

Instructor: Dr. Jeremiah K.N. Mbindyo
Office: Caputo 321
Email: Jmbindyo@millersville.edu
Office hours: Monday 10 a.m. -12 noon Wednesday 10 a.m. -12 noon
Friday 10-11a.m.
Other times can be scheduled by arrangement, preferably in person or by email.
Venue: Brossman 102
Class hours: M W F 2:00- 2:50 p

Required materials:

1. **A. Course Text:** "Basic Chemistry" by Timberlake and Timberlake, 5nd edition (ISBN-13:978-0134138046). The 4th or 6th Editions (ISBN-13: 9780321809285 and 9780134878119) are also acceptable. Access card for MasteringChemistry is NOT required. **B. Textbook:** Chemistry, 2e from OpenStax, <https://openstax.org/details/books/chemistry-2e>. Print ISBN 194717262X, Digital ISBN 1947172611. You can access the textbook online in the web view (recommended) or download as a PDF for free. The book can also be purchased on iBooks, from campus bookstore, OpenStax, Amazon or any other source online.
2. Calculator: A simple calculator that can do scientific notation, logarithms, and exponents.
3. You are required to access D2L and check your Millersville email regularly.
4. **Scientific Calculator.** An inexpensive one is sufficient. It should be capable of doing square roots, logarithms (log, ln), and exponentials (10^x , e^x , y^x).
5. **Other requirement:** You must open a Marauder account and access D2L regularly.

Description:

This course is designed to prepare you to succeed in the general chemistry sequence CHEM 111 and CHEM 112. It is not a survey of chemistry. It is an intensive review of the fundamentals of chemistry, with particular emphasis placed on solving chemistry problems. Topics include: measurements, formulas, nomenclature, equations, stoichiometry, atomic structure, molecular structure and solutions.

Course Objectives:

By the end of the course, you should be able to:

1. Demonstrate an understanding of the rules for determining significant digits and working with exponential notation.
2. Use a calculator to perform simple mathematical operations involving significant digits and exponential notation.
3. Interconvert units in the English and metric systems of measurements using the conversion factor method.
4. Solve simple density problems involving solids and liquids.
5. Classify common substances as pure elements, compounds or mixtures.
6. Identify the three basic sub atomic particles and explain the relative mass of each.
7. Show the correct notation for writing the symbol of an element.
8. Deduce the atomic number, atomic mass, number of protons, neutrons and electrons given the symbol of an element.
9. Write electronic configuration of elements given their atomic number or symbol.
10. Calculate the atomic mass of an element given the composition of its isotopes.
11. Explain simple trends in the properties of elements in the periodic table.
12. Write the Lewis structure of simple compounds.

13. Name simple ionic or covalent compounds given the formula, and write down the formula of a compound given its name.
14. Calculate number of moles using mass and molar mass.
15. Determine the number of moles in standard solutions.
16. Calculate the moles of products or reactants from equation using the rules of stoichiometry.

Course Policies:

Lecture

We will meet 3 times a week for 50 min lecture/discussion.

Homework

You will be assigned homework problems covering materials in each chapter. The solutions to these problems are provided in the text. Homework will not be collected for grading. However, quizzes will have questions very similar to those in the practice problems and homework.

Problem of the day

You can expect a problem based on the materials covered each day at the end of class when there is no quiz. However, the problem of the day may be postponed or cancelled if there is limited the time available by the end of the class period.

Worksheets and Quizzes:

During some class meeting times, you will be assigned problems to work on. I will go round the class and answer questions. The problems will not be collected for grading. However, at the end of the class period, a quiz maybe given that will test portions of the materials covered.

Peer Learning Hours: There is free tutoring available by students who have already taken the class. No need to make an appointment simply come work on chemistry with your peers and get help from experienced tutors. Location: Caputo 211.

Day	Evening Session
Tue	5:30 -7:30 p.m.
Wed	5:30 -7:00 p.m.
Thur	4:30 -6:30 p.m.

D2L and email

Course materials will be posted in D2L. You need to logon to D2L regularly. Your MU email to communicate to you often. You need to check your email regularly.

Attendance

You are expected to attend all classes and to participate in discussion. In case of unavoidable absence, you should notify me in advance, preferably in person. It is your responsibility to make up any work missed when you were absent. You should also pick up any handouts, tests, assignments etc. that were handed out during your absence from my office during office hours. Uncollected work is used to track attendance. Quizzes, problems of the day or tests missed due to unexcused absence cannot be made up.

