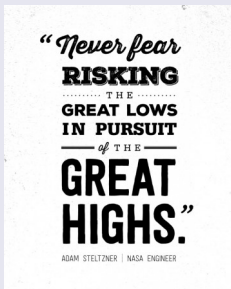


## It's just the beginning

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.



Clovis Unified School District  
Clovis North High School

CTE Counselor:  
Erin Gunn  
eringunn@cusd.com  
559-327-5083

CTE Learning Director:  
Marci Panoo  
marcipanoo@cusd.com  
559-327-5045

CTE Teacher:  
Mary Allen  
maryallen@cusd.com  
559-327-5187

Clovis North High School  
2770 E. International Avenue  
Fresno, CA 93730  
(559) 327-5000

Phone: 559-327-5000  
Fax: 559-327-5091  
E-mail: marcipanoo@cusd.com

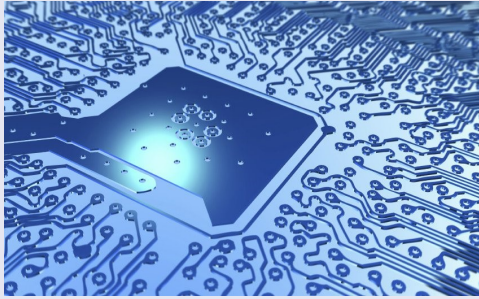
## Clovis North High School

2017-2018

### 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, student can take an engineering course with our partner Clovis Community College for dual credit. Culminating this pathway is an “apprentice” opportunity to work with community partners creating real-life software solutions. Supporting this pathway are community partners Bitwise Industries, Geekwise Academy, Clovis Unified School District, Clovis Community College, and Fresno State Lyles College of Engineering



## Pathway Courses

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

**Computer Applications 8th** is an intermediate level course for 8<sup>th</sup> grade students to advance integration into the technology rich laptop environment at the intermediate level. Students will learn basic programming skills, web design, computing and data analysis, robotics, and advanced research skills.

**Robotics 7/8** is divided into twelve primary units and one optional unit. In a flexible format, students learn about engineering and engineering problem solving. They will be given introductions to VEX and FIRST Robotics while learning key STEM principles.

**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.

**Principles of Engineering and Robotics** is a hands on course that teaches STEM principles while encouraging a competitive spirit. Student have the chance to join the school’s robotics team *Stable Circuits Robotics* to compete in regional and national competitions.

**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.

## Courses by Grade level

Course	Grades
Computer Applications 7th	7th
Computer Applications 8th	8th
Robotics 7/8	7th or 8th
Exploring Computer Science	9th-11th
Principles of Engineering and Robotics	9th-12th
AP Computer Science A	11th-12th



## Sample Careers

- Software Engineer
- Computer Network Architect
- Systems Developer
- Software Developer
- Computer Systems Analyst
- IT Manager
- Web Developer
- Performance Systems Development