

Senior Instructor: Dr. Mark E. Noble

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Course web site: <http://www.louisville.edu/~menobl01/gc.htm>

Lectures: TR 11:00, EH 103

Recitation Sections: 02-A, B, C, D, E; 03H; 04H

Welcome to Chem 202. This is the second semester of the mainstream, General Chemistry course for many students interested in science, engineering, preprofessional and other majors. This course also fulfills a General Education credit in Natural Sciences. Chem 202 covers topics such as the interactions within matter, phases, solutions, thermodynamics, kinetics, equilibrium processes, electrochemistry and nuclear chemistry.

The prerequisite for this course is successful completion of Chem 201. Chem 202 builds on Chem 201; deficiencies in Chem 201 material should be remedied promptly.

The textbook for the course is the same as for Chem 201: *Chemistry, The Molecular Nature of Matter and Change*, Fourth Edition by Silberberg. The material for this semester will be taken from Chapters 12, 13, 16 - 21 and 24, but not everything in those Chapters will be covered. Additional material may also be added to the course content. All specific material to be covered will be defined throughout the semester. (Textbooks are written to accommodate different instructors at different colleges at different levels with different students. The instructor's task is to select from the text that material which is most relevant to their course.)

This course consists of both the main lectures and the recitation sections. The main lectures are large group lectures given by the Senior Instructor, Dr. Noble. The regular course exams are given during the main lecture times. The recitation sections are small group classes and are intended to be more interactive. This course does not include laboratory; the laboratory courses are totally separate: they have separate course numbers, separate Senior Instructors, separate TAs and separate requirements.

The course grade is based on three semester exams (1/6 each), a recitation grade (1/6), and a Final Exam (1/3); the Final Exam is comprehensive. Dates for all exams are announced in advance and must be taken during the scheduled times. **THERE ARE NO MAKE-UP EXAMS.** A missed semester exam will count as zero and will be calculated into the course grade as such; a missed Final Exam is an automatic F for the course. There are some cases where a student will miss an exam for justifiable cause, such as illness, surgery, etc. In these cases, arrangements can be made so the student is excused and is not penalized with a zero. These arrangements must be made with Dr. Noble and should be done in advance of the exam date if possible. If this is not possible, then it is the student's responsibility to contact Dr. Noble promptly thereafter. (A routine appointment for a routine reason, medical or otherwise, is not considered justifiable cause if it can be conveniently scheduled at another time.) Generally, requesting an excuse for justifiable cause will require some written evidence such as a doctor's back-to-work/school statement, etc. Some excuses are not considered justifiable; examples include traffic, dead car battery, defective snooze alarm, etc.

Dates for exams are on the Schedule. Any anticipated changes will be announced in lecture and/or posted on the web. In the event of bad weather or other cause, the University may declare classes closed or it may declare that it will follow the "Delayed Class Schedule". If this occurs on an exam date, then the exam will be held on the first full class date thereafter. Announcements to this effect and variations to this will be posted on the web (if possible) for wide access to students.

The material for which the student is responsible includes LECTURE MATERIAL (MOST IMPORTANT) and the ASSIGNED HOMEWORK (SECOND MOST IMPORTANT). Students are not responsible for text material which is not covered by lecture or not covered within assigned homework. The textbook is a supplement to the lecture, not vice versa. Since this course builds upon Chem 201, students remain responsible for that material.

Every effort is made to grade exams as soon as possible. This process is generally complete within one weekday. Once exams are released, they are given to the TAs for return to the student. Keys will be posted outside CB 348 and on the web.

Scaling of exam and recitation grades can sometimes occur, although it is not intended. Grades may be scaled up but they cannot be scaled down.

Numerical scores correlate with the letter grades below. These are guaranteed minima. Plus/minus grades are not used.

A ≥ 87.5 B 75.0 - 87.4 C 62.5 - 74.9 D 50.0 - 62.4 F ≤ 49.9

These letter grade ranges apply for exams, recitation and the overall course grades.

Attendance has no direct contribution to grading. **THE ABSOLUTE REQUIREMENT FOR ATTENDANCE IS FOR EXAMS AND RECITATION GRADED ACTIVITIES.** Obviously, since lecture is the most important material, regular attendance and note-taking is critical to success.

