



COURSE SYLLABUS

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COURSE: CHM 131 INTRODUCTION TO CHEMISTRY

HOURS: Lecture: 3 Lab/Shop: 0 Work Exp/Clinical: 0 Credits: 3

COURSE DESCRIPTION:

This course introduces the fundamental concepts of inorganic chemistry. Topics include measurement, matter and energy, atomic and molecular structure, nuclear chemistry, stoichiometry, chemical formulas and reactions, chemical bonding, gas laws, solutions, and acids and bases. Upon completion, students should be able to demonstrate a basic understanding of chemistry as it applies to other fields.

Note: In accordance with the Comprehensive Articulation Agreement, this course has been approved to satisfy the general education requirement for natural sciences in A.A., A.S., and A.A.S. degree programs.

PREREQUISITE(S): None

COREQUISITE(S): CHM 131A

TEXTBOOK(S) & OTHER SPECIAL REQUIREMENTS:

Timberlake, Karen C. Chemistry: An Introduction to General, Organic and Biological Chemistry, 13th Edition. New York, NY: Pearson, 2018.

ISBN: 9780134554631 Loose Leaf

ISBN: 9780135213766 Online Access

Required Supplies and Materials: Basic Scientific Calculator

STUDENT LEARNING OUTCOMES:

Upon successful completion of this course, the student will be able to:

1. Demonstrate quantitative math skills, including significant figures, error analysis, and unit conversions.
2. Demonstrate comprehension of the different forms of energy, and apply to thermochemical calculations involving heat flow and phase changes.
3. Demonstrate understanding of atomic structure and electron energy levels. Apply these concepts to theories of bonding.
4. Name compounds and write formulas.
5. Apply the conversion of moles and grams to balanced equations. Predict the number of atoms and molecules in a sample. Use experimental data to derive empirical formulas of compounds.
6. Identify types of reactions including identifying oxidation reduction reactions, single and double replacement, combination and decomposition, and combustion reactions.
7. Apply the ideal gas laws to solve problems involving static properties of gases. Apply the concepts of partial pressure and diffusion.

8. Calculate solution concentrations in a range of units and understand solubility limits. Apply colligative property relationships to common systems.
9. Identify the factors affecting reaction rates and the position of equilibrium. Calculate and apply equilibrium constants.
10. Recognize, describe, and predict products of acid-base reactions. Calculate and interpret pH values.
11. Develop familiarity with electrochemical cells and the component oxidation reduction reactions.
12. Develop familiarity with the notation of nuclear and radiochemical reactions and current nuclear health science technologies.
13. Describe principles and experimental procedures clearly and briefly through writing of laboratory reports.

EXPLANATION OF SYLLABUS:

The Student Learning Outcomes listed in this syllabus are those required actions that a student who successfully completes the course must be able to perform or exhibit. The educational experience, however, is a two-way, interactive process involving both the student and his/her instructor. The student must play an active role in the learning process in order to be successful. Each Instructor will provide an Instructor's Course Requirements document at the first class meeting explaining how he/she measures each of the Student Learning Outcomes listed in the syllabus. A student who is unable to accomplish the outcomes will not receive a passing grade in the course.

The information in this RCC Syllabus may not be accurate beyond the current semester. Textbooks and other course materials are subject to change. Students should verify the textbooks at the first class meeting with their instructor prior to purchasing.

RCC ATTENDANCE POLICY:

Regular attendance is considered essential to realize course outcomes. Rules on attendance, tardiness, and leaving class early are addressed in each Instructor's Course Requirements document.

No matter the basis for absence, students are held accountable for academic activities, and faculty may require special work or tests to make up for missed classes.

When courses are delivered through online instruction (DL or Distance Learning) or through a combination of traditional classroom and online instruction (hybrid), class participation is no less important, though its measurement may be somewhat different.

The Nursing Department's requirement related to attendance exceeds the college policy. Nursing students are required to attend 90% of classes, labs, and clinicals. At the discretion of the instructor, a written assignment or makeup clinical may be given for hours missed determined to be unavoidable.

RCC GRADING SYSTEM:

Richmond Community College employs a system of letter grades and corresponding quality points per grade to evaluate a student's performance in meeting the stated goals and objectives for each course.**

SECURITY AND SAFETY PROCEDURES:

RCC's upgraded security procedures require all doors to be locked at class start-time.

All students, faculty, staff, and visitors must wear visible identification (ID) badges. Identification badges should be worn on the front of clothing. RCC employees can stop, restrict, and remove from any school-related activity or function anyone who does not display an ID badge.

STUDENTS WITH DISABILITIES:

Richmond Community College complies with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act, which require that no qualified student with a disability be excluded from participation in or be denied the benefits of any services, programs or activities on the basis of his or her disability. If accommodations in the classroom and/or in extracurricular activities are required, the student is encouraged to contact the Disability Services Counselor in Student Services prior to the start of the semester; however, a student may request accommodations at any time. Reasonable accommodations may take up to three (3) weeks to implement. Richmond Community College is committed to providing support and services to students with disabilities to help them obtain a quality education and to reach their goals. Assistance is provided, as necessary, and is intended to help students participate in and benefit from the programs and activities enjoyed by all students.

WITHDRAWAL:**

Students may withdraw from Richmond Community College curriculum courses up to the published Last Date to Withdraw (90% point of the section term). The student will receive a grade of "W" for the class and will not receive credit for the course. The "W" grade will not be used to compute hours earned or to compute the student's grade point average. If the student presents written documentation of extenuating circumstances which make it impossible to continue in the course after the 90% point, a late withdrawal (occurring after the published Last Date to Withdraw and on or before the last date of the section term) may be approved. A late withdrawal must be approved by the Vice President of Instruction.

In order to formally withdraw from a course, the student must complete a Student Initiated Withdrawal Form. The student is encouraged to read through the refund policies, and discuss the impact of withdrawing with their instructor, advisor, financial aid staff, and/or Veterans' Coordinator.

Individual instructors may have attendance requirements in individual classes. The instructor will notify the student if they are at risk of being withdrawn from an individual course due to the attendance requirements outlined on the Instructor's Course Requirements for an individual course. The instructor will notify the student's advisor and the Veterans' Coordinator if an instructor initiated withdrawal is imminent for courses that have an attendance policy. Instructors not having a course specific attendance policy are not allowed to withdraw students due to attendance.

A withdrawal occurring before the 10% census reporting period ends for that course will not be included on the student's transcript. This is considered dropping a course.

Depending upon what point in the semester the student withdraws from a course, financial consequences may occur for the student if they are receiving any form of financial aid, scholarships, and/or veterans benefits. Students receiving financial aid should refer to the Financial Aid Procedures and Policies provided in the Financial Aid Award Letter Supplement and also available

at <http://richmondcc.edu/admissions/financial-aid>. Students receiving VA education benefits should refer to the Department of Veterans Affairs Procedures provided in the RichmondCC Student Handbook available at <http://richmondcc.edu/student-services/student-handbook>

****Please refer to the online version of RCC's Catalog & Student Handbook for current academic and general policies.**