

## CHEM 110 SYLLABUS FALL 2011

**Sections:** 3 and T401

T401 is for specific pre-nursing and pre-physical therapy students that are participating in a Themed Learning Community, or TLC. More information is at the end of this document.

**Class Schedule:** Tue and Thu, 2:00 PM to 3:15 PM in Faraday 143

**Instructor:** Dr. Gary Baker

**Office:** La Tourette Hall (LaH) 426

**E-mail:** [bakeratniu@hotmail.com](mailto:bakeratniu@hotmail.com) (preferred) or [gbaker@niu.edu](mailto:gbaker@niu.edu)

**Office Hours:** Monday: 10:30 AM – 12:00 PM; Tuesday and Thursday: Immediately after class. TLC students may also request appointments outside these times, if needed.

### TENTATIVE SCHEDULE

Week	Chapter	Topic
1: Aug 22	1	Chemistry: Methods and Measurements
2: Aug 29	1, 2	The Structure of the Atom and the Periodic Table
3: Sep 5	2	
4: Sep 12	3	<b>Exam 1 – Sep 13 (Tue): Chapters 1 and 2</b> <b>Thu:</b> Structure and Properties of Ionic and Covalent Compounds
5: Sep 19	3	
6: Sep 26	4	Calculations and the Chemical Equation
7: Oct 3	4	
8: Oct 10	5	<b>Exam 2 – Oct 11 (Tue): Chapters 3 and 4</b> <b>Thu:</b> States of Matter: Gasses, Liquids, and Solids
9: Oct 17	5	
10: Oct 24	6	Solutions
11: Oct 31	6	
12: Nov 7	7	<b>Exam 3 – Nov 8 (Tue): Chapters 5 and 6</b> <b>Thu:</b> Energy, Rate, and Equilibrium
13: Nov 14	7	
14: Nov 21 – Tue only	8	Acids and Bases and Oxidation-Reduction
15: Nov 28	8	
16: Dec 5		<b>Exams 4 and 5 - Dec 6 (Tue) 2 - 3:50 PM</b> <b>Exam 4: Chapters 7 and 8</b> <b>Exam 5: Chapters 1 through 6 (Comprehensive)</b>

**Required Textbook:**

Denniston, Topping, Caret 7<sup>th</sup> ed. "General, Organic and Biochemistry". The NIU bookstore should have a custom edition that includes only Chapters 1 through 9. You should read each chapter before lecture, download and print any PowerPoint slides or notes posted on Blackboard, and work the in-text example problems. In addition, it is recommended to work as many problems at the end of the chapter as you can. The more problems you can do, the better chance you have of retaining your knowledge and doing well on the exams.

**Recommended:**

Student Study Guide/Solutions Manual

**Calculator:**

You will need a simple scientific calculator that you are able to use properly. Bring it to both lecture and exams. Any calculator used must support *log functions* and *scientific notation*. Graphing calculators will not be allowed during exams. Also, **a cell phone is not allowed as a calculator. Use of Graphing Calculator, iPod, cell phone, or similar device during an exam will result in an automatic zero and will not be replaced by any other score.**

**Common Sense Conduct:**

Please store all mobile electronic devices and silence all cell phones. Emergency alert settings are allowed. Please refrain from talking (unless part of a class activity), texting, etc. during class. Be respectful of other students. If repeated disturbances of my lecture occur, you will be asked to leave class.

**Policy on Academic Honesty:**

Students are expected to do their own, original work and to observe the commonly accepted standards of academic honesty at all times. Scholastic dishonesty will not be tolerated. This includes **plagiarism** (appropriation of another's work, claiming it as your own, and submitting it for credit) and **collusion** (**unauthorized** collaboration with another person in preparing course work offered for credit). This includes having a tutor or friend do your work for you. Do not ask for answers during exams. Such acts at anytime will result in a grade of zero (for all persons involved) and are not subject to "make-up" work. For a second offense, the overall course grade will be dropped to a letter grade of "F" and a statement of the incident will be submitted to the campus judicial office for follow-up action.

**Other Study Resources:**

The Chemistry Department maintains a tutoring room in Faraday 246 for the benefit of General Chemistry students. It is staffed from approximately 8:30 am–3:30 pm Monday–Friday. Tutoring is free for registered CHEM 110 students. Alternatively, names of tutors who charge for their services are usually available from Linda Davis in Faraday 319 (the Chemistry Department Office) several weeks after the start of the semester. A Supplemental Instructor (SI) is also assigned to each CHEM 110 section by the ACCESS office. Schedule and availability will be announced in class and posted on Blackboard. SI sessions will also include practice exams.

**Class Format:**

The course will be primarily composed of interactive lectures, problems (please bring your calculator), and exams. It is strongly recommended that you attend class. As in other science courses, the in-class lectures need to be supplemented by your reading of the textbook, working of problems, and studying for exams. If you miss class, it is your responsibility to acquire the lecture notes and any assigned class work from a classmate. You should also check Blackboard regularly for postings. You may not take exams at any other place or time. Exceptions:

1. Students registered with the CAAR office, and
2. Students at school athletic events which may require that you take an exam **early**.
3. Hospitalization.

