learning and work-site learning provide career and related training by alternating group and individual instruction in the classroom with the work-site training experiences at an approved training station in the local community.

Career Prep 2

Offered in: 12

Prerequisites: Career Prep 1. Completion, and acceptance, of CTE handbook paperwork. Course can be taken for 1 or 2 credits.

Career Preparation II serves as a capstone work-based learning course for programs of study. It is a work-site learning course related careers. Classroom learning and work-site learning provide career and related training by alternating group and individual instruction in the classroom with the work-site training experiences at an approved training station in the local community.

Chemistry

Offered in: 10

Credits: 1

Prerequisite: one unit of high school science and Algebra I

In Chemistry, students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students study a variety of topics that include characteristics of matter, use of the Periodic Table, development of atomic theory and chemical bonding, chemical stoichiometry, gas laws, solution chemistry, thermochemistry, and nuclear chemistry. Students will investigate how chemistry is an integral part of our daily lives.

College Transitions

Offered in 10th – 12th

Prerequisites: None

College Transition is designed to equip students with the knowledge, skills, and abilities necessary to be active and successful learners, both in high school and in college. Students examine numerous research based learning strategies that are proven to lead to academic success such as goal setting, effective time management, handling stress, note taking, active reading, test-taking strategies, and conducting research. In the College Transition course, students will research financial scholarships and grant opportunities, complete applications, and explore technical schools, colleges, and universities

College Prep English and Math

Offered in: 12 only

Credits: 1 English and 1 Math (both are considered advanced courses)

Math: This course is a college readiness course. Students may take this course for one of the following reasons: (1) have not met satisfactory performance on the Algebra I EOC; or (2) have not taken and passed the TSI college readiness assessment; or (3) have not taken high school course work that has adequately prepared them for college. This course is held on campus. An approved online curriculum will be used in this course. Students who pass this course for the full year are exempt from the TSI for UTPB entrance requirements only. This course does not exempt a student from the requirements of meeting satisfactory standards on the Algebra I, EOC assessments required for high school graduation

English: This course is a college readiness course. Students who pass this course for the full year are exempt from the TSI for UTPB entrance requirements. Students may take this course for one of the following reasons: (1) graduation requirement for college readiness; or (3) preparation for college. This course is held on the high school campus. An approved online curriculum will be used in this course. Students who pass the full year course are eligible to enroll in a course at UTPB. This course does not exempt a student from the requirements of meeting satisfactory standards on the English I and English II EOC assessments required for high school graduation.

Computer Science I

Offered in: 9

Credits: 1

Prerequisite: Algebra 1

Computer Science I will foster students' creativity and innovation by presenting opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve the problems presented throughout the course. Through data analysis, students will identify task requirements, plan search strategies, and use computer science concepts to access, analyze, and evaluate information needed to solve problems. By using computer science knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by

practicing integrity and respect. Students will gain an understanding of the principles of computer science through the study of technology operations, systems, and concepts.

Computer Science II

Offered in: 9 or 10

Credits: 1

Prerequisite: Algebra I and Computer Science I

Computer Science II will foster students' creativity and innovation by presenting opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve the problems presented throughout the course. Through data analysis, students will identify task requirements, plan search strategies, and use computer science concepts to access, analyze, and evaluate information needed to solve problems. By using computer science knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will gain an understanding of computer science through the study of technology operations, systems, and concepts.

Computer Science III

Offered in: 10 or 11

Credits: 1

Prerequisite: Algebra I and Computer Science II

Computer Science III will foster students' creativity and innovation by presenting opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve the problems presented throughout the course. Through data analysis, students will identify task requirements, plan search strategies, and use computer science concepts to access, analyze, and evaluate information needed to solve problems. By using computer science knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will gain an understanding of advanced computer science data structures through the study of technology operations, systems, and concepts.

Digital Forensics

Offered in: 9th – 12th

Prerequisites:

Digital forensics is an evolving discipline concerned with analyzing anomalous activity on computers, networks, programs, and data. As a discipline, it has grown with the emergence of a globally-connected digital society. As computing has become more sophisticated, so too have the abilities of malicious agents to access systems and private information. By evaluating prior incidents, digital forensics professionals have the ability to investigate and craft appropriate responses to disruptions to corporations, governments, and individuals. Whereas cyber security takes a proactive approach to information assurance to minimize harm, digital forensics takes a reactive approach to incident response.