The Selected Problems (from the Schedule) are not collected nor graded. These are assigned to improve learning and skills; they may be discussed in lecture or recitations, but it remains the student's responsibility to do them and to master them. This means that each student should be able to start each problem, work through each problem, and get the right answer to each problem in a reasonable period of time without looking anything up. Needless to say, this will not happen when doing many problems for the first time. This is normal and it is to be expected. Problems which cannot be readily completed should be flagged, and the student should redo those problems at a later time. This process should be repeated until the problem is mastered. Although not collected nor graded, material from the Selected Problems or from any other assigned homework can be included on the exams and in recitation activities. You can expect this to happen.

Bring a calculator to every exam and to every recitation meeting, and be certain it has a charge on it. Dead batteries can be fatal. Be certain you know how to use your calculator. A calculator capable of standard math functions and scientific notation is required for this course. There is one important restriction on additional features: any calculator which is capable of alphabetic memory is banned from use for any exam. "Alphabetic memory" is meant to be memory which can hold all 26 alphabet letters. Note that the ban is on calculators which are capable of this feature. Therefore, all such calculators are banned from use during the exams, even though the memories have been erased. If a student is believed to be using a banned calculator during an exam, then 5-10 points may be deducted from their exam afterwards.

Phones, pagers and other devices must have audible signals turned off during lecture and exams. This is an obvious courtesy to surrounding students. Furthermore, all communication devices must be out of view. Infractions of either of these during an exam can lead to a loss of 5-10 points. Students with justifiable cause (e.g., emergency response personnel, others with job-related causes, etc.) who need to have these devices audibly active may do so, but this must be reported to Dr. Noble before the start of the exam. A specific seating location may be required.

This course can be challenging; for many it will also be very difficult. The most important guidelines for success in the course are regular attendance, good lecture notes, mastering all of the assigned problems in a timely fashion, and utilizing the available

assistance. The first place for assistance is the recitation section and the TA: don't be afraid to ask questions. All TAs will post office hours for additional help. Assistance is also provided by Supplemental Instruction (SI), offered through the REACH Program; the meeting times and locations for SI will be announced when available. (Other services may also be available through REACH; see <http://www.reach.louisville.edu> for more information.) Study materials for the course are available on reserve in Ekstrom Library and include the following.

1. The *Instructor's Solutions Manual* contains the answers to all problems in the textbook.
2. *Student Solutions Manual*
3. Other general chemistry textbooks for general information:
Chemistry: The Central Science by Brown, LeMay and Bursten
Chemistry and Chemical Reactivity by Kotz and Treichel

Copies of old exams are available for download at the course web site. NOTE! The old exams are meant for evaluation and practice. They are not intended to be a major study tool. Not everything can fit on an exam; therefore, exams may not include aspects from the full coverage of content. For this reason, there can be other material which students are still responsible for and which can appear on exams during the present semester. Content can also change from one semester to another.

In addition to the above assistance, the following "open policies" apply.

OPEN RECITATION POLICY: Chem 202-02 students may attend any 202-02 recitation section. The list is on the next page. For grade purposes, however, all students must take quizzes and other graded activities in their section of enrollment. THERE ARE NO MAKE-UPS. If a student finds that another recitation works better for them, they can request a transfer to that section through Dr. Noble, even after the drop/add deadline.

OPEN OFFICE HOUR POLICY: Students may consult any of Dr. Noble's TAs during their scheduled office hours.

* * * THESE MEANS OF ASSISTANCE ARE AVAILABLE! * * *
USE THEM!
YOU'RE PAYING FOR THEM!

Another valuable help source is other students. Collaborate with others in the class. Share notes. Go over problems together. Remember that lecture material is number one and assigned homework is number two; collaborating helps both. Dr. Noble is also available for questions either in person or by email. Stop by anytime or make an appointment. Additional information will be posted periodically on the course web site on the Miscellany Page. Input from students may also be posted there if it is of general interest to the class.

ALL OF THESE ARE IMPORTANT SOURCES OF HELP.
TRY THEM.
FIND OUT WHAT WORKS BEST FOR YOU.

It is very easy to fall behind in this class, but it is also very dangerous. It is the student's responsibility to maintain pace to the best of ability and to seek help when necessary.

Note: Due to spam, filters are in place and email communication is not completely reliable. Here are some suggestions. Put something obvious in the subject line, such as Chem 202 or GenChem. Do not put the word 'test' in the subject line; that is usually spam. Do not leave the subject line blank. If you do not get a response, send again or check with Dr. Noble personally. These measures are unfortunate but necessary.

Changes to this Syllabus (including the attached Schedule) can be made as appropriate.

I am pleased to have you enrolled in this course. I hope you find it interesting, stimulating, and useful.

