Chemistry in Society
ACHM 105  Fall 2008  (4 credits)

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office hours: Tuesdays and Thursdays 8:45 – 9:15 AM  
Fridays 9 - 10 or other days/times by appointment  

mailbox: Geology and Biology Office, Science 201  

*My office may move this semester, but I will put up signs. My e-mail will not change!

Lecture:  Tuesday and Thursday 9:25 AM – 10:40 AM  
Room 301 BSED  

Lab:  Tuesday or Thursday 10:50 – 1:30 AM  
Room 315 SBDG  

Final Exam:  Tuesday Dec. 9  8 AM (do not purchase plane tickets before this date!)  


DO NOT PURCHASE A USED MANUAL it does not contain all the needed labs

Recommended: basic scientific calculator (graphing calculators are provided when needed)  
Cell phones and laptop computers will not meet your need for a separate calculator and  
will not be allowed during quizzes and exams.

Course Objective:
The primary purpose of this course is to offer you an understanding of how chemistry affects your  
everyday life. In addition, you will learn many of the fundamental principles and some of the  
vocabulary of chemistry. It is hoped that successful completion of this course will leave you with  
enough chemical concepts to appreciate the pros and cons of decisions made by businesses,  
politicians, and agencies such as the EPA. The positive experience gained through this course  
should clearly give you the confidence and interest in promoting this central science regardless of  
your chosen profession.

Course Format:
Our goal is to discuss four socially important topics that are covered in chapters 1-8 of your  
textbook. These topics are: the air we breathe, protecting the ozone layer, global warming, and  
past present and future energy sources.

Course Evaluation:
In order to evaluate your understanding of the issues discussed in the chapters covered, you will  
be required to submit a two-page, 1.5-spaced typed summary of these issues. You will be  
expected to incorporate at least two sources (internet, newspaper, magazines, and books) in  
addition to the textbook. These two sources should not be on-line encyclopedias though they may  
be used as additional sources. Each summary, written in your own words, will include  
information from these sources to expand the topics covered in the textbook. Each summary  
should also include a brief discussion of a local connection (i.e. why should you care about this  
issue). The local connection must be supported by a source. The purpose of these reports is to  
expand your knowledge, your ability to gather it, your ability to apply it to your own life, and  
your ability to communicate it in a clear and professional manner. The final product will be in 12  
point Times or Helvetica font with top, bottom, left, and right margins of 1.0 inch. The heading  
will include (at the left side); line 1 – your first and last name, line 2 – the date, line 3 –  
"ACHEM105 Report #". After the heading, skip one line, center your title, skip one more line  
and begin your paper. The sources should be referenced at the end of the summary and may be  
on the same page. All references must include the author, title, publisher, and date. Also include  
page numbers for printed material. A handwritten copy of the student honor code should be  
included with your signature at the end of the references. A hard copy of each paper will be due
at the beginning of the lecture on the date listed in this syllabus. In addition, an electronic copy of the same paper must be submitted through Blackboard before midnight of the same date. If you are unable to be in class that day you may e-mail or submit through Blackboard a copy of your report BEFORE the lecture deadline and then turn in a hard copy the next time you are in class.

Understanding of the chemical principles and vocabulary will be evaluated through three one-hour tests and a comprehensive final exam. While understanding chemical principles is crucial to those who plan to take additional chemistry courses, critical analysis of environmentally and socially relevant issues may be more important to those who are taking this course to satisfy general education requirements. Thus, the material covered and assessed will be skewed more toward the qualitative that the quantitative aspects of chemistry.

Lab:
Chemistry is primarily an experimental science. Therefore, laboratory experiments are an important part of the course. In order to gain any benefit from the lab, you have to read and prepare for the experiment ahead of time. A pre-lab quiz will assess your preparation for that day's lab. After the experiment has been conducted as per the lab instructor's guidance, calculations will be carried out and questions will be answered while you are still in the lab. The lab report (including the data sheet) must be submitted at the end of each lab period before you leave the room. Missed laboratories must be made up in the same week as the scheduled lab.

Academic Dishonesty:
Academic Dishonesty will not be tolerated. This includes but is not limited to copying others work (even if they took the class last year) and plagiarism of published material including copying text from internet sites for any part of your paper. If I suspect academic dishonesty, I will pursue the issue through the appropriate university channels according to the student handbook and university policy. This includes but is not limited to assigning a 0 for the assignment and reporting the problem to the university officials.