Earth and Space**Offered in: 12th****Credits:****Prerequisite: Biology, Chemistry, Physics**

The Earth and Space Science course is a course focusing on the study of space, geologic structures and forces, the waters on our planet, and the atmospheric forces that shape our world. Students will explore the Earth's spheres including the geosphere, hydrosphere, cryosphere, atmosphere, and the cycles of the Earth such as the water and carbon cycle. Students will learn about scientific inquiry, geologic time, space exploration, the solar system, and the universe.

Economics Advanced Studies**Offered in: 12th****Prerequisites/Notes: Course will only be taken in connection with dual credit economics with IHE.**

This course is designed with senior economics. The course is Microeconomics with the IHE. This course provides organization, communication, and interpretation of fundamental, analytic concepts of economic theory and practice. The course also emphasizes economic theory and practice, and includes a study of money and banking, national income and employment, economic growth, public spending and international economy.

Economics with Emphasis on the Free Enterprise System and its Benefits**Offered in: 12th****Prerequisite: World Geography, World History, US History**

Economics with Emphasis on the Free Enterprise System and Its Benefits is the culmination of the economic content and concepts studied from Kindergarten through required secondary courses. The focus is on the basic principles concerning production, consumption, and distribution of goods and services (the problem of scarcity) in the United States and a comparison with those in other

countries around the world. Students analyze the interaction of supply, demand, and price. Students will investigate the concepts of specialization and international trade, economic growth, key economic measurements, and monetary and fiscal policy. Students will study the roles of the Federal Reserve System and other financial institutions, government, and businesses in a free enterprise system. Types of business ownership and market structures are discussed. The course also incorporates instruction in personal financial literacy. Students apply critical-thinking skills using economic concepts to evaluate the costs and benefits of economic issues.

Engineering Design and Presentation 1 and 2

Offered in: 12th

Prerequisites: Algebra 1, Principles of Applied Engineering (EYW 1), Introduction to Engineering Design (IED).

Engineering Design and Presentation I is a continuation of knowledge and skills learned in Principles of Applied Engineering. Students enrolled in this course will demonstrate knowledge and skills of the design process as it applies to engineering fields using multiple software applications and tools necessary to produce and present working drawings, solid model renderings, and prototypes. Students will use a variety of computer hardware and software applications to complete assignments and projects. Through implementation of the design process, students will transfer advanced academic skills to component designs. Additionally, students explore career opportunities in engineering, technology, and drafting and what is required to gain and maintain employment in these areas. Students shall be awarded one credit for successful completion of this course.

This course is designed to serve as a capstone in our engineering pathway. If additional elective credits are needed for the student the course can be taken for a second credit with approval from instructor, and counselor. The principal has final say on approval of the second credit.

English I

Offered in: 8-9

Credits: 1

Prerequisite: 8th Grade Reading STAAR

The English Language Arts and Reading Texas Essential Knowledge and Skills (TEKS) are organized into the following strands: Reading, where students read and understand a wide variety of literary and informational texts; Writing, where students compose a variety of written texts with a clear controlling idea, coherent organization, and sufficient detail; Research, where students are expected to know how to locate a range of relevant sources and evaluate, synthesize, and present

ideas and information; Listening and Speaking, where students listen and respond to the ideas of others while contributing their own ideas in conversations and in groups; and Oral and Written Conventions, where students learn how to use the oral and written conventions of the English language in speaking and writing. The standards are cumulative--students will continue to address earlier standards as needed while they attend to standards for their grade. In English I, students will engage in activities that build on their prior knowledge and skills in order to strengthen their reading, writing, and oral language skills. Students should read and write on a daily basis.

English II

Offered in: 9-10

Credits: 1

Prerequisite: English I

The English Language Arts and Reading Texas Essential Knowledge and Skills (TEKS) are organized into the following strands: Reading, where students read and understand a wide variety of literary and informational texts; Writing, where students compose a variety of written texts with a clear controlling idea, coherent organization, and sufficient detail; Research, where students are expected to know how to locate a range of relevant sources and evaluate, synthesize, and present ideas and information; Listening and Speaking, where students listen and respond to the ideas of others while contributing their own ideas in conversations and in groups; and Oral and Written Conventions, where students learn how to use the oral and written conventions of the English language in speaking and writing. The standards are cumulative--students will continue to address earlier standards as needed while they attend to standards for their grade. In English II, students will engage in activities that build on their prior knowledge and skills in order to strengthen their reading, writing, and oral language skills. Students should read and write on a daily basis.