---Dr. Noble

Dr. Noble's Chem 202 Setup, Spring 2008

Lectures: TR 11:00 - 12:15, EH 103

Recitations: 202-02	A	W	8:00	NS 130
	B	F	1:00	CB 16
	C	R	2:00	HM 114
	D	W	9:00	NS 130
	E	R	9:00	NS 130
202-03H		W	1:00	CB 16
202-04H		W	3:00	CB 16

Required Background Knowledge

Whether you took Chem 201 in Fall 2007 or at some other time, or if you took the first semester course at some other school, the material background still applies. The following is some specific, required knowledge for the present Chem 202 course: you must know this information whether previously needed-to-know or not.

Metric prefixes: G, M, k, c, m, μ , n, p

Kelvin/centigrade conversion: $T(K) = T(^{\circ}C) + 273$

Pressure conversions: atm = 760 Torr = 760 mmHg

Gas law: $PV = nRT$

Thermodynamic standard conditions: $P = \text{one atm}^*$

Concentration = one M* (aqueous)

(* There are technicalities to these, to be discussed in Chapter 20.)

Assume T is 25 $^{\circ}C$ unless otherwise specified.

Strong/weak acids/bases: (These apply until modified during the current semester.)

The following are strong acids: $HCl(aq)$, $HBr(aq)$, $HI(aq)$, H_2SO_4 , HNO_3 , $HClO_4$.

Assume any other acid is weak unless otherwise specified.

Soluble, ionic hydroxides and oxides are strong bases. (For practical purposes until later modified, know these as ionic hydroxides and oxides of Group 1 and of Group 2 except Be and Mg.) Ammonia is a weak base.

The following handouts from Chem 201 apply. These are available through the course web site or a copy can be picked up from Dr. Noble.

Doing Significant Figures

Element Symbols to Know

Names and Formulas of Compounds

Names and Formulas of Acids

Dr. Noble

Lectures: TR 11:00 - 12:15, EH 103

The following is the schedule for the semester. If any changes are necessary, these will be announced in class, posted on the bulletin board outside CB 348 and/or posted on the course web site.

The Selected Problems listed below are chosen from the many that are available at the end of each Chapter. The list gives the Problems according to their Chapter, not necessarily according to any particular lecture. **THESE SELECTED PROBLEMS ARE ASSIGNED HOMEWORK AND SOME WILL APPEAR ON EXAMS. STUDENTS SHOULD BE ABLE TO WORK THESE PROBLEMS QUICKLY AND SKILLFULLY.**

Class	Date	Content	Selected Problems
1	1-8	T	Ch. 12
2	1-10	R	Ch. 12
3	1-15	T	Ch. 12
4	1-17	R	Ch. 12
5	1-22	T	Ch. 13
6	1-24	R	Ch. 13
7	1-29	T	Ch. 13/20
8	1-31	R	Ch. 20
9	2-5	T	Exam I
10	2-7	R	Ch. 20/16
11	2-12	T	Ch. 16
12	2-14	R	Ch. 16/17
13	2-19	T	Ch. 17
14	2-21	R	Ch. 17
15	2-26	T	Exam II

16	2-28	R	Ch. 18	
17	3-4	T	Ch. 18	9, 16, 19, 23, 26, 27, 36, 43, 47, 66, 67, 68, 69, 77, 78, 80, 84, 87, 90, 92, 94, 96, 98, 100, 119, 121, 123, 125, 141, 151(a), 161, 170
18	3-6	R	Ch. 18	
19	3-18	T	Ch. 18/19	
20	3-20	R	Ch. 19	5, 12, 15, 18, 19, 21, 22, 23, 26, 31(a), 40, 46, 54, 55, 56, 58(a), 59(a), 63, 66(a,b), 67(a,b), 68(a,b), 71, 72, 74, 76, 94, 97, 98, 101, 102, 103, 133, 144
21	3-25	T	Ch. 19	
22	3-27	R	Ch. 19/21	
23	4-1	T	Exam III	
24	4-3	R	Ch. 21	9, 10(a-e), 11(a-e), 12, 14, 15, 29, 33, 34, 39, 43, 44, 58, 62, 68, 69, 71(a,b), 87, 90, 101, 102, 105, 112(a-d), 113, 130, 132, 138, 147
25	4-8	T	Ch. 21	
26	4-10	R	Ch. 21	
27	4-15	T	Ch. 24	4, 8, 10, 13, 26, 28, 39, 40, 42, 43, 44, 45, 48, 79(c), 81(c), 83, 95, 103, 106, 120, 123, 132
28	4-17	R	Ch. 24	
	4-29	T	FINAL EXAM, 11:30 - 2:00, EH 103	