

Chemistry 108
Fundamentals of Chemistry
Spring 2014

Course Instructor: Dr. Jie Floyd
Office: 230 Collier Hall of Science, 610-217-7589
Email: jiefloyd@moravian.edu

Lecture: Mon. Wed., Fri. 10:20-11:10, 204 Collier

Office Hrs: Mon. 11:15am-12:15pm

Labs: Mon. 1:15-4:15pm, 210 Collier
or Tues or Thurs. 8:30-11:30am, 210 Collier

Required Materials:

- **Text:** Karen C. Timberlake *Chemistry. An introduction to General, Organic, and Biological Chemistry, 11th Edition, Prentice Hall*
- **Scientific Calculator:** Must be able to calculate logs | no cell phones!

Course Goals:

- Use real-life examples, particularly those that are health related, to illustrate the relationship between chemical principles and living organisms.
- Relate the properties of atoms and molecules with the organization of elements in the periodic table.
- Recognize relationships between physical properties of atoms, compounds, and molecules; and the physical states of matter, solubility, reactivity, molecular shape, and biochemical function.
- Apply qualitative and quantitative aspects of chemistry to problem solving.
- Use the scientific method to actively seek knowledge through the study of chemical processes in a laboratory environment.

Attendance: It will be *very difficult* for you to learn chemistry concepts and follow them over the semester if you miss course meetings (class, problem sessions, and laboratories). If you anticipate an unavoidable absence, please *notify me ASAP before* you are absent. Makeup exams, and labs are given at the discretion of the instructor. As a reminder, the college policy on attendance can be found at <http://www.moravian.edu/studentLife/handbook/academic/academic.html>

Academic Honesty: Please be familiar with the college policy on academic honesty
<http://www.moravian.edu/studentLife/handbook/academic/academic2.html>

Learning Differences: Students should contact the Office of Learning Services for disclosure of a learning difference and to request appropriate amendments to this course
<http://www.moravian.edu/studentLife/handbook/academic/academic4.html>

Grading: Your grade will be determined only by the the total points you achieve.

Percentage Based Grading Scale

| | | | |
|--------|----|-------|----|
| 97-100 | A | 73-76 | C |
| 90-92 | A- | 70-72 | C- |
| 87-89 | B+ | 67-69 | D+ |
| 83-86 | B | 63-66 | D |
| 80-82 | B- | 60-62 | D- |
| 77-79 | C+ | < 60 | F |

There are a total of 100 pts that will be factored into your final grade in this course. A point on an exam, homework, or laboratory counts the same amount.

| | |
|-----------------|--------------|
| 4 Exams | 60 pt (60%) |
| Graded homework | 15 pts (15%) |
| Labs | 25 pts (25%) |
| <hr/> | |
| Total | 100 pts |

Exams: Three in-class exams (14 pts each) and one final (18 pts).

While the material you will be responsible for each exam could vary, (dependent upon the pace of the course) the following dates will be used for examinations:

| | |
|--------|---------------------------|
| Exam 1 | Monday, February 10 |
| Exam 2 | Monday, March 17 |
| Exam 3 | Monday, April 14 |
| Final | Tuesday, April 30, 1:30pm |

Graded homework: Homework will be assigned based on each chapter or chapters. These assignments will be collected and the grade from these assignments will constitute the homework portion of the grade. To get credit for a collected homework assignment, the student must be present at the lecture during which the assignment is collected. **No late assignments will be accepted.** All assignments not turned in will be assigned a grade of zero, unless a written excuse for absence from the lecture is provided. Total homework grade is the sum of the fifteen highest grades of homework assignments.

Non-graded homework: All the questions with a red number in each chapter in the textbook are assigned as non-graded homework. These questions have answers at the end of the chapter. You should work on these problems in order to get a better understanding of the material covered in this course.

Labs: Laboratory experiences (2.5 pts for each lab) consisting of:

- Group write up and summary data
- Individual participation, being on time, and working safely
- Group participation, the group cooperates positively

Total lab grade is the sum of ten highest grades of laboratories.

Makeup Labs, and Exams: If an excused lab is missed, arrangements should be made to make up the lab within one week upon students' return during lab sections. Any unexcused missed lab will be assigned the grade of zero. You are responsible for understanding the content of the material covered during a missed lab. Makeup exams will be given at the discretion of the instructor for absences that have been documented by the Dean of Students Office and/or a health professional.

Class Etiquette:

Turn off or silence cell phones! NO-text messaging during class

- Do not record or take pictures of classmates or instructors without their permission.

Email Etiquette: Although email may seem like an instantaneous form of communication, it is not. Just because you sent me an email, does not mean that I have: 1) read it, 2) understood it, and/or 3) approved any requests you made in it.

- I will reply individually, or as a class response to all email received.
- Assume that email sent between the hours of 5PM and 9AM has NOT been read.

Pace of the Course: The schedule below is a guide for course coverage this semester.

Tentative Lecture Schedule

| Week Beginning | Topic | Text Ref. Chapter |
|----------------|--|-------------------|
| 01-13 | Measurements, Matter, Energy | 1,2 |
| 01-20 | Atoms and Elements | 3 |
| 01-27 | Compounds and Chemical Bonds | 4 |
| 02-03 | Chemical Quantities and Reactions | 5 |
| 02-10 | Exam 1 Gases and Solutions | 6,7 |
| 02-17 | Acids and Bases | 8 |
| 02-24 | Nuclear Radiation | 9 |
| 03-03 | Spring Break | |
| 03-10 | Alkanes, Unsaturated Hydrocarbons | 10, 11 |
| 03-17 | Exam 2 Organic Compounds with Oxygen and Sulfur | 12 |
| 03-24 | Carbohydrates | 13 |
| 03-31 | Carboxylic Acids, Esters, Amines and Amides | 14 |
| 04-07 | Lipids, Amino Acids | 15, 16 |
| 04-14 | Exam3 Proteins, Enzymes, Nucleic Acids | 16, 17 |
| 04-21 | Protein Synthesis, Metabolic Pathways, Energy Production | 17, 18 |
| 04-30 | Final Exam 1:30pm | |

Lab Schedule: Lab starts on January 21, Tuesday, ends on April 14, Monday.
Please note that lab sequence may be changed if deemed necessary.

Date start /end

| | | |
|-------------|-----------------------|---|
| 01-21/01-27 | Lab 1 | Measurement |
| 01-28/02-03 | Lab 2 | Ions |
| 02-04/02-10 | Lab 3 | Modeling Molecular Structure and Shapes |
| 02-11/02-17 | Lab 4 | Solubility of Ionic and Molecular Compounds |
| 02-18/02-24 | Lab 5 | Partial pressure CO ₂ in air |
| 02-25/03-10 | Lab 6, & spring break | Solutions |
| 03-11/03-17 | Lab 7 | OTC medicines |
| 03-18/03-24 | Lab 8 | Esters |
| 03-25/03-31 | Lab 9 | Acid and base |
| 04-01/04-07 | Lab 10 | Carbohydrate |
| 04-08/04/14 | Lab 11 | Protein |