Palo Verde College
One College Drive, Blythe CA 92225
(760) 921-5500

Course Control Number: CCC000411842		
Course Outline Approval Dates		
Modality	Curriculum Committee	Board of Trustees
Face-to-face	5/23/19	6/11/19
Correspondence Ed.		
Distance Ed.		

COURSE OUTLINE OF RECORD

Course Information

Course Initiator: Biju Raman				
CB01 - Subject and Course #: CHE 101				
CB02 - Course Title: Introduction to General Chemistry				
New Course: ☐	Non-Substantial: ☒	Substantial: ☐		
Articulation Request:	☒ UC	☒ CSU	☒ CSU-GE	☒ IGETC
Lecture Hours: 54	Laboratory Hours: 54	Clinical/Field Hours:		
CB06/CB07: Course Units: 4.0				
Prerequisites:				
Co-requisites:				
Advisories:	Completion of MAT 095 or above. In addition, completion of ENG 099 basic composition or eligible for ENG 100 or ENG 101 as per AB705 mandate.			

CB03 - TOP Code:	1905.00 - Chemistry, General
CB04 - Credit Status:	D - Credit - Degree Applicable
CB05 - Transfer Status:	A - Transferable to both UC and CSU
CB08 - Basic Skills Status:	N - Course is not a basic skills course
CB09 - SAM Priority Code:	E - Non-Occupational
CB10 - Cooperative Work:	N - Is not part of Cooperative Work Experience Education Program
CB11 - Course Classification:	Y - Credit Course
CB13 - Approved Special:	N - Course is not a special class
CB21 - Prior Transfer Level:	Y - Not Applicable
CB22 - Noncredit Category:	Y - Credit Course
CB23 - Funding Agency:	Y - Not Applicable
CB24- Program Status:	1 - Program Applicable
Transfer Request:	A= UC and CSU

Please select the appropriate box(s) of the modalities in which this course will be offered, and fill out the appropriate sections for that mode.

☒ Face-to-Face – Section B
☐ Correspondence Education – Section C
☐ Distance Education – Section D

JUSTIFICATION OF NEED:

Introduction to General Chemistry meets CSU-GE area B1, IGETC area 5A, and major prep requirements in various science majors.

CATALOG DESCRIPTION:

This course is a preparatory course for students who have never had chemistry and covers the metric system, atoms and elements, bonding, solids, liquids, gases, stoichiometry, solutions, reactivity, and acids and bases. It is appropriate for nursing students, hotel and restaurant management students, as well as students who will pursue higher level chemistry.

COURSE OBJECTIVES:

1. Solve problems using procedures outlined in class.
2. Identify the states of matter and the transitions between them.
3. Compare elements, compounds and mixtures.
4. Apply the Law of Conservation of Matter to balance chemical equations and solve simple stoichiometry problems.
5. Determine atomic structure and chemical properties of elements from their position in the periodic table.
6. Perform conversions between molarity, mass of solute and volume of solution.
7. Draw the Lewis Structure and determine the shape and polarity of a simple compound from its formula.
8. Know the rules for nomenclature of simple inorganic compounds.
9. Carry out simple laboratory experiments using common chemical measuring devices and safety precautions.

STUDENT LEARNING OUTCOMES:

1. Analyze, identify, compare and evaluate the properties of elements, compounds and mixtures.
2. Draw the Lewis Structure and determine the shape and polarity distribution for a simple compound based on its formula.
3. Identify acids and bases, acidic and basic solutions and calculate pH.

A. COURSE OUTLINE AND SCOPE

1. Outline of topics or content:

1. Basic Concepts of scientific thought.
2. Measurement
3. Atoms and Atomic Masses
4. Electronic Configuration of the Atom
5. Chemical Bonding
6. Nomenclature
7. Formula Calculations
8. Chemical Reactions
9. Net Ionic Equations
10. Stoichiometry
11. Molarity
12. Gases
13. Atomic and Molecular Properties
14. Solids and Liquids, Energies of Physical and Chemical Changes
15. Solutions
16. Oxidation Numbers
17. Reaction Rates and Chemical Equilibrium
18. Acid-Base Theory
19. Organic Chemistry
20. Nuclear Reactions

2. If a course contains laboratory or clinical/field hours, list examples of activities or topics:

1. Density of a liquid or solid
2. Valence Shell Electron Pair repulsion method
3. Compound types
4. Synthesis of a compound
5. Reaction types
6. Empirical formula
7. Acids and bases
8. Periodicity
9. Quantum mechanics

3. Examples of reading assignments:

Reading assignments are required. They may include, but are not limited to, the following:
"Aspirin: new life for an old drug" Chemistry in Britain, June, 1996, 8.
"The Image Maker", article on the use of MRI for medical imaging. Chemistry in Britain, June, 1996, 43.
"Room at the bottom", nanotechnology, Chemistry in Britain, July, 1996, 29.
"A great British Invention", history of sulfuric acid manufacture, Chemistry in Britain, July, 1996, 39.

4. Examples of writing assignments:

Writing assignments are required and may include, but are not limited to, the following:
Students will be required to complete a 500 word written report on Chemical Bonding.

