

COURSE SYLLABUS

CRITICAL CHEMISTRY

COURSE DESCRIPTION

In this course, students will investigate the chemistry around them: in medicine they take, services they use, and the food they eat. Each of the key topics covered is brought together under the umbrella of geohealth: the study of human health in the context of ecology, environmental science, climate change, agriculture, waste and water management, and diseases. The course is taught through real world case studies, where students take on the role of a chemist working with a team of experts to investigate medical or environmental issues. In these case studies, students learn about topics like atomic structure, phases of matter, stoichiometry, and thermodynamics in scenario-based learning where they complete projects that require critical thinking, making and testing predictions, application, and synthesizing multiple concepts to succeed.

BY THE END OF THE COURSE, THE STUDENT WILL GAIN THE FOLLOWING:

- Describe the structure and properties of matter and interactions at the atomic and molecular level and the role of energy in physical and chemical transformations.
- Develop and apply scientific reasoning and analytical problem solving with a molecular perspective.
- Explain the energetics and kinetics of chemical reactions and physical transformations.
- Characterize the differences in the states of matter and the unique properties associated with each.

COURSE MODULES

- Unit 0 - Introduction
- Unit 1- Atomic Structure
- Unit 2- EMR
- Unit 3- Chemical Bonding
- Unit 4- Solutions
- Unit 5- Chemical Reactions
- Unit 6- Acids and Bases
- Unit 7- Reaction Rates

COURSE MATERIALS

The following items are suggested for this class:

- Notebook
- Calculator

- Headphones/earphones

COURSE ASSIGNMENTS

The course is comprised of lesson-based performance tasks, problem sets, lab reports, instructor/student discussion-based assessments. The total points earned divided by total points possible can be used to determine your grade.

This course will follow the high school grading scale.

ASU PREP GRADE SCALE

Letter Grade	Percent Range	Grade Points
A	100% to 90%	4.0
B	89% to 80%	3.0
C	79% to 70%	2.0
D	69% to 60%	1.0
F	59% to 0%	0

GRADING CATEGORIES

Your course will be divided into three different categories with the following weights:

- Assignments: 40%
- Assessments: 40%
- Discussion-Based Assessments: 10%
- Final Exam: 10%

COMMUNICATING WITH YOUR INSTRUCTOR

Check the Home page for your instructor's contact information.

TECHNOLOGY REQUIREMENTS

DEVICES

Devices that are less than 5 years old is recommended.

- Desktop
- Laptop
- Chromebook
- Microphone and webcam

OPERATING SYSTEMS

- Windows 10 and newer
- Mac OSX 10.6 and newer
- Linux
- ChromeOS

INTERNET SPEED

- High speed internet (recommended)

SUPPORTED BROWSERS

- Edge (latest version)
- Safari (latest version)
- Chrome (latest version)
- Firefox (latest version)

SUPPORTED BROWSER PLUGINS AND SETTINGS

- Javascript enabled
- Flash - latest version is recommended
- 1024x768 is recommended
- Pop-up blockers should be disabled
- Cookies should be enabled.

VIRTUAL REALITY (VR) /AUGMENTED REALITY (AR)

Some courses have Virtual and Augmented Reality experiences which are best viewed with devices that are AR/VR enabled. These experiences can have large file sizes and it is recommended that they are downloaded over wi-fi.

Minimum Devices:

- iPhones 5S
- Samsung Galaxy S5
- Newer VR/AR enabled devices (Recommended)

Please contact support.asuprep.org for further assistance.

ACADEMIC INTEGRITY

In this course we practice the “ASU Prep Way,” and as a part of this policy, it is essential for students to complete their own work at all times. Cheating means using the work of another person as their own, copying information or answers from another student, plagiarizing, allowing another student to copy work, excessive collaboration on an assignment meant to be done individually, or sharing test/quiz questions/answers with students who have not yet taken the test/quiz. If a student is caught violating these guidelines, he/she will receive disciplinary action according to school policy.