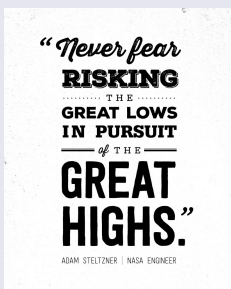


It's just the beginning

In the high tech world in which we live, programming is quickly becoming an integral part of all industries from engineering to medicine. Learning to navigate complex programming languages, apply algorithms that solve real-world problems, and communicate those solutions, is a key ingredient to the success of every project. *Software and System Development* strives to prepare students for the rigor of college and the workplace by teaching the essential tools of programming, data and system analysis, mechanical engineering, and communication.



SUPPORTING ORGANIZATIONS

Unique to this pathway are the supporting clubs of SWENext (Society of Women Engineers Next generation) and *Stable Circuits Robotics* through FIRST®. These organizations provide the application component that make the pathway more meaningful.



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Clovis North High School

2020-2021

CTE Pathway Information Technology

*Software and System
Development*





Software and System Development

This unique pathway is designed to take students on an articulated journey through the multi-faceted world of Information Technology, Software and System Development. Starting in 7th grade, students can begin taking courses with Computer Applications that teach, among other things, programming, robotics, and analysis of data systems. In high school, courses build on that knowledge and delve deeper into programming languages and engineering principles. In 11th/12th grades, students can apply for many internship opportunities with our industry partners. Supporting this pathway are community partners Bitwise Industries, ADCO Manufacturing, Anlin Windows and Doors, Betts Manufacturing, Sunrise Medical, GeekWise Academy, Clovis Unified School District, Clovis Community College, Fresno County Superintendent of Schools, and Fresno State Lyles College of Engineering.



Pre-Pathway Courses

Computer Applications 7th is an introductory course intended for 7th grade students to support their integration into the technology rich laptop environment at the intermediate level.

Computer Science Discoveries 8th Computer Science Discoveries (CS Discoveries) is an introductory computer science course that empowers students to create authentic artifacts and engage with computer science as a medium for creativity, communication, problem solving, and fun.

Pathway Courses

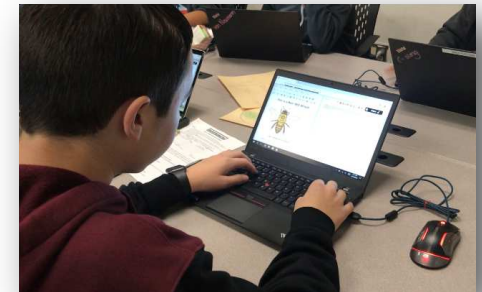
Exploring Computer Science Exploring Computer Science is a yearlong course consisting of 6 units, approximately 6 weeks each; Human Computer Interaction, Problem Solving, Web Design, Programming, Computing and Data Analysis, and Robotics.

AP Computer Science Principles both a college-prep course for potential computer science majors and a foundation course for students planning to study in other technical fields such as engineering, mathematics, physics, chemistry and biology. Uses Scratch, html, CSS and C++ programming languages.

AP Computer Science A is both a college-prep course for potential computer science majors and a foundation course for student planning to study in other technical fields such as engineering, physics, chemistry and geology. AP Computer Science Principles is a prerequisite for this course.

Courses by Grade level

Course	Grades
Computer Applications 7th	7th
Computer Science Discoveries 8th	8th
Exploring Computer Science	9th-11th
AP Computer Science Principles	10th– 12th
AP Computer Science A	11th-12th



An add-on to the Pathway

Computer Aided Design and Engineering is a 3D modeling course utilizing *SolidWorks*® that focuses on precision in design and engineering combined with programming to create tangible products using the Axiom 3D printers and the Velox CNC routers. Although not part of the pathway, this course complements the technology and engineering concepts taught in the progression of courses.