English III

Offered in: 10-11

Credits: 1

Prerequisite: English II

The English Language Arts and Reading Texas Essential Knowledge and Skills (TEKS) are organized into the following strands: Reading, where students read and understand a wide variety of literary and informational texts; Writing, where students compose a variety of written texts with a clear controlling idea, coherent organization, and sufficient detail; Research, where students are expected to know how to locate a range of relevant sources and evaluate, synthesize, and present ideas and information; Listening and Speaking, where students listen and respond to the ideas of others while contributing their own ideas in conversations and in groups; and Oral and Written Conventions, where students learn how to use the oral and written conventions of the English language in speaking and writing. The standards are cumulative--students will continue to address earlier standards as needed while they attend to standards for their grade. In English III, students will engage in activities that build on their prior knowledge and skills in order to strengthen their reading, writing, and oral language skills. Students should read and write on a daily basis.

English IV

Offered in: 11-12

Credits: 1

Prerequisite: English III

The English Language Arts and Reading Texas Essential Knowledge and Skills (TEKS) are organized into the following strands: Reading, where students read and understand a wide variety of literary and informational texts; Writing, where students compose a variety of written texts with a clear controlling idea, coherent organization, and sufficient detail; Research, where students are expected to know how to locate a range of relevant sources and evaluate, synthesize, and present ideas and information; Listening and Speaking, where students listen and respond to the ideas of others while contributing their own ideas in conversations and in groups; and Oral and Written Conventions, where students learn how to use the oral and written conventions of the English language in speaking and writing. The standards are cumulative--students will continue to address earlier standards as needed while they attend to standards for their grade. In English IV, students will engage in activities that build on their prior knowledge and skills in order to strengthen their reading, writing, and oral language skills. Students should read and write on a daily basis.

EYW I: Engineering Design & Analysis

Offered in: 9th

Prerequisite: None

Engineering Design & Analysis engages students in authentic engineering practices and inspires them to embrace an engineer's habits of mind. Collaborative, student-directed projects build resilient problem-solving skills and empower students to think like engineers, to adopt engineering processes, and to pursue engineering disciplines for the betterment of our world.

EYW II: Engineering Applications of Computer Science

Offered in: 10th

Prerequisite: EYW I: Engineering Design & Analysis

Engineering Applications of Computer Science comprises a combination of project-based, socially relevant design challenges and explorations that introduce students to key computing principles in the context of engineering. Students employ engineering processes, skills, and habits of mind to solve more complex challenges that rely on the computing, programming, data representation and analysis, algorithmic thinking, and modeling skills that are so important in engineering.

Financial Math

Offered in: 11-12th

Credits:

Prerequisite: Algebra I, Geometry, Algebra II

Students will learn and demonstrate an understanding of the various financial institutions, types of accounts and statements, cash, checks, credit cards, debit cards, and electronic funds transfers, and compare various financial services offered in their community. Students will create and/or use graphs, diagrams, text or other representations to explain and illustrate the advantages and disadvantages of interest-bearing accounts, compound interest situations, and to demonstrate ways to calculate the time value of money. Students will discuss and identify the sources of funds, such as savings, earnings, or debt, which will be used to purchase consumable and non-consumable goods.

Fine Arts

Offered in: 9th, 10th, 11th, 12th

Prerequisite: none

In Fine Arts, students develop aesthetic and cultural awareness through exploration, leading to creative expression using four basic strands--foundations: observation and perception; creative expression; historical and cultural relevance; and critical evaluation and response--provide broad, unifying structures for organizing the knowledge and skills students are expected to acquire. Each strand is of equal value and may be presented in any order throughout the year. Students rely on personal observations and perceptions, which are developed through increasing visual literacy and sensitivity to surroundings, communities, memories, imaginings, and life experiences as sources for thinking about, planning, and creating original artworks. Students communicate their thoughts and ideas with innovation and creativity. Through art, students challenge their imaginations, foster critical thinking, collaborate with others, and build reflective skills. While exercising meaningful problem-solving skills, students develop the lifelong ability to make informed judgments.

