

CHEM 1215

Credits: 1

## General Chemistry 1 Lab

This course covers the general principles, theories, and concepts of inorganic chemistry for students in engineering, science and related fields. Topics covered include: laboratory safety, measurements, density, chromatography, melting point determination, atomic spectra, conductivity, molecular shape, and chemical reactions.

This lab course accompanies the CHEM1210 Lecture course and is offered in order to show students the usefulness of chemistry in their chosen field of study as well as in the world around them. The course also attempts to show not only that chemistry provides the basis for much that goes on in our world, but is a vital continually developing science. This exposure is designed to allow the student to obtain a sufficient mastery of these topics such that he/she can obtain the requisite knowledge and problem-solving experience for a variety of upper-level science and engineering courses

Co-Requisites: CHEM1210

Modality: On Ground

### Course Objectives

Upon completion of this course, students will be able to

1. Demonstrate appropriate hands-on laboratory and measurement techniques.
2. Demonstrate safe laboratory practices.
3. Demonstrate knowledge of basic chemistry principles.
4. Display understanding of advanced chemical principles including: Matter and Energy, Atomic Theory, Electronic Structure, Chemical Bonding, Chemical Reactions, Stoichiometry, Gas Laws, Solubility Rules, Nomenclature, Periodic Properties, Etc.
5. Utilize these scientific principles to solve a variety of problems relating to other fields of science such as physics, biology, engineering, and environmental science.

### COURSE DETAILS:

This course in conjunction with CHEM 1210 Lecture meets 7 periods per week in room 202/203.

### INSTRUCTOR:

Mrs. Carrie Badger

Phone: 412-429-2500 x2202

Email: [carrie.badger@carlynton.k12.pa.us](mailto:carrie.badger@carlynton.k12.pa.us)

### TEXTBOOK:

Labs as provided by instructor from various sources including Flinn Scientific

## DEPARTMENTAL OR PROGRAM LEVEL ASSESSMENTS:

In order to meet various accreditation requirements for programs, schools or departments may require standardized tools to be used as part of the assessment for a course. Instructors are responsible for following the requirements set forth by the department head, dean, program director, coordinator or faculty representative.

## CREDIT HOUR/CLOCK HOUR POLICY

RMU complies with Commonwealth of Pennsylvania and United States Department of Education regulations for determining the quantity of classroom instruction required to award credit for coursework, regardless of degree level, format, or mode of delivery. As such, RMU is in compliance for accreditation by the Middle States Commission on Higher Education (MSCHE).

Traditional or On-Ground fifteen (15) week Courses:

Credit Hour Equivalencies are met by scheduled class meetings and the scheduled final exam period.

Lab to be performed

1	Intro Session, Safety Talk, Intro to Google Sheets Using Measurements and Calculations
2	Indirect Gravimetric Determination of a Hydrated Compound in a Mixture
3	Finding the Ratio of Moles of Reactants in a Chemical Reaction (Flinn)
4	Molecular Weight of a Volatile Liquid (Flinn)
5	Vapor Pressure and Enthalpy of Vaporization of Water (Flinn)
6	Synthesis and Analysis of Alum (Flinn)
7	Analysis of Hydrogen Peroxide Lab (CER Palmyra, PA)
8	Analysis of Commercial Bleach (Flinn)
9	Electrochemical Virtual Simulation Lab (AACT – <a href="http://teachchemistry.org/classroom-resources/voltaic-cells">teachchemistry.org/classroom-resources/voltaic-cells</a> )
10	Enthalpy of Neutralization Lab (CER Palmyra, PA)
11	Thermochemistry and Hess's Law Lab (Flinn)
12	Finding the Heat of Vaporization of Water Lab
13	Qualitative Analysis of Cations (Flinn)
14	Silver Holiday Ornament Lab (Flinn)
15	VSEPR Molecular Model Lab (Virtual Simulation, traditional ball and stick models, Happy Atoms interactive)

#### RMU GRADING SCALE:

93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
70-76	C
60-69	D
<60	F

#### GENERAL INFORMATION:

The schedule and procedures in this course are subject to changes by the instructor which will be announced in class, via your official school email account or in Google Classroom.