Attendance:
Attendance of all class meetings is expected, though excused absences are understandable. However, just as class participation/preparation will be used to help determine borderline grades, regular attendance will be looked upon favorably at the end of the semester. The Department of Chemistry has adopted the following attendance policy for all of its 100-level courses: Students must attend at least 75% of all classes. Missed assignments including tests due to EXCUSED absences may be made up at the discretion of the instructor. Unexcused absences on exam days will result in a grade of 0 for the exam. You must notify the instructor IN ADVANCE or as soon as reasonably possible for an absence to be excused. This means you must call, e-mail, or see me in person about the absence BEFORE it occurs (if you are ill contact me as soon as you know you will miss class). In the case of a missed exam, notification in person (i.e. a conversation with me) AND the make-up exam must occur BEFORE the next class meeting. In the case of a missed exam documentation will be required. Documentation of the excuse may be required at the discretion of the instructor for other absences. What constitutes proper documentation will be determined by the instructor but may include a SIGNED doctor's excuse filled out on his/her form including a phone number and dates, funeral home/pastor's SIGNED excuse filled out on their form/stationary, court appearance notice including proof you did appear either from the court/judge involved or a SIGNED letter from the court/judge involved stating that you did appear on that date and time (the reason for appearance need not be included).

Extra Credit:
You may earn extra credit by submitting newspaper or magazine articles that you have read on topics that are being discussed in class. The number of extra credit points will be decided by me
on a case by case basis depending on the nature of the article and the time you put into understanding it. Including a brief summary of the article, assessment of its accuracy, and relevance to your life with a copy of the article will increase the point value.

**Disabled Student Policy:**
If you have a physical, psychological, and/or learning disability which might affect your performance in this class, please contact the Office of Disability Services, 126A B&E, (803) 641-3609, as soon as possible. The Disability Services Office will determine appropriate accommodations based on medical documentation.

**Typical Grade Distribution:**

- Four Reports @ 50 points = 200
- Ten Quizzes @ 10 points = 100
- Three Tests @ 100 points = 300
- Final Exam @ 200 points = 200
- Twelve Labs @ 20 points = 240
- Twelve Pre-Lab Quizzes @ 5 points = 60

Total = 1100

**Calculators:**
I highly recommend you invest in a calculator if you do not already have one. You do not need to spend $100 on a graphing calculator with all the bells and whistles unless you are using them in another class. You will spend $10 - $20 for a calculator that will last you through all of 105 and as well as most other science or math classes you might take. It needs to have scientific notation and exponential keys. The best way to be sure of this is to look for a "Scientific" calculator as opposed to a "business" calculator although most business calculators have the functions you need. If you are not sure about the calculator you own, bring it to me and I will show you where the important keys are. Cell phone calculators may not be used on exams or quizzes.

**Lab Deductions:**
I will take deductions starting at ONE FULL letter grade for each of the following;

- each safety violation
- inappropriate conduct
- (this includes not properly wearing goggles)
- improper (or failure to) clean up in lab

**Grading:**

- You must be in class to take a quiz. This means no make-ups. I will drop at least one quiz.
- You must be in lab to take the pre-lab quiz. This means no make-ups.
- You must be in lab to turn in a report.
- Lab reports are due before you leave the laboratory. There will be NO EXCEPTIONS.
How to Be Successful in this Class

Please feel free to ask questions in lecture and lab that is what this time is for. If you feel you need individual help, or encounter difficulty outside of class, my door is always open (as long as my schedule permits it). Please do not hesitate to find me, e-mail me, or call me. I may ask you to come back at another time, but I will schedule one right away with you. The best way to get a message to me is to send me an e-mail but you can also call me at home.

Your responsibilities:
You need to come to class prepared. This means you have read the chapter and worked all the recommended problems/questions in the text. You need to have reviewed your notes/text to make sure you understand everything or are prepared to ask questions about the things that are not clear. You need to bring your textbook, lab manual, paper, a calculator, and any questions that you have or topics you would like us to discuss. You also need to be prepared for the lab we will do that day. This means you have read the entire procedure before coming to class and know how to do all the procedures and calculations that are required to complete the lab report. It also means you are dressed safely and are carrying your common sense.

My responsibilities:
I will come to class prepared to lead discussion of the issues presented in the text and to answer your questions on anything related to the class. If you need extra help outside of class, I am always able to set up a time to meet with you. In lab I am also there to ensure your safety.