Foundations of Cybersecurity

Offered in: 9th – 12th

Prerequisites: None

In the Foundations of Cybersecurity course, students will develop the knowledge and skills needed to explore fundamental concepts related to the ethics, laws, and operations of cybersecurity. Students will examine trends and operations of cyber attacks, threats, and vulnerabilities. Students will review and explore security policies designed to mitigate risks.

Geometry

Offered in: 9-10

Credits: 1

Prerequisite: Algebra 1

In Geometry, students will build on the knowledge and skills for mathematics in Kindergarten-Grade 8 and Algebra I to strengthen their mathematical reasoning skills in geometric contexts. Within the course, students will begin to focus on more precise terminology, symbolic representations, and the development of proofs. Students will explore concepts covering coordinate and transformational geometry; logical argument and constructions; proof and congruence; similarity, proof, and trigonometry; two- and three-dimensional figures; circles; and probability. Students will connect previous knowledge from Algebra I to Geometry through the coordinate and transformational geometry strand. In the logical arguments and constructions strand, students are expected to create formal constructions using a straight edge and compass. Though this course is primarily Euclidean geometry, students should complete the course with an understanding that non-Euclidean geometries exist. In proof and congruence, students will use deductive reasoning to justify, prove and apply theorems about geometric figures. Throughout the standards, the term "prove" means a formal proof to be shown in a paragraph, a flow chart, or two-column formats. Proportionality is the unifying component of the similarity, proof, and trigonometry strand. Students will use their proportional reasoning skills to prove and apply theorems and solve problems in this strand. The two- and three-dimensional figure strand focuses on the application of formulas in multi-step situations since students have developed background knowledge in two- and three-dimensional figures. Using patterns to identify geometric properties, students will apply theorems about circles to determine relationships between special segments and angles in circles. Due to the emphasis of probability and statistics in the college and career readiness standards, standards dealing with probability have been added to the geometry curriculum to ensure students have proper exposure to these topics before pursuing their post-secondary education.

Human Body Systems

Offered in: 10

Credits: 1

Prerequisite: Principles of Biomedical

Students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis in the body. Exploring science in action, students build organs and tissues on a skeletal Maniken®; use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases.

Internetworking Technologies 1

Offered in 9th – 12th

Prerequisites: None

The Internetworking Technologies I course is normally comprised of the courses called Cisco CCNA R&S: Introduction to Networks (CCNA 1) and Cisco CCNA R&S: Routing and Switching Essentials (CCNA 2). The Introduction to Networks course introduces the concept of networking, using various analogies to help the student understand the movement of packets throughout the Internet, and the protocol standards used. The Routing and Switching course moves the student into

the theory of “moving packets.” The concepts of routing and switching “packets” to the correct destination is covered, and how a network administrator can direct and/or streamline this process through device configuration and deployment

Medical Interventions

Offered in: 11

Credits: 1

Prerequisite: Human Body Systems

Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

Medical Innovation

Offered in: 12

Credits: 1

Prerequisite: Medical Interventions

In the final course of the PLTW Biomedical Science sequence, students build on the knowledge and skills gained from previous courses to design innovative solutions for the most pressing health challenges of the 21st century. Students address topics ranging from public health and biomedical engineering to clinical medicine and physiology. They have the opportunity to work on an independent project with a mentor or advisor from a university, medical facility, or research institution.

PE

Offered in: 9-12

Credits: 1

Prerequisite: none

Physical Education, students acquire movement knowledge and skills that provide the foundation for enjoyment, continued social development through physical activity, and access to a physically active lifestyle. The student exhibits a physically active lifestyle and understands the relationship between physical activity and health throughout the lifespan. Students in Individual Sports are expected to participate in a wide range of individual sports that can be pursued for a lifetime. The continued development of health-related fitness and the selection of individual sport activities that are enjoyable is a major objective of this course.

Physics

Offered in: 11

Credits: 1

Prerequisite:

In Physics, students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students study a variety of topics that include: laws of motion; changes within physical systems and conservation of energy and momentum; forces; thermodynamics; characteristics and behavior of waves; and atomic, nuclear, and quantum physics. Students who successfully complete Physics will acquire factual knowledge within a conceptual framework, practice experimental design and interpretation, work collaboratively with colleagues, and develop critical thinking skills.

