004:010 Chemistry and the Chemical Industry
Spring 2013

Professor: Ned B. Bowden

Class Times: Class is on TTh from 9:30-10:45 in C131 PC
Tests are scheduled on Tuesdays from 6:30-8:00 PM in LR2 VAN
The date for the final exam will be announced during the semester.

Contact Info: W425 Chemistry Building
335-1198
ned-bowden@uiowa.edu

Course Website: ICON, http://icon.uiowa.edu

IMPORTANT: To reach me or set an appointment please send an email and I will try to respond quickly. I rarely answer my phone, so calling me is a waste of time. Email is a much better way to reach me.

Office Hours
I reserved these times for you and am happy to meet and discuss problems you are having. If these times do not work for you, we will set an appointment by email to meet another time.

My office hours are on Thursday from 10:45-12:00 and on Mondays from 9:00-10:45 in my office.
Teaching assistant
Jennifer Schmidt is the teaching assistant and can be reached at jennifer-schmidt@uiowa.edu. Her office hours are 9:30-11:30 on Wednesdays in the E208 CB.

Course Description
The chemical industry employs over 800,000 people within the US and produces chemicals that are essential in industries including food, medicine, energy, materials, agriculture, and more. This industry is responsible for nearly $4 trillion dollars of materials manufactured each year. The chemical industry is essential to the industrialization and health of every major industrialized country. In this course we will study many of the basics of chemistry and how the concepts and reactions are applied in industry. Much of the material will originate from the textbook, but additional sources will be handed out periodically throughout the semester.

Textbook
We will use “Chemistry for Changing Times” by Hill, McCreary, and Kolb (thirteenth edition, Pearson). This textbook is available at the University Book Store.

Other readings will be disseminated through ICON. The American Chemical Society publishes a weekly magazine titled “C&ENews” that has important information about chemistry and the chemical industry. Articles from C&ENews will be posted on ICON and announced in class to provide you with the most recent advances and information about the chemical industry.

Grading
The College of Liberal Arts and Sciences strongly suggests the following grade distribution.
18% A
36% B
39% C
5% D
2% F

The grade distribution will be close to these values, but it may vary based on class performance. Plus and minus grades will be given, they are left to the discretion of the instructor at the end of the semester.

You will be graded on the two hourly exams, homework, quizzes, attendance, research paper, and a final exam. Your final grade will be calculated as follows.

Two hourly exams: 40%
Homework: 15%
In class (or discussion section) quizzes: 10%
Attendance in discussion section: 5%
Research paper: 10%
Final Exam: 20%

Your test scores will be posted on ICON. I will post the grade distributions for each exam so that you know how you did on each exam.

Homework
Homework is critical to help you learn the material. A poor, but common way, to do the homework is to look at the problem and answer key. Many students will look at a problem in the book, write nothing down, and then look at the answer key. Is this how I will test you? Will I ask you a question, give you the answer, and then ask you if the answer is correct? The best way
to do the suggested problems is to look at the problem, write down your best answer, and then look at the answer key. It is O.K. to struggle with the material, that is how you learn! You are expected to not know all of the answers immediately, you will learn quite a bit by determining the correct answer without the answer key.

I will assign homework on a regular basis. You will need to learn when homework has been assigned in class or from ICON. I will announce the homework in class and post it on ICON when I assign it. The homework will be assigned as “full collaboration”. That phrase means that you may work with your classmates, friends, tutors, or anyone else to complete the homework. You may work alone if you wish, but no penalty will be given to those who work together. This policy does not mean that you should copy someone else’s homework; that is not allowed and will be viewed as cheating. You must make an honest effort to complete the homework and understand the answers. One good method to know if you understand the answers is to ask yourself if you can reproduce your homework if it is lost. If you can reproduce your homework, you have some level of understanding. If you cannot reproduce it, you should go over it again until you can do so. Homework is an excellent vehicle for learning class material, take advantage of this opportunity and you will do well on the exams.

**Attendance**
The discussion sections will be valuable for learning the material. You should make it a point to attend these sections. You will work problems and talk about the material with Jennifer. If you are surfing the web, reading a paper, or not participating you will be asked to leave. Attendance will be taken and you will earn 0.5 points every week if you are participating. You can miss up to 4 weeks without it affecting your grade.

