Welcome to

AP Computer Science Principles

Course Overview & Summer Preparation Guide

Instructor	Mrs. O'Neil
Email	soneil@xavierprep.org
School	Xavier College Preparatory High School

About the Course

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, using an inclusive set of programming tools to develop and implement creative solutions. Students will also develop effective communication and collaboration skills.

The course culminates in the AP Exam and a Create Performance Task that requires logical thinking, creative problem-solving, and mathematics skills.

Tips & Expectations

- Be proactive — Read material before class and engage actively in discussions.
- Attend extra help early — Clarify issues before they snowball as concepts build on each other.
- Master early material — It forms the foundation for everything that follows in the course.
- Check your school email regularly for grades, assignments, and supplemental resources.
- **Embrace mathematics, logic, and CREATIVITY — all three are essential to success.**
- The Create Performance Task requires logical thinking, creative problem-solving, and math skills.

Honor Code

All students of Xavier College Preparatory High School pledge to uphold the highest standards of academic integrity. The following key points are non-negotiable:

- No plagiarism — Never present someone else's work as your own or submit work without proper attribution.

- No AI-generated code — Do not use ChatGPT or similar tools to generate code or academic work unless explicitly permitted by the instructor.
- No copying — Do not allow classmates to copy your code or answers. Collaboration does not mean copying.
- No posting solutions online — Sharing solution code publicly is a violation of academic integrity.
- Take responsibility — Ensure your work is original and report suspected cases of academic misconduct.

By enrolling in this course, you affirm your commitment to honesty, respect, and responsibility in all aspects.

Summer Tasks Overview - All Tasks due in Canvas by JUly 27th

This is a college level course - No late work will be accepted

Task 1: CodeHs Intro to coding

Practice Coding in Codio Platform. This will serve as an introduction. It is to get you acquainted with Python. If you run into any issues please feel free to email me.

- Use this link Summer Work in Code HS
- Complete: Basic Python and Console Interaction
  Conditionals
  Looping

Task 2: Movie & Essay - 1 -2 pages

*Watch **one** of the approved films and write a one-page paper answering 2 of the 3 prompts.*

- Minority Report (PG-13) — Computer vision, predictive algorithms, cybersecurity
- The Martian (PG-13) — Problem-solving, life-support systems, interplanetary communication
- Moneyball (PG-13) — Data mining, machine learning, data visualization
- Tron: Legacy (PG) — AI/virtual reality, computer viruses, computer graphics
- Project Hail Mary (PG-13) — Problem-solving, life-support systems, interplanetary communication

Answer the following three(3) questions:

1. **How is computer science used to solve a major problem in the film?**
   Anchor your response in the specific technology shown while demonstrating what you understand Computer Science to be (There are no wrong answers)

2. **What ethical or societal issues arise from the technology depicted in the film?**
   All five movies raise real-world concerns — privacy, surveillance, AI bias, data misuse, cheating the system, cybersecurity threats.Think critically rather than just summarizing plot,

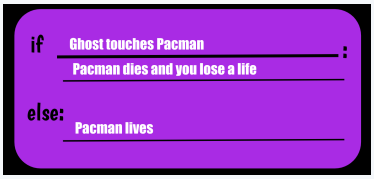
3. **How does the technology shown in the movie compare to what exists in the real world today, and where do you think it's headed?**
This prompt rewards curiosity and research. I want to know what YOU think not what AI thinks,

Write in your own voice — AI detectors will be used to verify authenticity - I want to hear what you think do not worry about trying to sound academic - HAVE FUN

Task 3: Pacman Conditional Statements

Play arcade games and identify 6 game rules as if-else conditional statements.

- Visit 80's Arcade Games or worldsbiggestpacman.com
- Fill in the 6 if-else scaffolding templates provided below:



- Be as descriptive as possible — conditionals are fundamental to coding
- Bonus: identify a loop you observe in the game
- Note: You are NOT writing actual code — pseudocode comments are fine

Looking forward to a great year!

Questions? Email Mrs. O'Neil at soneil@xavierprep.org