Precalculus

Offered in: 11-12

Credits: 1

Prerequisite: Algebra I, Geometry, and Algebra II

Precalculus is the preparation for calculus. The course approaches topics from a function point of view, where appropriate, and is designed to strengthen and enhance conceptual understanding and mathematical reasoning used when modeling and solving mathematical and real-world problems. Students systematically work with functions and their multiple representations. The study of Precalculus deepens students' mathematical understanding and fluency with algebra and trigonometry and extends their ability to make connections and apply concepts and procedures at higher levels. Students investigate and explore mathematical ideas, develop multiple strategies for analyzing complex situations, and use technology to build understanding, make connections between representations, and provide support in solving problems.

Practicum in Science, Technology, Engineering, and Mathematics 1

Offered in: 11th and 12th

Prerequisites: Algebra 1 and Geometry. Completion, and acceptance, of CTE handbook paperwork. Course can be taken for 1 or 2 credits.

Recommended prerequisites: Two Science, Technology, Engineering, and Mathematics (STEM) Career cluster credits.

This practicum in Science, Technology, Engineering, and Mathematics is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences

can occur in a variety of locations appropriate to the nature and level of experience. Although periods should be adhered to in order to provide students with experience, completion of skill sets may be demonstrated throughout the practicum; thus, units do not have to be delivered sequentially.

Practicum in Science, Technology, Engineering, and Mathematics 2

Offered in: 12th

Prerequisites: Algebra 1 and Geometry. Completion, and acceptance, of CTE handbook paperwork. Practicum 1. Course can be taken for 1 or 2 credits.

Recommended prerequisites: Two Science, Technology, Engineering, and Mathematics (STEM) Career cluster credits.

This extended practicum in Science, Technology, Engineering, and Mathematics is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience. Although periods should be adhered to in order to provide students with experience, completion of skill sets may be demonstrated throughout the practicum; thus, units do not have to be delivered sequentially.

Principles of Biomedical Sciences

Offered in: 9

Credits: 1

Prerequisite: none

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

Project Based Research

Offered in: 12th

Prerequisites: None

Note: This is a final sequence course for our programming/cybersecurity pathway.

Project-Based Research is a course for students to research a real-world problem. Students are matched with a mentor from the business or professional community to develop an original project on a topic related to career interests. Students use scientific methods of investigation to conduct in-depth research, compile findings, and present their findings to an audience that includes experts in

the field. To attain academic success, students must have opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.

Public Speaking

Offered in: 10 or 11

Credits: 1

Prerequisite: none

In order to have full participation in the civic process, students must have a good understanding of public dialogue. Students must learn the concepts and skills related to preparing and presenting public messages and to analyzing and evaluating the messages of others. Within this process, students will gain skills in reading, writing, speaking, listening, and thinking and will examine areas such as invention, organization, style, memory, and delivery.

Robotics I-II

Offered in: 10th, 11th, 12th

Prerequisite: Computer Science I, Computer Science II, Robotics II requires completion of I.

In Robotics, students will transfer academic skills to component designs in a project-based environment through implementation of the design process. Students will build prototypes or use simulation software to test their designs. Additionally, students will explore career opportunities, employer expectations, and educational needs in the robotic and automation industry.

Scientific Research and Design 1-3

Offered in: 11th and 12th

Prerequisites: Biology, Chemistry, and concurrent enrollment in physics or completion of physics.

Scientific Research and Design is a broad-based course designed to allow districts and schools considerable flexibility to develop local curriculum to supplement any program of study or coherent sequence. The course has the components of any rigorous scientific or engineering program of study from the problem identification, investigation design, data collection, data analysis, formulation, and presentation of the conclusions.

This course can serve as the capstone course for the Biomedical track students as an independent directed research project in Biomedical studies, or as a dual credit course for those enrolled with the university.

Social Studies Advanced Studies

Offered in: 11th – 12th

Prerequisite/Notes: United States Government completion and enrollment in second half of Dual Credit government with IHE.

This course is designed for the second half of dual credit government with an emphasis on Texas government.

Sociology

Offered in: 10

Credits: 1

Prerequisite: none

Sociology, an elective course, is an introductory study in social behavior and organization of human society. This course will describe the development of the field as a social science by identifying methods and strategies of research leading to an understanding of how the individual relates to society and the ever changing world. Students will also learn the importance and role of culture, social structure, socialization, and social change in today's society.