Sources for help:
  Me - look for me in my office, e-mail, or call at home 10 AM to 10 PM (If you leave voice mail on campus, I get it at home as an e-mail. Leave a message on my home machine instead.)
  Classmates - working together forces you to explain to each other which is the best way to learn, if you can teach someone else you are ready for the test
  Friends/floormates/housemates etc. who have done well in this class in the past
  Tutors – The Academic Success Office has some great resources for you
  The WRITING room. - They are excellent with grammar, sentence structure, organization, & clarity of expression (don't wait until the last day, they are busy)
**How to succeed in chemistry.**

• Attend all class sessions (lecture/recitation/lab).
• Read the material once before it is covered in lecture.
• Take good notes (write down all examples and answers) -- put the date on each day's lecture so you know if one is missing.
• Do all assigned problems on the same day they are covered in class -- rework them one day before exams.
• Ask lots of productive questions ("I don't get it" is not as effective as "How do you get 23.0 from the second step?")
• Make a list of questions and bring it to class.
• Treat each quiz as a practice test set. If you miss it on the quiz, make sure you figure out what went wrong and FIX IT before the next class.
• Show all of your work in clear organized steps. This means start with the formula then show each step IN ORDER so I can help you focus on your trouble areas AND so you can receive partial credit!
• Stuck? Get help ASAP! A small problem today will quickly turn into a major crisis if you don't fix it quickly because the new material builds on previous material. See sources for help on front.

**How to be successful in the lab**

• Be safe - use your common sense, follow all the rules all the time, AND behave maturely.
  It is a shame to lose points or an eye for goofing around.
• Be prepared. Read the lab thoroughly at least the night before. Make sure you know how to do all of the calculations required. It may help to write in the procedure the line # of the piece of data you are to record at that step. Put a small star by each line for data then you won't skip any. Pay careful attention to any safety concerns in the procedure, in an emergency you will not have time to look them up. Review the lab procedure on the day of class to remind yourself what is happening.
• Show all formulas and each step you use when doing calculations. If I can't follow your work, I can't give you a score. Simply filling in answers only shows me you know where to find the answers not that you know how to get them yourself.
• Ask questions whenever you are not sure. (Always read the directions one more time before you ask because the first thing I will ask you to do is tell me what they say to do.)
Tentative Schedule:

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture</th>
<th>Lab</th>
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</thead>
<tbody>
<tr>
<td>Aug. 21</td>
<td>Thurs.</td>
<td>Welcome</td>
</tr>
<tr>
<td>26</td>
<td>Tues.</td>
<td>Ch. 1</td>
</tr>
<tr>
<td>28</td>
<td>Thurs.</td>
<td>Ch. 1</td>
</tr>
<tr>
<td>Sept. 2</td>
<td>Tues.</td>
<td>Ch. 1</td>
</tr>
<tr>
<td>4</td>
<td>Thurs.</td>
<td>Ch. 1</td>
</tr>
<tr>
<td>9</td>
<td>Tues.</td>
<td>Ch. 2</td>
</tr>
<tr>
<td>11</td>
<td>Thurs.</td>
<td>Ch. 2</td>
</tr>
<tr>
<td>16</td>
<td>Tues.</td>
<td>Ch. 2</td>
</tr>
<tr>
<td>18</td>
<td>Thurs.</td>
<td>Ch. 2</td>
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<tr>
<td>23</td>
<td>Tues.</td>
<td>EXAM 1</td>
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<td>25</td>
<td>Thurs.</td>
<td>Ch. 3</td>
</tr>
<tr>
<td>30</td>
<td>Tues.</td>
<td>Ch. 3</td>
</tr>
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<td>Oct. 2</td>
<td>Thurs.</td>
<td>Ch. 3</td>
</tr>
<tr>
<td>7</td>
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<td>9</td>
<td>Thurs.</td>
<td>Fall Break</td>
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<td>21</td>
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<td>23</td>
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<td>Tues.</td>
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<td>30</td>
<td>Thurs.</td>
<td>Ch. 7</td>
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<td>Nov. 4</td>
<td>Tues.</td>
<td>Election Day</td>
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<td>6</td>
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<td>Tues.</td>
<td>Ch. 7</td>
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<tr>
<td>13</td>
<td>Thurs.</td>
<td>Ch. 7</td>
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<td>18</td>
<td>Tues.</td>
<td>Ch. 8</td>
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<td>20</td>
<td>Thurs.</td>
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<td>25</td>
<td>Tues.</td>
<td>EXAM 3</td>
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<tr>
<td>27</td>
<td>Thurs.</td>
<td>Thanksgiving</td>
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<td>Dec. 2</td>
<td>Tues.</td>
<td>Ch. 8</td>
</tr>
<tr>
<td>4</td>
<td>Thurs.</td>
<td>Ch. 8</td>
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Dec. 9 Tuesday FINAL EXAM 8 AM

Tentative Report Schedule

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<th>topic</th>
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<tbody>
<tr>
<td>Tues. Sept. 9</td>
<td>Report # 1</td>
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<tr>
<td>Thurs. Oct. 2</td>
<td>Report # 2</td>
</tr>
<tr>
<td>Thurs. Nov 6</td>
<td>Report # 3</td>
</tr>
<tr>
<td>Tues. Dec. 2</td>
<td>Report # 4</td>
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