

CH 131  
General Chemistry for Engineering Students  
Fall 2003

**INSTRUCTOR:** Dr. Wolfgang Bertsch  
Room 225, Lloyd Hall  
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348-6381

**OFFICE HOURS:** Monday, Wednesday 9:00 - 10:00  
Friday 10:00 - 11:00  
And by appointment

Students are encouraged to use e-mail as much as possible.

**COURSE OUTLINE:**

CH 131 is the first part of a two semester sequence in chemistry designed for future engineers. This course will meet the special needs of engineers, i.e. it will place emphasis on problem solving. It will be somewhat less vigorous on some concepts that are of interests to die heart chemists. Your instructor will try to guide you over the obstacles that are surely in your path. Teaching/learning is a two way street. The outcome of this course will be disappointing if you do not continually work and stay one step ahead of classroom developments. **Classroom attendance is extremely important.** You should make every effort to come to class. It will show in your final grade.

**TEXT:**

We will use the 4th edition of Chemistry & Chemical Reactivity by Kotz and Treichel. This is a very strong and well balanced book that has many modern applications. As most freshmen texts, it carries too much information and the freshman student may be overwhelmed with the science presented on more than 1100 pages. We will not be able to cover all areas with the same vigor. Your instructor will make some selections. This means that we will be able to spend extra time on topics that are important for aspiring engineers.

**RECITATION SESSIONS:**

Except for designated examinations, the time between 6:30 and 7:50 p.m. on Thursdays is available for recitation sessions. These sessions can be used for a variety of purposes such as going over previously covered materials, working additional problems, whatever comes to mind. Attendance is completely voluntary. No extra credit can be earned.

**Please Note:** We will use the date for the second recitation session (8/28) for a brief introduction to the OWL (on line web based learning) system. The vast majority of students should be able to log on and navigate through the system without external help. If you fall into this category, there is no need to show up for the demonstration. The demonstration shows how to log on, do the homework assignments and how to use your computer to view some of the additional information available to you on CD ROM.

**HOMEWORK ASSIGNMENTS:**

There are no mandatory homework problems. On the other hand, continuous study certainly needs to be rewarded. To this end, a modest bonus can be earned by completing OWL, partially, or in its entirety. If you look at OWL, you will probably agree that the problems presented are fairly easy and straightforward. On the other hand, working all of the problems will require a considerable amount of time. You will need to decide for yourself how to balance the time you set aside for study. Do what is best for you.

**Please Note:** OWL problems must be submitted in a timely manner. The dates are posted on the web site.

## QUIZZES

We will have one quiz each chapter. Quizzes cover a selection of problems that are presented in your book as exercises (embedded in each chapter) or as study questions at the end of end chapter. For the latter, we will choose a limited selection of simple, even marked study questions. Solutions are available in your book for both exercises and study questions.

You are allowed to drop the 2 lowest quizzes. We will cover 10 chapters. This means that your quiz grade will be calculated from the 8 best quizzes. The quiz average will count same as an ordinary exam. There is no makeup for a missed quiz. If you have to miss a quiz, you must notify your instructor before, or immediately after the quiz and present an acceptable and verifiable excuse. "Immediately after" means the next class period.

Quizzes are designed for 10-15 minutes each. They will be given at the end of class periods and returned during lab.

## EXAMINATION SCHEDULE AND GRADES:

We will do something special in this class to reward the diligent student who is focused and takes his/her work seriously. He or she may be able to get out of the final, as discussed below.

A total of 4 "hourly" exams of 80 minutes each will be given, including the final. Each exam will cover approximately 25% of the material, including the final. In other words: The "final" will be an ordinary 80 minutes exam that happens to fall on the date set aside for the final examination. It will not be comprehensive, but just cover the last quarter of the material. Each exam is worth 20 points expressed as percentage. All exams will take place in Room 38 of Lloyd Hall on Thursday evenings between 6:30 and 7:50 p.m. See the schedule for exam dates.

The special deal mentioned above is designed for the prospective "A student". The rules are as follows:

1. The average of the first 3 exams must be 90 or above. The "OWL bonus" of up to 3 points can be added in.
2. The lab average must also be 90, or above.
3. No exam can be lower than 80. The OWL bonus cannot be used to raise the lowest grade. In other words: The lowest exam must be a true 80.
4. The quiz average counts as a regular exam grade. It cannot be dropped. The average must be 90 (or 87, respectively).
5. Each student who qualifies for the above must receive written verification from the instructor sometime during dead week.

The grades will be computed, as follows:

The best 3 out of 4 exams, including the final	60 pts.
Laboratory	20 pts.
Quizzes, total	20 pts.
Total	100 pts.

A total of 103 points are possible, including the bonus OWL points.

Please note that plus and minus grades will not be assigned.