5. Appropriate assignments to be completed outside of class:

Homework exercises, textbook reading, Internet research, access of class website, and preparation for class presentations. Outside assignments
may include, but are not limited to, the following:
1 Researching appropiate topics.
2. Reading a scientific journal.
3. Studying as needed to perform successfully in class.
4. Providing written answers to assignmed questions.

6. Appropriate assignments that demonstrate critical thinking:

Critical thinking essays are required, but not limited to, the following:
1. Why do atoms combine to form compounds?
2. How can we predict the products of a chemical reaction?
3. What were the first elements created at the beginning of the universe?

7. Other assignments (if applicable):

As directed by instructor.

☐ Check if Section B is not applicable

B. FACE-TO-FACE COURSE SECTIONS:

Face-to-face education
Is a mode of delivery in which instruction is delivered in a traditional classroom setting, with instructor and students located simultaneously in the same classroom facility.

1. Describe the methods of instruction:

A variety of instructional techniques will be used, including, but not limited to the following: field trips, homework exercises,

lectures, classroom discussions, demonstrations, videos, PowerPoint presentations, computer-aided exercises, and collaborative group exercises. Guest speakers may also be used when appropriate.

2. Describe the methods of evaluating of student performance.

Students will be graded based on their performance in the following areas: exams, quizzes, research papers, homework and field trip exercises, group exercises, participation, and in-class presentations.

3. Describe how the confidentiality of the student's work and grades will be maintained.

Instructors shall make reasonable efforts to protect the confidentiality of students' grades and graded work consistent with practices described in the Family Education Rights and Privacy Act (FERPA).

4. If the course has a lab component, describe how lab work is to be conducted and how student work is to be evaluated.

As part of this course, students will be required to perform laboratory experiments and/or exercises. Lab exercises are designed to supplement lecture and readings with hands-on experiences. For most labs, collaborative learning is required and group members are required to work together collectively. The lab activities will take place during class time. Lab activities/assignments will constitute a significant portion of the students overall grade. Each lab activity is reviewed, corrected and graded by the instructor, providing feedback to the student allowing for any areas of deficiency to be identified.

NOTE: Students will be encouraged by instructors of this course to direct themselves to the College's Disabled Students' Programs and Services (DSP&S) department if they believe they have a learning disability.

☒ Check if Section C is not applicable

C. CORRESPONDENCE EDUCATION COURSE SECTIONS (Correspondence, hybrid correspondence)

Correspondence education
is a mode of delivery in which instructional materials are delivered by mail, courier or electronic transmission to students who are separated from the instructor by distance. Contact between instructor and students is asynchronous.
Hybrid correspondence education
is the combination of correspondence and face-to-face interaction between instructor and student.

1. Describe the methods of instruction.

2. Describe the methods of evaluating student performance.

3. Describe how regular, effective contact between the instructor and a student is maintained.

4. Describe procedures that help verify the individual submitting class work is the same individual enrolled in the course section.

5. Describe procedures that evaluate the readiness of a student to succeed in a correspondence or hybrid correspondence course section.

6. Describe how the confidentiality of the student's work and grades will be maintained.

7. If the course has a lab component, describe how lab work is to be conducted and how student work is to be evaluated.

8. If the course requires specialized equipment, including computer and computer software or other equipment, identify the equipment, and describe how it is to be accessed by students.

Note: Students will be encouraged by instructors of this course to direct themselves to the College's Disabled Students' Programs and Services (DSP&S) department if they believe they have a learning disability.

☒ Check if Section D is not applicable

D. DISTANCE EDUCATION COURSE SECTIONS (online, ITV, hybrid)

Online education
is a mode of delivery in which all instruction occurs online via the Internet. Student and instructor access to email and the Internet is required. Students are required to complete class work using email, chat rooms, discussion boards and other instructional online venues.

Interactive television (ITV)
is a mode of synchronous delivery in which instruction occurs via interactive

television (closed circuit).

Hybrid instruction
is a combination of face-to-face instruction and online instruction.

1. Describe the methods of instruction.

2. Describe the methods of evaluating of student performance.

3. Describe how regular, effective contact between the instructor and a student is maintained.

4. Describe procedures that help verify the individual submitting class work is the same individual enrolled in the course section.

5. Describe procedures that evaluate the readiness of a student to succeed in an online, ITV or hybrid course section.

6. Describe how the confidentiality of the student's work and grades will be maintained.

7. If the course has a lab component, describe how lab work is to be conducted and how student work is to be evaluated.

8. If the course requires specialized equipment, including computer and computer software or other equipment, identify the equipment, and describe how it is to be accessed by students.

Note: Students will be encouraged by instructors of this course to direct themselves to the College's Disabled Students' Programs and Services (DSP&S) department if they believe they have a learning disability.

E. REPRESENTATIVE TEXTBOOKS AND OTHER READING AND STUDY MATERIALS:
List author, title, and current publication date of all representative materials.

Cracolice, Mark S and Ed Peters, 2016, Brooks/Cole Publishing Co., Introductory Chemistry, Hybrid Ed. (w/OWLv2 Printed Access Card) 6th Ed.

SIGNATURES

COURSE INITIATOR: _____ DATE: _____

DIVISION CHAIR: _____ DATE: _____

LIBRARY: _____ DATE: _____

CHAIR OF CURRICULUM COMMITTEE: _____ DATE: _____

SUPERINTENDENT/PRESIDENT: _____ DATE: _____