### CLASS PARTICIPATION:

Attendance in each scheduled class is strongly advised. As it is a requirement of the university, attendance will be taken at each class session. It is the policy of this department that if a student misses more than 25% of the classes, he/she will automatically receive an "F" grade. Changes in the class schedule, information on coursework, exams and other notices will usually be given in class. It is your responsibility to keep up-to-date with these changes.

Office hours will provide opportunities for students to ask questions, get clarification on lectures, class notes, or other related tasks. Office hours will also be used to learn how to solve problems and take deeper dives into the material. Office hours are intended to reinforce your knowledge of topics/concepts rather than a class to reteach a concept/topic. When warranted, you are expected to make use of office hours provided by your instructor.

### MISSED LABS OR ASSIGNMENTS:

Be responsible for your own education. If you miss a quiz or exam there may be no opportunity to make up the assignment depending on the schedule of the course. Your instructor reserves the right not to grant due date extensions for assignments. Your instructor reserves the right to deduct points for assignments that are turned in late. Under no circumstances will late homework be accepted once the instructor has returned the graded homework to the class. Your instructor reserves the right not to grade bonus questions for assignments turned in late. If you miss a class, you must be able to confirm your excuse with legitimate documented evidence. Ask questions and get involved in class discussions. Your participation and willingness to learn may be used as an additional grade determination in borderline situations. For face-to-face classes, hardcopies of worksheets and homework assignments which are to be completed by the student and returned to the instructor should be submitted in class. When specified by your instructor, some assignments will be submitted through Google Classroom.

### CLASSROOM ETIQUETTE:

Be on time and remain for the entire period. Arriving late and/or leaving early is inconsiderate of your colleagues. Please ask questions or make comments that will benefit the entire class, but save your private conversations for another time. You may not realize how disturbing your "private" conversations are when others are trying to listen to a lecture. Students should refrain from other activities which can be distracting either to the instructor or to other students. Put your cell phones, iPods, and other personal electronic devices away and refrain from using them during class. Sending and receiving of phone calls AND TEXT MESSAGES is inappropriate in class and will not be tolerated.

## ACADEMIC INTEGRITY POLICY:

Academic Integrity is valued at Robert Morris University. All students are expected to understand and adhere to the standards of Academic Integrity as stated in the RMU Academic Integrity Policy, which can be found on the RMU website at [www.rmu.edu](http://www.rmu.edu). Any student who violates the Academic Integrity Policy is subject to possible judicial proceedings which may result in sanctions as outlined in the Policy. Depending upon the severity of the violation, sanctions may range from receiving a zero on an assignment to being dismissed from the university. If you have any questions about the policy, please consult your course instructor.

Copying material from any location (including the internet) and submitting it as your own work is unacceptable. This is viewed as plagiarism and will result in no credit for the assignment. It is encouraged that students form study groups and work together to understand the course material, but each student is responsible for doing his/her own work. Copying work from another student is viewed as plagiarism, does not display the required understanding of the material, and will result in no credit for the assignment. If you are unfamiliar with the definition of plagiarism, refer to the RMU academic integrity webpage

(<http://academicaffairs.rmu.edu/academic-integrity>) and to any number of excellent online sources:

Students may not collaborate with any other individuals on work turned in for this course, except when such collaboration is explicitly permitted by the instructor. This policy applies specifically but not exclusively to homework and worksheets. While students may work together in study groups in order to enhance their understanding of the course material, copying another student's homework or worksheet answers constitutes cheating. Students may not turn in work for credit in this course that has also been turned in for credit in another course, or work that substantially consists of material turned in for credit in another course. As a student and as a member of the scientific community, you have an ethical and legal obligation to practice proper writing techniques which include citation of sources and proper referencing of materials used. RMU in general and your instructor specifically has no tolerance for copying and plagiarism. There is no excuse for either in any case. When in doubt, submit your assignment to your instructor early for review. Receipt of this syllabus and your continued enrollment in this class constitutes an agreement to follow the academic integrity policy.

