

# Computer Science II Syllabus

## **Course Description/Goals:**

This course includes exploration into creating, modifying, and testing the codes, forms and scripts that allow computer applications to run. Students will use the programming language Python and TechSmart Curriculum to work both individually and collaboratively to solve problems. Course studies will include locating, analyzing, processing and organizing data, comparing operating systems, software applications, hardware platforms and programming languages. Certifications will be earned in Certified Entry Level Python Programmer (PCEP). This course may be used as a Language Other than English credit and will be included in the calculation of the weighted GPA.

## **Course TEKS/Objectives:**

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 computational thinking and 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 gain an understanding of computer science through the study of technology operations, systems, and concepts.

<https://tea.texas.gov/state-board-of-education/sboe-2022/sboe-2022-june/4cofb-tues-chap-127-career-devt-sub-o-attach-0622.pdf>

## **Course Outline:**

Semester 1	Semester 2
<p><b>Files</b></p> <ul style="list-style-type: none"><li>- Reading Files</li><li>- Writing Files</li><li>- Structured Text Files</li><li>- Media Files</li><li>- Unit Testing</li></ul> <p><b>Project Structure</b></p> <ul style="list-style-type: none"><li>- File Systems</li><li>- User-Defined Modules</li><li>- Exceptions</li><li>- Comprehensions</li></ul> <p><b>PCEP Prep</b></p> <ul style="list-style-type: none"><li>- Recursion</li><li>- Full Content Review</li><li>- Code Tracing</li></ul>	<p><b>OOP Essentials</b></p> <ul style="list-style-type: none"><li>- User-Defined Classes</li><li>- Class creation</li></ul> <p><b>Capstone Project</b></p> <ul style="list-style-type: none"><li>- Project Envisioning &amp; Planning</li><li>- Project Design</li><li>- Project Building</li><li>- Project Testing</li><li>- Project Presentations</li><li>- Project Reflections</li></ul>