

4. Integrate multiple attempts to demonstrate student mastery of content knowledge, as encouraged/fostered by the PSI pedagogy.
5. Implement learning plans that are aligned to AP standards, incorporate literacy strategies and allow for differentiation.

TEXTS, READINGS, INSTRUCTIONAL RESOURCES:

Required Texts:

- PSI AP Computer Science Principles uses a free digital textbook accessible at: <https://njctl.org/materials/courses/ap-computer-science-principles/>
- Participants will download SMART Notebook presentations, homework files, labs, and teacher resources from the PSI AP Computer Science Principles

COURSE REQUIREMENTS:

In order to receive a Passing grade, the participant must complete the following course requirements:

1. **Activities:** A number of different learning activities will ensure participant engagement and learning in the course. These include:
 - Engage in video module lessons which demonstrate minimized direct instruction followed by frequent formative assessment
 - Completion of formative assessments aligned to learning objectives which include detailed analysis when answered incorrectly.
 - Interaction with module discussion boards that allow conversation with peers and course instructors about the module's content, delivering that content to students. Discussion boards also serve as a place to ask and answer questions related to the module's content.
2. **Short Answer Assignment:** Each module requires one (1) original response to a given prompt. These prompts are typically based upon course lessons and require teachers to analyze, reflect, and make connections between the module's content and their own classroom practice.
3. **Mastery Exercises:** For each module, these multiple-choice question quizzes assess the content knowledge gained in a module. Participants have the opportunity to retake; random questions are pulled from a larger question bank on each attempt ensuring varied questions.
4. **Programming Assignments/Labs:** In each module, a Python file is submitted to demonstrate an understanding of the graded programming assignment. These assignments are problem-based questions that require the writing of a program. These promote a deeper understanding of logical reasoning and the applications of programming. A culminating lab activity occurs in the final module.
5. **Module Exam:** One is completed at the end of each module. It is a culminating exam consisting of multiple choice and free response questions aligned to the standards and objectives of the module.
6. **Reflection Paper:** At the end of the course, participants are required to reflect on the knowledge taught in the course, make connections, and compare/contrast their current pedagogy with new strategies gained in this assignment.
7. **Final Exam:** At the end of the course, a comprehensive exam consisting of Multiple Choice and Free Response questions assesses the content knowledge learned throughout the course and aligns to the AP College Board Exams.

GRADE DISTRIBUTION AND SCALE:

Grade Distribution:

Module Exams	70%
Final Exam	10%
Programming Assignments/Labs	6%
Short Answer Assignments	6%
Mastery Exercises	6%
Reflection Paper	2%

Grade Scale:

A	93 – 100
A-	90 – 92
B+	86 – 89
B	83 – 86
B-	80 – 82
C+	77 – 79
C	73 – 76
C-	70 – 72
D	60.0 – 69.9
F	59.9 or below

ACADEMIC STANDING:

NJCTL has established standards for academic good standing within a student's academic program. Students enrolled in any NJCTL online course must receive an 80 or higher to successfully complete a course and receive credit for that course. An 80 is equivalent to a GPA of 2.7 or B-. Additionally, students in an endorsement program must receive a cumulative GPA of 3.0 for all courses combined in order to successfully complete the program.

ACADEMIC INTEGRITY:

Students must assume responsibility for maintaining honesty in all work submitted for credit and in any other work designated by the instructor of the course. Academic dishonesty includes cheating, fabrication, facilitating academic dishonesty, plagiarism, reusing /repurposing your own work, unauthorized possession of academic materials, and unauthorized collaboration.

CITING SOURCES WITH APA STYLE:

All students are expected to follow proper writing and APA requirements when citing in APA (based on the APA Style Manual, 6th edition) for all assignments.

DISABILITY SERVICES STATEMENT:

We are committed to providing reasonable accommodations for all persons with disabilities. Any student with a documented disability requesting academic accommodations should contact the Dean of Students, Melissa Axelsson, for additional information to coordinate reasonable accommodations for students with documented

disabilities (melissa@njctl.org).

NETIQUETTE:

Respect the diversity of opinions among the instructor and classmates and engage with them in a courteous, respectful, and professional manner. All posts and classroom communication must be conducted in accordance with the student code of conduct. Think before you push the Send button. Did you say just what you meant? How will the person on the other end read the words?

Maintain an environment free of harassment, stalking, threats, abuse, insults or humiliation toward the instructor and classmates. This includes, but is not limited to, demeaning written or oral comments of an ethnic, religious, age, disability, sexist (or sexual orientation), or racist nature; and the unwanted sexual advances or intimidations by email, or on discussion boards and other postings within or connected to the online classroom.

If you have concerns about something that has been said, please let your instructor know.

CLASS SCHEDULE:

Module	Module Learning Outcomes	Assignments
1 – Global Impacts of Computing	<ul style="list-style-type: none">• Discuss how various industries have evolved with the improvement of computing.• Analyze the ways that the continuously evolving technology industry has positively and negatively impacted society.• Discuss the legal and ethical responsibilities of citizens in a digital world.	<ul style="list-style-type: none">• Short Answer Assignment• Lab• Mastery Exercises• Module Exam
2 – Bits & Bytes	<ul style="list-style-type: none">• Describe how abstraction is used to make programming easier when developing software.• Explain the abstraction used in computer hardware.• Understand the decimal number system.• Convert between number systems.• Convert from number systems to ASCII.	<ul style="list-style-type: none">• Short Answer Assignment• Lab• Mastery Exercises• Module Exam
3 – Data & Privacy	<ul style="list-style-type: none">• Give examples of big data.• Differentiate between how data is acquired, stored and processed on a computer.• Discuss how visualization can predict trends and patterns.• Explain ways to secure information online and on a device.• Discuss the types of cyber attacks and determine ways you can protect yourself from them.• Assess examples of ways people leave a digital footprint, including whether it is positive or negative.	<ul style="list-style-type: none">• Short Answer Assignment• Lab• Mastery Exercises• Module Exam
4 - Graphics & Images	<ul style="list-style-type: none">• Explain various methods for compressing images and text can be compressed to save storage space.• Describe how images and text are encoded.• Explain why text and image compression is necessary.	<ul style="list-style-type: none">• Short Answer Assignment• Lab• Mastery Exercises• Module Exam

5 – The Internet & Networking	<ul style="list-style-type: none">• Describe how the internet works.• Describe how the client-server model impacts internet usage.• Explain how routers are used to transfer packets of data.• Explain how the domain hierarchy system works.• Describe how search engines determine the results to be displayed.	<ul style="list-style-type: none">• Short Answer Assignment• Lab• Mastery Exercises• Module Exam
6 – Final Exam & Reflection	<ul style="list-style-type: none">• Final Exam Review• Final Reflection• Final Exam	<ul style="list-style-type: none">• Reflection Paper• Module Exam