

COURSE SYLLABUS

Instructor: Dr. Jeremiah K.N. Mbindyo
Office: Science & Technology Building 321
Email: Jmbindyo@millersville.edu
Office hours: Monday 11:00-12 :00 Wednesday 11-12
Tuesday 12:30- 2:00 Thur 12:30-2:00
Other times can be scheduled by arrangement, preferably in person or by email.
Venue: Brossman 102
Class hours: MWF 10-11

Required materials:

1. **In preparation for College Chemistry 5th Edition By G.W. Daub and W.S. Seese.**
2. **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).
3. **Other requirement:** You must open a marauder account and access blackboard.

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:

- a) Demonstrate an understanding of the rules for determining significant digits and working with exponential notation.
- b) Use a calculator to perform simple mathematical operations involving significant digits and exponential notation.
- c) Interconvert units in the English and metric systems of measurements using the conversion factor method.
- d) Solve simple density problems involving solids and liquids.
- e) Classify common substances as pure elements, compounds or mixtures.
- f) Identify the three basic sub atomic particles and explain the relative mass of each.
- g) Show the correct notation for writing the symbol of an element.
- h) Deduce the atomic number, atomic mass, number of protons, neutrons and electrons given the symbol of an element.
- i) Write electronic configuration of elements given their atomic number or symbol.
- j) Calculate the atomic mass of an element given the composition of it's isotopes.
- k) Explain simple trends in the properties of elements in the periodic table.
- l) Write the Lewis structure of simple compounds.
- m) Name simple ionic or covalent compounds given the formula, and write down the formula of a compound given its name.
- n) Calculate number of moles using mass and molar mass.
- o) Determine the number of moles in standard solutions.
- p) 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. Solutions to these problems will be posted in blackboard. You are also expected to work on the practice problems at the end of each chapter of the class text. The solutions to these problems are provided in the text. I will not collect the homework 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 to the next class if discussions extend and we run out of time.

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 will be given that will test portions of the materials covered.

Blackboard and email

Solutions to homework problems and other course materials and information will be posted on blackboard. You must open a marauder account and logon to blackboard regularly to access course information. It may be possible to set up mail forwarding to whatever email you prefer after that. I will use your marauder 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 hand outs, tests, assignments etc. that were handed out during your absence from my office. Quizzes, problems of the day or tests missed due to unexcused absence can not be made up.

Decorum

Talking or distracting others during lectures is not permitted. Any one 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 two hour exams and one final.

Grading Criteria:

Your grades will be calculated as follows:	Quizzes and worksheets	40 %
	Problem of the day	10 %
	Hour exams (2)	30 %
	Final exam	20 %

Grade distribution:	A 90-100%	B 80-83%	C 70-73%	D- 60-63%
	A- 88-89%	B- 77-79%	D+ 67-69%	F < 60%

B+ 84-87% **C+** 74-76% **D** 64-66%

Tentative order of topics:

Chapter	Topics
1	Significant digits, Algebra, Scientific notation
2	Measurements: SI Units, Conversion factors
3	Matter: Elements and compounds
4	Atoms, electrons, valence electrons
Exam 1	
5	Periodic Table
6	Compounds, Lewis structures
7	Nomenclature
8	Chemical equations
Exam 2	
9	Chemical calculations
11	Stoichiometry
13	Solutions
Final Exam	Friday May 6, 8-10 a

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.