**Exams**
There will be two hourly exams on the following days.

February 19
March 26

The tests will be held in LR2 VAN. The exams will last for 1.5 hours.

Leave all textbooks, models, notes, etc. at home or you will be required to leave them in the front of the classroom during the exam. The tests will be written to require short answers and short essays. The exams will be closed book and the answers should be written in blue or black ink. Exams written in pencil will not eligible for a regrade. Exams will be returned on the first class period following the exam and will be available at the chemistry center on the second floor of the chemistry building (E225 CB) immediately after that class. Your grades will be posted on ICON as soon as possible.

**In class quizzes**
I will have unannounced quizzes throughout the semester. These quizzes are meant to ensure that you have done the readings and are prepared for class. They will emphasize whether you have a grasp of what you read. There are no make-ups for the quizzes, but you can drop your three lowest quiz grades.

**Research paper**
Everyone is required to write a research paper that is due on April 26th. This paper will have 1 inch margins, be written in 11 pt. Arial font, and use 1.5 spacing. The use of section titles is strongly encouraged.
The paper will cover a topic of the chemical industry that is of interest to you. You must outline this field, who the major companies are, what products they sell, how the products are synthesized, and what is the state of the art in this field in terms of chemistry. We will discuss this paper in more detail after the first month of the semester.

Final exam
The final exam will be comprehensive. You will be expected to have a deep understanding of what has been discussed in this course and the fundamentals of chemistry of different industries. The final exam will be short answer and will require you to think analytically. You should not make travel plans for finals week until you know when your finals are scheduled.

Regrades
If you feel that your test has been graded unfairly you can ask for a regrade. Write the reason for your regrade on the front of the test and submit it to me or the chemistry center after class within one week after the exam was available to be returned. The whole exam may be regraded. Regrades are not possible on tests written in pencil or erasable ink.

Make-up exams
Make-up exams will only be provided under exceptional circumstances. A valid, written excuse must be provided prior to a missed exam to the instructor. If you anticipate having a conflict with an exam, please see me ahead of time. If you miss an exam for unforeseen reasons and have not provided a valid, written excuse to the instructor prior to the exam, you have one week after the exam to provide me with a valid, written excuse. There will only be one make-up exam for each hourly exam.

Cheating
Our scientific environment is maintained through the actions of its members and the trust we place in one another. Scientists are expected to remain honest in their words and actions. When this trust is broken the results are often severe and career threatening. One should not cheat on the false assumptions that 1) no one is harmed if no one is aware of the cheating or 2) it is alright to cheat if you aren’t caught. A good scientist will hold themselves to a higher standard where cheating, even if it isn’t discovered, is wrong.

With this important responsibility comes the privilege of being a member of a community that values openess and truth. As you are all scientists in training I will expect you to act accordingly and with an upright manner. Anyone caught cheating will flunk and will be reported to the administration.
Administrative Home
The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS Academic Policies Handbook at http://clas.uiowa.edu/students/handbook.

Electronic Communication
University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences (Operations Manual, III.15.2, k.11).

Accommodations for Disabilities
A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make particular arrangements. See www.uiowa.edu/~sds/ for more information.

Academic Honesty
All CLAS students have, in essence, agreed to the College's Code of Academic Honesty: "I pledge to do my own academic work and to excel to the best of my abilities, upholding the IOWA Challenge. I promise not to lie about my academic work, to cheat, or to steal the words or ideas of others; nor will I help fellow students to violate the Code of Academic Honesty." Any student committing academic misconduct is reported to the College and placed on disciplinary probation or may be suspended or expelled (CLAS Academic Policies Handbook).

CLAS Final Examination Policies
The final examination schedule for each class is announced around the fifth week of the semester by the Registrar. Final exams are offered only during the official final examination period. No exams of any kind are allowed during the last week of classes. All students should plan on being at the UI through the final examination period. Once the Registrar has announced the dates and times of each final exam, the complete schedule will be published on the Registrar's web site.

Making a Suggestion or a Complaint
Students with a suggestion or complaint should first visit with the instructor (and the course supervisor), and then with the departmental DEO. Complaints must be made within six months of the incident (CLAS Academic Policies Handbook).

Understanding Sexual Harassment
Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather
In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Department of Public Safety website.