NEW JERSEY CENTER
FOR TEACHING & LEARNING

Progressive Science Initiative® (PSI®)

CHEM-4704: PSI AP Chemistry

Course Credit: 1.0 Carnegie Unit

Dates & Times:
This course covers all of the content normally taught in a full-year course. While it will take approximately 120 hours to complete, it is asynchronous, which allows students flexibility in scheduling. The exact number of hours will vary based on each student's study style and preferences.

Prerequisite: Chemistry, or Instructor Approval

COURSE DESCRIPTION:
This course is for student to learn the content of PSI AP Chemistry and be prepared to take the AP Exam. Topics include atomic structure, compounds, stoichiometry, solutions, kinetics, equilibrium, thermochemistry and electrochemistry.

STUDENT LEARNING OUTCOMES:
Upon completion of the course, the student will be able to:

1. Identify, understand and communicate the elements of scientific phenomena to solve scientific problems.
2. Demonstrate that chemical elements are fundamental building materials of matter, and can be understood in terms of arrangements of atoms.
3. Explain how chemical and physical properties of materials can be explained by the structure and the arrangements of atoms, ions, or molecules, and the forces between them.
4. Demonstrate mastery of AP Chemistry content on a comprehensive exam.

TEXTS, READINGS, INSTRUCTIONAL RESOURCES:
Required Texts:

- PSI AP Chemistry uses a free digital text book accessible at: https://njctl.org/courses/science/ap-chemistry/

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. 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.
3. Virtual Labs: In each module, a virtual lab write-up will be submitted. Virtual Labs are interactive lab simulations that promote a deeper understanding of the content knowledge being learned through real-world applications and analysis.
4. 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.
5. 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 align to AP College Board Exams.

GRADE DISTRIBUTION AND SCALE:

Grade Distribution:

Module Exams	65%
Final Exam	15%
Labs	10%
Mastery Exercises	10%

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 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 /re-purposing 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, Dr. Rosemary Knab, additional information to coordinate reasonable accommodations for students with documented disabilities (rosemary@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	Required Readings	Assignments
1 – The Atom	• Module presentation	• Lab • Mastery Exercise • Module Exam
2 – Compounds Part I	• Module presentation	• Lab • Mastery Exercise • Module Exam
3 – Compounds Part II	• Module Presentation	• Lab • Mastery Exercise • Module Exam

4 – Chemical Reactions	• Module Presentation	• Lab • Mastery Exercise • Module Exam
5 – Stoichiometry	• Module Presentation	• Lab • Mastery Exercise • Module Exam
6 – Solutions Part I	• Module Presentation	• Lab • Mastery Exercise • Module Exam
7 – Solutions Part II	• Module Presentation	• Lab • Mastery Exercise • Module Exam
8 - Thermochemistry	• Module Presentation	• Lab • Mastery Exercise • Module Exam
9 - Kinetics	• Module Presentation	• Lab • Mastery Exercise • Module Exam
10 - Equilibrium	• Module Presentation	• Lab • Mastery Exercise • Module Exam
11 – Acids & Bases	• Module Presentation	• Lab • Mastery Exercise • Module Exam
12 – Aqueous Equilibria	• Module Presentation	• Lab • Mastery Exercise • Module Exam

13 – Thermodynamics	• Module Presentation	• Lab • Mastery Exercise • Module Exam
14 – Electrochemistry	• Module Presentation	• Lab • Mastery Exercise • Module Exam
15 – Final Exam	• Review previous modules	• Final Exam