You must bring your ACT card, driver's license, or other photographic identification to all exams. You will only need a simple calculator. Cell phones must be turned off during class and during examinations. You must clear the memory of the computer you bring to the exam. Basic rule: the simpler, the better.

Please note:

- 1) The format of examinations will include both multiple choice questions and simple essay type questions.
- 2) Up to 25% of the questions on the exams will come directly from problems presented within the chapters (called "Examples" and "Exercises"). Other questions will be derived from the "Study Questions" sections at the end of each chapter.
- 3) Each exam will include a bonus question, or two. The bonus questions will come from the section "challenging questions."

### **LABORATORY:**

The lab manual is The University of Alabama Chemistry Laboratory Manual (Lab Text for CH 101/102, 117/118, 131/132 edited by Whitney and Vincent).

The experiments have been designed to assist the student in learning fundamental chemical principles. We hope that the experiments will also serve as an introduction to the basic laboratory operations and skills needed in the practice of chemistry. Each student **must** purchase a manual. Chemistry is a "hands-on" science. Each CH-131 student must take and pass the laboratory. If you fail in the laboratory, you **fail** the course, no matter how well you perform in the lecture.

### **ACADEMIC MISCONDUCT:**

All acts of dishonesty in any work constitute academic misconduct. The Academic Misconduct Disciplinary Policy will be followed in the event of academic misconduct.

### **DISABILITY ACCOMMODATIONS:**

If you require disability accommodations, please contact Disability Services in the Center for Teaching and Learning (348-4285).

## WHO SHOULD TAKE CH 131/132

Please study the following information and then decide which chemistry course (131, 101, 104 or 107) is right for you. This information is copied from the chemistry section of The University of Alabama's Freshman Course Placement brochure.

Students who plan to take only one or two semesters of chemistry for the University Core Curriculum requirement in Natural Science or for elective hours should register for CH 104 or CH 107 (Introductory Chemistry). Nursing majors should register for CH 104.

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Math  
Placement Score

Course

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Students taking only two semesters of chemistry

Any score

CH 104 or CH 107  
Introductory Chemistry

Students who plan to take more than two semesters of chemistry

Less than MATH 112

CH 104 Introductory Chemistry

MATH 112 or higher

CH 101 General Chemistry or  
CH 131 Chemistry for Engineers

Please note that the math requirements for CH 131 are minimal. We will use the 4 basic manipulations (subtraction, addition, multiplication and division) and occasionally simple log/antilog functions. See your instructor if you need help in deciding if this course is right for you.

**CH 131  
FALL 2002  
Tentative Lecture/Exam Schedule**

Week	Date	Chapter	Week	Date	Chapter	
1	Wednesday	Aug. 20		Monday	Oct. 20	6
	Friday	Aug. 22	10	Wednesday	Oct. 22	6
				Friday	Oct. 24	6
2	Monday	Aug. 25		Monday	Oct. 27	7
	Wednesday	Aug. 27	11	Wednesday	Oct. 29	7
	Friday	Aug. 29	1	Friday	Nov. 31	7
<b>SEPTEMBER 1, LABOR DAY</b>						
3	Wednesday	Sept. 3	12	Monday	Nov. 3	7
	Friday	Sept. 5	2	Wednesday	Nov. 5	8
				Friday	Nov. 7	8
	Monday	Sept. 8		Monday	Nov. 10	8
4	Wednesday	Sept. 10	13	Wednesday	Nov. 12	8
	Friday	Sept. 12	2	Friday	Nov. 14	9
	Monday	Sept. 15		Monday	Nov. 17	9
5	Wednesday	Sept. 17	14	Wednesday	Nov. 19	9
	Friday	Sept. 19	3	Friday	Nov. 21	9
	Monday	Sept. 22		Monday	Nov. 24	10
6	Wednesday	Sept. 24	15	Wednesday	Nov. 26	10
	Friday	Sept. 26	4	<b>NOVEMBER 27, THANKSGIVING</b>		
	Monday	Sept. 29		Monday	Dec. 1	10
7	Wednesday	Oct. 1		Wednesday	Dec. 3	10
	Friday	Oct. 3	4	Friday	Dec. 5	10
	Monday	Oct. 6		<b>FINAL EXAM</b>		
8	Wednesday	Oct. 9		<b>Tuesday, Dec. 10, 2:00 p.m.</b>		
	Friday	Oct. 11	5			
	Monday	Oct. 14		<b>*Exams I, II, &amp; III, will be</b>		
9	Wednesday	Oct. 16		<b>given on Thursday</b>		
	Friday	Oct. 18	6	<b>evenings from 6:30-7:50 p.m.</b>		
	<b>EXAM I</b>	<b>SEPTEMBER 18, 2003</b>				
	<b>EXAM II</b>	<b>OCTOBER 16, 2003</b>				
	<b>EXAM III</b>	<b>NOVEMBER 14, 2003</b>				
	<b>EXAM IV</b>	<b>DECEMBER 8, 2003</b>				