



# Systems Programming

## Information & Communication Technologies Sector

- Demand for IT support specialists is expected to increase faster than the average for all other occupations as organizations continue to adopt and integrate increasingly sophisticated technology.
- ICT specialists keep computer and networks operating in a variety of industries including healthcare, education, finance and entertainment.
- Students choosing a career in this industry sector are good with critical thinking, teamwork, problem solving, and have a willingness to learn math concepts.

## Benefits of Taking This Pathway

Seniors who meet the following requirements are eligible for a Career Pathways Cord at Graduation:

- Completion of a Pathway Program, with a C or better within the pathway.
- Earn an overall GPA of 2.0

### Potential College Majors

- Information Technology
- Computer Science
- Information Systems

### Sites

- GUHS

### Potential Careers

- Database Administrator
- Video Game Designer
- IT Security Specialist
- IT Help Desk Technician
- Mobile Application Developer
- Software Engineer

# Systems Programming at GUHS

## Pathway Courses

### Exploring Computer Science

(GUHS)

**Grades:** 9-11 **Duration:** Year

**HS Grad Req:** Electives **US/CSU a-g:** Electives

**Prerequisite:** none

**CTE Pathway (level):** Information and Communication Technology (concentrator)

**Course Description:** This course will provide students with foundational knowledge of computer science. Students will explore topics of human computer interaction, problem solving, web design, computer programming, data modeling, and robotics. Throughout the course, students will understand the algorithmic underpinnings of computer applications and gain technical expertise using computational tools



### Computer Science Principles

(GUHS)

**Grades:** 10-12 **Duration:** Year

**HS Grad Req:** Mathematics **US/CSU a-g:** Mathematics

**Prerequisite:** Exploring Computer Science

**CTE Pathway (level):** Information and Computer Technology (capstone)

**Course Description:** Computer Science Principles is designed to introduce students to the breadth of the field of computer science through an exploration of engaging and accessible topics. The course is designed to focus on the conceptual ideas of computing and help students understand why certain tools or languages might be utilized to solve particular problems. The main goal of the CS Principles course is to provide students a foundation in computer science concepts and practices so that students learn to reason using computational thinking and critical thinking skills. This course will engage students in the problem-solving and creative aspects of the field by creating products that involve the computational process the same way real-world professionals do.

## Continuing Pathways Post-Secondary

### American River College:

- Computer Science AS Degree
- Comp. Networking Mgnt. AS Degree
- Computer Programming AS Degree
- Database Management AS Degree

### CSU Sacramento:

- Computer Science BS Degree
- Computer Engineering BS Degree