Chemistry 108
Fundamentals of Chemistry
Spring 2009

Course Instructor: Professor Stephen Dunham
Office: 214 Collier Hall of Science, 610-861-7103
Email: stephendunham@moravian.edu

Lecture: M,W, F 10:20-11:10, 204 Collier
Problem Session: R 10:20-11:10, 204 Collier

Office Hrs: Posted each week on **blackboard**, or by appointment

- You are encouraged to try stop-in-visits anytime. If I am not available, I will tell you and we can schedule another time to meet.

Lab Instructor: Professor Carol Libby
Office: 213 Collier Hall of Science, 610-861-1629
Email: cblibby@cs.moravian.edu

Labs: M or F 12:45-3:45, 211 Collier
T 8:30-11:30, 211 Collier

Required Materials:

Text: Essentials of General, Organic, and Biochemistry An Integrated Approach, by Denise Guinn, Rebecca Brewer, *proof* 2009, Wiley.

Scientific Calculator: Must be able to calculate logs | no cell phones!

Black Board Web Site: **http://blackboard.moravian.edu/**

You must enroll in our Chemistry 108 blackboard site.

- Throughout the semester, all handouts will be posted to the course blackboard page. Please access this early and often!

Lab Goggles: Safety glasses will be provided in the laboratory. They must be worn at all times in the laboratory!

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 controlled environment.

Attendance: Obviously, 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). As a reminder, the college policy on attendance can be found at http://www.moravian.edu/studentLife/handbook/academic.htm . If you anticipate an unavoidable absence, please notify me ASAP before you are absent. Makeup quizzes, exams, and labs are given at the discretion of the instructor.

Academic Honesty: Please be familiar with the college policy on academic honesty http://www.moravian.edu/studentLife/handbook/academic2.htm). Because this course involves small group learning activities, each student may exchange experimental details and data with her/his lab partner and classmates. However, any work submitted in your name is to be your work alone. You are encouraged to discuss work with others on assignments and labs, but merely copying answers is not acceptable.

Learning Differences: Students should contact the Office of Learning Services for disclosure of a learning difference and to request appropriate amendments to this course.

Grading: You are not in competition with anyone else in this class. Your grade will be determined only by the percentage of the total points you achieve. In the event that the class average on any exam, quiz, or lab falls below 75%, that score will be curved so that the class average is 75%.

Percentage Based Grading Scale

97-100	**A !**	**73-76**	**C**
93-96	**A**	**70-72**	**C-**
90-92	**A-**	**67-69**	**D+**
87-89	**B+**	**63-66**	**D**
83-86	**B**	**60-62**	**D-**
80-82	**B-**	**< 60**	**F**
77-79	**C+**		

There are a total of 1000 pts that will be factored into your final grade in this course. A point on an exam, quiz, or laboratory counts the same amount.

Exams	550 pts
Quizzes	150 pts
Participation	50 pts
Labs	250 pts
Total	1000 pts

Exams: Three in-class exams (130 pts each) and one final (160 pts).
While the material you will be responsible for on each exam could vary, (dependent upon the pace of the course) the following dates will be used for examinations:

Exam 1	Thursday, February 12
Exam 2	Thursday, March 19
Exam 3	Thursday, April 16
Final	TBA

Quizzes: During the first lecture of each week, a quiz (15 pts each, 12 quizzes per semester) will be given on previous weeks lecture material. Your lowest two quiz scores will be dropped at the end of the term.

Participation: Activities require input from everyone in a group. Your group work will result in a mark (+1, 0, or -1) for each activity. At the end of the term these marks will be converted into a score out of 50 pts.

Labs: Twelve laboratory experiences (25 pts total for each lab) consisting of:

- A group write up that is handed in before leaving lab 18pts
- Group participation, being on time, and working safely 3pts
- Blackboard review questions about the laboratory 4pts

Your two lowest lab scores will be dropped at the end of the term.

Makeup Quizzes, Labs, and Exams: Missed quizzes and labs will typically be counted as one of the "dropped" scores (see grading section above). You are responsible for understanding the content of the material covered during a missed quiz or 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.

Activities and Problem sets: Activities and/or problems will be given for each chapter. <u>These will not be graded</u>, and are intended to provide you with the "minimum" exercises that cover the important concepts in that chapter. These activities and problems will provide much of the content for quiz and exam questions.

If you don't understand an activity or problem:

- Rework the activity and suggested problems in the chapter
- Attempt to work example problems and similar problems at the end of the chapter
- Send me a message and/or schedule an appointment

Class Participation: Nearly all concepts in this course will build upon each other, and this requires you to understand the material in previous activities to build a bridge to the new material we will be learning.

If you have questions that are not answered in class, you can start a forum on the discussion board at the **Blackboard** web site, come to my office hours, email, or schedule an appointment.

Class Etiquette:

- Turn off or silence cell phones! <u>NO-text messaging during class</u>
- 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 10 PM and 9AM has NOT been read

Tips for Success:

1. The course uses a discussion format that depends upon your **active** contribution on a daily basis. **You will be asked to draw conclusions on data BEFORE any class discussion has taken place**. This process is unconventional for many science courses, and it may be uncomfortable at first because you will need to rely on logic and not on "finding the answer" by Googling your textbook or lecture notes.
2. After class, read the text that compliments the activity, and work the suggested problems. If you are struggling with the problems, redo the activity on your own or in a small group to reinforce the concepts.
3. If you are studying in a group, be certain that you can "go it alone". Spend some time alone answering the same problems, or attempting related problems in the text.

Pace of the Course: The schedule below is a guideline for the course coverage this semester. Check the Blackboard web site for an updated reading list for each week.

Week	**Beginning**	**Anticipated Text Coverage**	
Jan	19	Ch # 1	Measurements I Atoms and Elements
Jan	26	Ch # 2	Compounds
Feb	2	Ch # 2-3	Shapes of Molecules
Feb	9	Ch # 3	**Exam #1 CH 1-3**
Feb	16	Ch # 4	Solids, Liquids, and Gases
Feb	23	Ch # 5	Solutions, Colloids, and Membranes
Mar	2	**SPRING BREAK**	
Mar	9	Ch # 6	Hydrocarbons and Structure
Mar	16	Ch # 7	Organic Functional Groups **Exam #2, CH 4-6**
Mar	23	Ch # 8	Chemical Equations, Energy, and Kinetics
Mar	30	Ch # 9	Acids, Bases, pH and Buffers
April	6	Ch # 10	Reactions of Organic Functional Groups
April	13	Ch # 11	Peptides, Proteins, & Enzymes **Exam #3, CH 7-10**
April	20	Ch # 12	Carbohydrate Structure
April	27	Ch # 13	Lipid Structure
May	4		**Final Exam**, **CH 11-13**, and Cumulative **CH 1-10**