The instructor reserves the right to utilize any technology or mechanism to ensure that students comply with academic integrity. Software filtering programs may be used to review any submissions during the semester. During exams students may be segregated, sequestered or provided with unique exams to help ensure academic integrity. Student exams and quizzes may be compared to help identify the sharing of information

*Should a student be found guilty of a Major Violation through the Robert Morris University, Academic Integrity Committee process, the student will receive a final letter grade of an "F" for the course.*

## ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES:

Robert Morris University welcomes students with disabilities into all of the University's educational programs. If you have (or think you may have) a disability that would impact your educational experience in this class, please contact your instructor to ensure they have an up-to-date copy of your IEP/504 or you can reach out to Pupil Personnel for additional assistance.

### FERPA - FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT:

The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records. FERPA gives parents certain rights with respect to their children's education records. These rights transfer to the student when he or she reaches the age of 18 or attends a school beyond the high school level. Students to whom the rights have transferred are "eligible students".

To find out more about how the law affect you please visit:

<http://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html>

### UNDERGRADUATE COURSE REPETITION:

Per the University's Undergraduate Repeating Courses Policy (please refer to the official ACADEMIC POLICIES webpage which can be found on the RMU website at [www.rmu.edu](http://www.rmu.edu)):

A student may repeat a course in which a grade of D, F, N, or L was received. Students must repeat courses even if a passing grade was earned if a particular course requires a higher minimum grade.

If the student receives a lower grade after repeating a course, the student's cumulative quality-point average will be based on the most recent grade earned.

Students who have not attained the minimum passing grade for courses required in their program of study after three attempts (or other program requirements) may be dismissed from the program.

### SYLLABUS CHANGES:

The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes will be by announcement in class or by written notice via email or the course Google Classroom.

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Pre-Requisites:

Co-Requisites: CHEM 1215

Credits: 1

15 Week

Comm Skills

Program Objectives for: <b>Biology</b>	
Produce graduates that are:	
1. Knowledgeable in biological science subject matter and processes.	PO1
2. Competitive for employment, graduate and professional schools.	PO2
3. Able to interpret, analyze, evaluate, and construct arguments on a scientific topic.	PO3
4. Able to effectively communicate scientifically.	PO4
5. Experienced with scientific technical skills, methodology, real world problems and situations.	PO5

Course Objectives	Program Objectives
Upon completion of this course, students will be able to	
1. Demonstrate appropriate hands-on laboratory and measurement technique.	PO1, PO2, PO5
2. Demonstrate safe laboratory practices.	PO1, PO2, PO5
3. Demonstrate knowledge of basic chemistry principles.	PO1, PO2, PO5
4. Display understanding of advanced chemical principles including: Matter and Energy, Atomic Theory, Electronic Structure, Chemical Bonding, Chemical Reactions, Stoichiometry, Gas Laws, Solubility Rules, Nomenclature, Periodic Properties, Etc.	PO1, PO2, PO3, PO4, PO5
5. Utilize these scientific principles to solve a variety of problems relating to other fields of science such as physics, biology, engineering, and environmental science.	PO1, PO2, PO3, PO5

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Pre-Requisites:                      Co-Requisites: CHEM 1215      Credits: 1      15 Week                      Comm Skills

Program Objectives for: Chemistry Minor	
Students completing the chemistry minor will:	
1. Understand chemistry subject matter and processes and be able to interpret analyze, evaluate, and construct arguments on a scientific topic	PO1
2. Be experienced with scientific technical skills, methodology, real world problems and situations specifically within the chemistry discipline.	PO2
3. Be able to effectively communicate using scientific terminology and nomenclature	PO3

Course Objectives	Program Objectives
Upon completion of this course, students will be able to	
1. Demonstrate appropriate hands-on laboratory and measurement technique.	PO1, PO2
2. Demonstrate safe laboratory practices.	PO1, PO2
3. Demonstrate knowledge of basic chemistry principles.	PO1, PO2
4. Display understanding of advanced chemical principles including: Matter and Energy, Atomic Theory, Electronic Structure, Chemical Bonding, Chemical Reactions, Stoichiometry, Gas Laws, Solubility Rules, Nomenclature, Periodic Properties, Etc.	PO1, PO2, PO3
5. Utilize these scientific principles to solve a variety of problems relating to other fields of science such as physics, biology, engineering, and environmental science.	PO1, PO2, PO3,