

**Chemistry 118
Chemistry of Life
January 2009**

Lecture Instructor:

- Julie T. Millard, Dorros Professor of Life Sciences
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Laboratory Instructors:

- Lisa M. Miller (laboratory section A)
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- Richard A. Wynne (laboratory section B)
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Office Hours:

Professor Millard's office hours will be announced in class each week. Please do not hesitate to make an appointment if you cannot make the scheduled times. Email is also a very convenient way to receive a quick answer to a question. For questions about the laboratory, you should see your laboratory instructor.

Goals:

To develop an appreciation of the aspects of chemistry that are essential to the functioning of the world around us through lectures and laboratory experiences, many of which will involve the chemistry of crime. Initially we will consider the fundamental chemical principles that form the basis of all life, and then we will focus specifically on the chemistry of living organisms. Lecture topics and reading assignments are listed below.

Readings:

- The required text is *Adventures in Chemistry* by Julie T. Millard (Houghton Mifflin).
- Crucial information about the course, including homework assignments, sample exams, and supplemental material, can be found at the Chemistry 118 Web page, accessed either through the CH 118 link on the Chemistry Department's Chemistry Courses Web page or directly at <http://www.colby.edu/chemistry/CH118/CH118.html>.
- The Colby Forensic Investigators Web page contains laboratory exercises and other essential information (<http://www.colby.edu/chemistry/CH118/LAB/index.html>).

Intellectual Responsibility:

Any work submitted for CH 118 in your name is to be your work alone. For more information about the College's policy on academic honesty see the Student Handbook. The Chemistry Department's policy is available at http://www.colby.edu/chemistry/Attend_Exam.html.

Attendance:

Attendance at every class and lab meeting is expected. Unexcused absences from class will result in a reduction of your grade, with more than two unexcused absences resulting in your dismissal from the course at the instructor's discretion. A single unexcused lab will result in your dismissal from the course. Please note that only your instructors can decide what is an excused absence. The Chemistry Department policy on attendance is available at http://www.colby.edu/chemistry/Attend_Exam.html.

Grading:

Your grade for CH 118 will be based on the following components.

- **Exams (350 pts)**- There will be two in-class hour-exams (100 pts each) and the final exam (150 pts) on **Jan 14, Jan 22, and Jan 29**, respectively. There are no make-up exams, so note these dates and plan accordingly. If you miss an exam for health reasons, you must request communication from your health care professional directly to Professor Millard. Some students may have approval from the Dean of Students' Office for time extensions on exams and should request that Dean Moore contact Professor Millard prior to the first exam.
- **Homework (50 pts)**- There will be several graded homework assignments throughout the month. Late homework will receive no credit.
 - ✓ One kind of homework is the "Question of the Day." You are required to submit one multiple-choice question (with choices A-D) based on each chapter **in electronic form** to Professor Millard by 5:00 PM on the day that we complete that chapter in class. Please ensure that you use the correct email address: a link is provided on the course web page. If you are in lab past 5:00, you may turn in a handwritten question to your lab instructor before leaving without penalty.
 - ✓ Other written assignments will be announced in class and posted on the CH 118 Web page.
 - ✓ You should also complete the practice exercises within the textbook. Although these will not be graded, similar problems will appear on the exams.
- **Laboratory (150 pts)**- Each laboratory section meets twice per week. Attendance is mandatory, and there are no make-up labs. If you are unable to attend your regular lab period because of illness or other emergency, please contact your lab instructor as soon as possible to make other arrangements. You must pass lab to pass CH 118. See the Laboratory Syllabus for specific details about laboratory requirements.
- **Class Participation (25 pts)**- You are expected to come to class each day prepared and ready to participate. Because of the rapid pace of a January term, each lecture is roughly equivalent to a week of class during the regular semester. Therefore, attendance is vital and will count as part of the "class participation" grade. However, attendance alone is not sufficient for full credit- you are expected to actively engage in class.

Lecture Topics:

<u>Topic</u>	<u>Reading Assignment (Adventures in Chemistry)</u>
Matter, Atoms, and Compounds	CH 1, Appendix
Chemical Bonds	CH 2
Chemical Reactions	CH 3
Properties of Solutions	CH 4
Energy and Chemical Reactions	CH 5
Molecules of Life	CH 8
DNA on Trial	CH 16, pp 585-591; Forensic DNA PowerPoint
Chemistry and Food	CH 9
Chemistry and the Gym	CH 10
Chemistry and Infectious Disease	CH 12

Tips for Success in CH118:

Just because this is a course designed for non-scientists, don't expect it to require little effort. Even if you had prior experience with chemistry (which we don't expect), we will be covering many unique topics that you have not had before. Furthermore, we emphasize an integrated approach to chemistry very different from other chemistry courses. We have designed CH118 to be fun and interesting, but also challenging. In order to be successful, you will need to do more than simply show up for class. Chemistry is similar to playing a musical instrument or playing a sport. The more you practice, the better you will be. It is recommended that for every hour you spend in class, you spend an additional three hours outside of class studying.

It is important to keep up with the material, especially given the rapid pace of the January term. Furthermore, later chapters build on earlier ones so make sure you see Professor Millard as soon as possible if you have any questions. You should read each chapter very carefully, take notes on important points, and also complete all practice exercises. Although these will not be collected, similar problems will appear on the quizzes and exams. Examples of exam-type questions can be found on the course Webpage. It is a good idea to practice with these, taking them under exam-like conditions and then checking your answers against the provided solutions.