Decorum

Talking or distracting others during lectures is not permitted. Anyone doing so may be asked to leave the class. You are expected to treat other students in the class with respect always.

Exams

There will be three hour exams and one final.

Grade Criteria:

Your grades will be calculated as follows:

Quizzes and worksheets	40 %
Problem of the day	10 %
Hour exams	30 %
Final exam	20 %
Total	100

Grade distribution:

A	90-100%	B-	78-79%	D+	65-67%
A-	88-89%	C+	75-77%	D	64-65%
B+	85-87%	C	70-74%	D-	60-63
B	80-83%	C-	68-69%	F	< 60%

Tentative order of topics

Chapter	Topic	Exam Date
Chap 1	Introduction	
Chap 2	Measurements	
Chap 3	Matter	Exam 1 (9-26)
Chap 4	Atoms and Elements	
Chap 5	Electronic structure and the Periodic table	
Chap 6	Ionic and Molecular Compounds	Exam 2 (10-17)
Chap 7	Chemical Quantities	
Chap 9	Chemical Quantities in Reactions	Exam 3 (11-14)
Chap 10	Bonding and Molecular Structure	
Chap 12	Solutions	Final Exam (12-11)
Final Exam – Thur - Dec 11, 10:15 a.m. -12:15 p.m.		

Revised University Class Attendance Policy

The University supports departmental and faculty class attendance policies that are reflective of and consistent with University approved guidelines. Faculty will include their class attendance policy in their syllabi given to all students in their classes at the start of the semester.

University approved guidelines:

1. **Students are expected to attend all classes.** It is the student's responsibility to complete all course requirements even if a class is missed. If a student misses class for an officially excused reason, then he/she is entitled to make up the missed work but only at the convenience of the faculty member. Responsibility for materials presented in, assignments made for, and tests/quizzes given in regularly scheduled classes lies solely with the student.
2. **The University policy is that faculty will excuse absences for the following reasons:**
 - a. personal illness,
 - b. death or critical illness in the family,
 - c. participation in a university-sponsored activity,
 - d. jury duty,
 - e. military duties, or
 - f. religious holidays
3. **Faculty judge the validity of student absences from class within the University's approved guidelines and may require documentation for excused absences.** Faculty will evaluate any reason, other than those listed above, for a student missing class and determine whether the absence is justified. In these circumstances, a student may make up missed work at the discretion of the instructor.
4. **In the case of foreseeable absences, students are encouraged to notify the faculty member in advance.** A student who will miss class due to participation in an official University activity must notify the instructor well in advance of the activity to assure that the absence is excused.

Appeals:

As with any academic issue, students may exercise their right to appeal adverse attendance decisions. Please refer to the current undergraduate catalog for the complete Academic Appeal procedure.

Title IX Statement

Millersville University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment, comply with Title IX of the Education Amendments of 1972, 20 U.S.C. §1681, et seq., and act in accordance with guidance from the Office for Civil Rights, the University requires faculty members to report to the University's Title IX Coordinator incidents of sexual violence shared by students. The only exceptions to the faculty member's reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. Faculty members are obligated to report to the person designated in the University Protection of Minors policy incidents of sexual violence or any other abuse of a student who was, or is, a child (a person under 18 years of age) when the abuse allegedly occurred.

Information regarding the reporting of sexual violence, and the resources that are available to victims of sexual violence, is available at <http://www.millersville.edu/social/eq/title-ix-sexual-misconduct/index.php>.

Millersville University Policies

1. Academic Honesty Policy link [Governance Manual \(millersville.edu\)](#); for additional information please see the following: [What is Academic Integrity? | Millersville University](#)
2. Attendance Policy link: [Class Attendance Policy | Millersville University](#)
3. Inclusion Statement: [Millersville University Inclusion Statement | Millersville University](#)
4. Land Acknowledgement: [Land Acknowledgement | Millersville University](#)
5. Policy on Delays and Cancellations link [Policy on Delays & Cancellations | Millersville University](#)
6. Chosen Name FAQs link [Preferred Name FAQs | Millersville University](#)
7. Privacy Rights under FERPA link [Annual Notification of Student Rights Under FERPA | Millersville University](#)
8. Student Conduct and Community Standards Handbook link [studentcodeofconduct.pdf \(millersville.edu\)](#)