Special Topics in Social Studies I-IV

Offered in: 10th-12th

Prerequisite: Counselor/Principal approval

In Special Topics in Social Studies, an elective course, students are provided the opportunity to develop a greater understanding of the historic, political, economic, geographic, multicultural, and social forces that have shaped their lives and the world in which they live. Students will use social science knowledge and skills to engage in rational and logical analysis of complex problems using a variety of approaches, while recognizing and appreciating diverse human perspectives.

United States Government

Offered in: 11-12

Credits: 1

Prerequisite: US History since 1877

In United States Government, the focus is on the principles and beliefs upon which the United States was founded and on the structure, functions, and powers of government at the national, state, and local levels. This course is the culmination of the civic and governmental content and concepts studied from Kindergarten through required secondary courses. Students learn major political ideas

and forms of government in history. A significant focus of the course is on the U.S. Constitution, its underlying principles and ideas, and the form of government it created. Students analyze major concepts of republicanism, federalism, checks and balances, separation of powers, popular sovereignty, and individual rights and compare the U.S. system of government with other political systems. Students identify the role of government in the U.S. free enterprise system and examine the strategic importance of places to the United States. Students analyze the impact of individuals, political parties, interest groups, and the media on the American political system, evaluate the importance of voluntary individual participation in a constitutional republic, and analyze the rights guaranteed by the U.S. Constitution. Students examine the relationship between governmental policies and the culture of the United States. Students identify examples of government policies that encourage scientific research and use critical-thinking skills to create a product on a contemporary government issue.

US History

Offered in: 10

Credits: 1

Prerequisite:

In United States History Studies Since 1877, which is the second part of a two-year study that begins in Grade 8, students study the history of the United States from 1877 to the present. The course content is based on the founding documents of the U.S. government, which provide a framework for its heritage. Historical content focuses on the political, economic, and social events and issues related to industrialization and urbanization, major wars, domestic and foreign policies, and reform movements, including civil rights. Students examine the impact of geographic factors on major events and eras and analyze their causes and effects. Students examine the impact of constitutional issues on American society, evaluate the dynamic relationship of the three branches of the federal government, and analyze efforts to expand the democratic process. Students describe the relationship between the arts and popular culture and the times during which they were created. Students analyze the impact of technological innovations on American life. Students use critical-thinking skills and a variety of primary and secondary source material to explain and apply different methods that historians use to understand and interpret the past, including multiple points of view and historical context.

World Geography

Offered in: 9

Credits: 1

Prerequisite: none

In World Geography Studies, students examine people, places, and environments at local, regional, national, and international scales from the spatial and ecological perspectives of geography. Students describe the influence of geography on events of the past and present with emphasis on contemporary issues. A significant portion of the course centers around the physical processes that shape patterns in the physical environment; the characteristics of major landforms, climates, and

ecosystems and their interrelationships; the political, economic, and social processes that shape cultural patterns of regions; types and patterns of settlement; the distribution and movement of the world population; relationships among people, places, and environments; and the concept of region. Students analyze how location affects economic activities in different economic systems. Students identify the processes that influence political divisions of the planet and analyze how different points of view affect the development of public policies. Students compare how components of culture shape the characteristics of regions and analyze the impact of technology and human modifications on the physical environment. Students use problem-solving and decision-making skills to ask and answer geographic questions.

World History

Offered in: 10-11

Credits: 1

Prerequisite: none

World History Studies is a survey of the history of humankind. Due to the expanse of world history and the time limitations of the school year, the scope of this course should focus on "essential" concepts and skills that can be applied to various eras, events, and people within the standards in subsection (c) of this section. The major emphasis is on the study of significant people, events, and issues from the earliest times to the present. Traditional historical points of reference in world history are identified as students analyze important events and issues in western civilization as well as in civilizations in other parts of the world. Students evaluate the causes and effects of political and economic imperialism and of major political revolutions since the 17th century. Students examine the impact of geographic factors on major historic events and identify the historic origins of contemporary economic systems. Students analyze the process by which constitutional governments evolved as well as the ideas from historic documents that influenced that process. Students trace the historical development of important legal and political concepts. Students examine the history and impact of major religious and philosophical traditions. Students analyze the connections between major developments in science and technology and the growth of industrial economies, and they use the process of historical inquiry to research, interpret, and use multiple sources of evidence.