Science, Technology, Engineering, and Mathematics

Sequence	Year 1	Year 2	Year 3	Year 4	Industry Based Certifications
Engineering	Principles of Applied Engineering 1 Credit 13036200	Engineering Design & Presentation I 1 Credit 13036500	Engineering Design and Presentation II 2 Credits 13036600	Engineering Design & Problem Solving 1 Credit COUNTS AS ADV. SCI. 13037300 OR Practicum in Science, Technology, Engineering, and Mathematics 2 Credits 13037400	Pre-Engineering/Engineering Technology - Job Ready
Cybersecurity	Fundamentals of Computer Science 1 Credit 03580140	Computer Science I 1 Credit COUNTS AS LOTE 03580200	AP Computer Science Principles 1 Credit COUNTS AS LOTE A3580300 OR AP Computer Science A 2 Credits COUNTS AS ADV. MATH COUNTS AS LOTE A3580110- MATH and A3580120-LOTE	Practicum in Science, Technology, Engineering, and Mathematics 2 Credits 13037400 OPTIONAL: Career Preparation I 3 Credits 12701300	Cybersecurity Fundamentals
Cybersecurity (DUAL CREDIT WITH TSTC)	Fundamentals of Computer Science 1 Credit 03580140	Computer Science I 1 Credit COUNTS AS LOTE 03580200	Personal Computer Hardware 1 Credit DUAL CREDIT - TSTC N1302803 AND Fundamentals to Networking 1 Credit DUAL CREDIT - TSTC N1302804	Implementing & Supporting Servers 1 Credit DUAL CREDIT - TSTC 13022650 AND Secure Linux Administration 1 Credit DUAL CREDIT - TSTC 13580855	Cybersecurity Fundamentals
Programming and Software Development	Fundamentals of Computer Science 1 Credit 03580140	Computer Science I 1 Credit COUNTS AS LOTE 03580200	Computer Science II 1 Credit COUNTS AS LOTE 03580300 OR AP Computer Science A 2 Credits COUNTS AS ADV. MATH COUNTS AS LOTE A3580110- MATH and A3580120-LOTE	Computer Science III 1 Credit COUNTS AS LOTE 03580350 OR Practicum in Science, Technology, Engineering, and Mathematics 2 Credits 13037400 OPTIONAL: Career Preparation I 3 Credits 12701300	Certified Entry-Level Python Programmer Oracle Certified Associate Java SE 8 Programmer

Cybersecurity

683R	Foundations of Cybersecurity			TAFCYB	CTE
9 - 12	Program of Study: Cybersecurity	03580850	**Length of Course:** Year	**Credit:** 1	**GPA Level 1**
Prerequisite(s): None				**Fee Required:** No	

Description: 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 cyberattacks, threats, and vulnerabilities. Students will review and explore security policies designed to mitigate risks. The skills obtained in this course prepare students for additional study in cybersecurity. A variety of courses are available to students interested in this field. Foundations of Cybersecurity may serve as an introductory course in this field of study.

681R	Computer Science I			TACS1	CTE
9-12	Program of Study: Cybersecurity	03580200	**Length of Course:** Year	**Credit:** 1	**GPA Level 1**
Prerequisites: Algebra				**Fee Required:** No	

Description: 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. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem-solving, and decision making; digital citizenship; and technology operations and concepts.

683A **684A**	**AP Computer Science -A**			APTACSAM APTACSAL	CTE
11-12	Program of Study: Cybersecurity	A3580110 A3580120	**Length of Course:** Year	**Credit:** 2 (1 per section)	**GPA Level 1**
Recommended prerequisites: Algebra I				**Fee Required:** No	
Description: AP Computer Science A introduces students to computer science through programming. Fundamental topics in this course include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems. The course emphasizes object-oriented programming and design using the Java programming language.					

600P	**Project-Based Research (Cybersecurity)**			PROBS1	CTE
11-12	Program of Study: Cybersecurity	12701500	**Length of Course:** Year	**Credit:** 1	**GPA Level 1**
Prerequisites: Computer Science Courses				**Fee Required:** No	
Description: 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.					

Programming and Software Development

681R	**Computer Science I**			TACS1	CTE
9-12	Program of Study: Programming/Software Development	03580200	**Length of Course:** Year	**Credit:** 1	**GPA Level 1**
Prerequisites: Algebra				**Fee Required:** No	
Description: 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. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem-solving, and decision making; digital citizenship; and technology operations and concepts.					

532A	**Advanced Placement Computer Science Principles**			APCSPRIN	CTE
9 - 12	Program of Study: Programming/Software Development	A3580300	**Length of Course:** Year	**Credit:** 1	**GPA Level 1**
Prerequisite: None				**Fee Required:** No	
Description: AP Computer Science Principles introduces students to the breadth of the field of computer science. In this course, students will					

learn to design and evaluate solutions and apply computer science to solve problems through the development of algorithms and programs. They will incorporate abstraction into programs and use data to discover new knowledge. Students will also explain how computing innovations and computing systems, including the Internet, work, explore their potential impacts and contribute to a computing culture that is collaborative and ethical.

###	**Computer Science II**			TACS2	CTE
10-12	Program of Study: Programming/Software Development	03580300	**Length of Course:** Year	**Credit:** 1	**GPA Level 1**
Prerequisite: Algebra I and either Computer Science I or Fundamentals of Computer Science.				**Fee Required:** No	

Description: 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. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem-solving, and decision making; digital citizenship; and technology operations and concepts.

683A **684A**	**AP Computer Science -A**			APTACSAM APTACSAL	CTE
11-12	Program of Study: Programming/Software Development	A3580110 A3580120	**Length of Course:** Year	**Credit:** 2 (1 per section)	**GPA Level 1**
Recommended prerequisites: Algebra I				**Fee Required:** No	

Description: AP Computer Science A introduces students to computer science through programming. Fundamental topics in this course include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems. The course emphasizes object-oriented programming and design using the Java programming language.

####	**Computer Science III**			TACS3	CTE
11-12	Program of Study: Programming/Software Development	03580350	**Length of Course:** Year	**Credit:** 1	**GPA Level 1**
Prerequisite: Computer Science II, Advanced Placement (AP) Computer Science A				**Fee Required:** No	

Description: 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. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

Engineering

305R	**Principles of Applied Engineering**			PRAPPENG	CTE
9–10	Program of Study: Engineering	13036200	**Length of Course:** Year	**Credit:** 1	**GPA Level 1**

Prerequisite: None				**Fee Required:** No	
Description: Principles of Applied Engineering provides an overview of the various fields of science, technology, engineering, and mathematics and their interrelationships. Students will develop engineering communication skills, which include computer graphics, modeling, and presentations, by using a variety of computer hardware and software applications to complete assignments and projects. Upon completing this course, students will understand the various fields of engineering and will be able to make informed career decisions. Further, students will have worked on a design team to develop a product or system. Students will use multiple software applications to prepare and present course assignments.					
306R	**Engineering Design and Presentation I**			ENGDSPR1	CTE
	Program of Study: Engineering	13036500	**Length of Course:** Year	**Credit:** 1	**GPA Level 1**
Prerequisite: Algebra I. Recommended Prerequisite: Principles of Applied Engineering.				**Fee Required:** No	
Description: 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 the 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.					
361R	**Engineering Design and Presentation II**			ENGDSPR2	CTE
11–12	Program of Study: Engineering	13036600	**Length of Course:** Year	**Credit:** 2	**GPA Level 1**
Prerequisites: Algebra I and Geometry. Recommended Prerequisite: Principles of Applied Engineering or Engineering Design and Presentation I.				**Fee Required:** No	
Description: Engineering Design and Presentation II is a continuation of knowledge and skills learned in Engineering Design and Presentation I. 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 the implementation of the design process, students will transfer advanced academic skills to component designs. Emphasis will be placed on using skills from ideation through prototyping.					
###	**Practicum in Science, Technology, Engineering, and Mathematics**			PRCSTEM1	CTE
10–12	Program of Study: Engineering	13037400	**Length of Course:** Year	**Credit:** 2	**GPA Level 1**
Prerequisites: Algebra I and Geometry. Recommended Prerequisites: 2 Science, Technology, Engineering, and Mathematics (STEM) credits.				**Fee Required:** No	
Description: Practicum in STEM is designed to give students supervised practical application of previously studied knowledge and skills.					

Taylor ISD offers career and technical education programs in Health Science, Child Development, Transportation, Foods & Nutrition, Culinary, Agriculture/Mechanics, Cooperative Education, Business Information, Commercial Photography, Audio Visual and Criminal Justice. Admission to these programs is open to all students, but some courses may require a prerequisite course. It is the policy of Taylor ISD not to discriminate on the basis of race, color, national origin, sex or handicap in its vocational programs, services or activities as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; and Section 504 of the Rehabilitation Act of 1973, as amended. It is the policy of Taylor ISD not to discriminate on the basis of race, color, national origin, sex, handicap, or age in its employment practices as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; the Age Discrimination Act of 1975, as amended; and Section 504 of the Rehabilitation Act of 1973, as amended. Taylor ISD will take steps to assure that lack of English language skills will not be a barrier to admission and participation in all educational and vocational programs. For information about your rights or grievance procedures, contact the Title IX Coordinator, Clarissa Rodriguez, and/or the Section 504 Coordinator, Jodi Witt, at 3101 N. Main, Ste 104, Taylor, TX 76574, 512-365-1391.