Please keep in mind that notes from campus Health Services are often inadequate and not a guarantee of an exemption.

**Exams and Grades:**

There will be **five** exams, each worth 100 points for a total of 500 points (see tentative schedule on p. 1 for a list of chapters covered on each exam). Each exam, unless otherwise indicated, will include 20 multiple questions (worth 80 points, and scored by SCANTRON) and 2 or more analytical or show-all-work questions (worth 20 points). Requests for SCANTRON scoring checks must be made by email from your school account within one week from posting of scores on Blackboard, and must include Exam version (color), your name, your account ID (z number), and what you believe was graded incorrectly. All exams, except the final, will be given during scheduled class time. Many scoring problems can be avoided by carefully following instructions given in class on exam day. I will not re-score a Scantron because of you failed to follow instructions.

**Final Grade Determination:**

There is a set amount of knowledge and skill you must demonstrate to achieve your grade. The class GPA will be adjusted between 1.70 and 2.00 (4.00 scale) to meet department requirements. The A and the F cutoffs will not be adjusted. The initial distribution will be: (Blackboard will display your running point total)

**A: 425 – 500+ points**

**B: 375 – 424 points**

**C: 325 – 374 points**

**D: 250 – 324 points**

**F: < 250 points**

Your exam 5 score will replace your worst exam 1, 2, or 3 score, but only if this benefits the students point total. For example, a student may score 16, 80, and 84 on exams 1, 2, and 3, and score a 76 on exam 4 and a 64 on exam 5 (total point score = 320, or D). In this example, the 64 would replace the 24, giving a new total point score = 368, or C. Note that exam 4 will not be replaced by this policy. Also note that this policy allows you to miss exam 1, 2, or 3 if absolutely necessary without prejudice or preferential treatment (whether due to illness, car trouble, over-sleeping, alien abduction...), and thus minimizes the effect of one poor score on the overall grade. Because of this policy, **there will be no extra credit, makeup assignments, or makeup exams.**

**Notification of Services for Students with Documented Disabilities:**

NIU abides by Section 504 of the Rehabilitation Act of 1973 which mandates reasonable accommodations be provided for qualified students with disabilities. If you have a disability and may require some type of instructional and/or examination accommodation, you will need to register with the Center for Access-Ability Resources (CAAR), the designated office on campus to provide services and administer exams with accommodations for students with disabilities. The CAAR office is located on the 4th floor of the University Health Services building (815 753-1303). Accommodations are not retroactive. Please contact me early in the semester so that I can provide or facilitate in providing accommodations you may need. You must for each exam have a form filled out about 10 business days in advance to be sure to have a CAAR test time appointment.

**Themed Learning Community:**

Students registered for the T401 section of CHEM 110 participate in an integrated curricular experience that includes COMM 100 (Instructor, Antwan Hampton) and UNIV 101 (Instructor, Julie Kaiser). In addition to the course requirements stated above, TLC students will need to complete two integrated assignments that each culminate with a speech. For the first speech, TLC students will research a health-related area that includes a clear chemistry connection. Examples include a disease for which there is an FDA-approved drug therapy (e.g. Parkinson's disease, diabetes mellitus, type I or II, asthma...), infections that can be treated with antibiotics, effects of natural toxins (e.g. cholera), forensics (e.g. why death by KCl injection is difficult to detect in post-mortem), use of radioisotopes in medicine, and so on. Topics to be avoided are those that lack a clear mode of chemical action, such as herbal or other holistic therapies, or sensationalistic claims of weight loss remedies "fountain-of-youth" creams, scalar energy water, and so on. An exception is when there is a clear chemical argument that refutes a sensationalistic health-related claim, as in the case of scalar energy water or so-called "magnetic bottles". TLC students will receive additional instructions in COMMS 100. My role in this assignment is as a consultant to discuss with each student possible chemical connections to a chosen topic, clarify if such connections are valid, or to help the student choose a viable topic. To prepare for the second speech, TLC students will participate in a field trip to Delnor Hospital in Geneva, IL on Monday, October 31 from 1 – 3 PM. Transportation will be provided and preparatory details will be presented during class sessions. Because of the field trip, TLC students will miss the CHEM 111 lab that is scheduled for that day. The field trip will include a tour and a classroom presentation that will focus on diagnostic imaging and use of radioisotopes. A cross-sectional image specialist and nuclear technologist will be on hand to conduct the session and to answer questions. A major question that TLC students should be able to address is why a patient, after having a CT or MRI, may also need to be administered radioisotopes for additional imaging procedures, such as a PET scan. What kinds of diagnostic information do these various scans give, why is a radioactive material given to the patient, and what are the risks to the patient? A CHEM 111 lab or pre-lab activity, prior to the field trip, will engage TLC students in a "mock" preparation of a radioisotope solution that, when administered to the patient, will include the correct dose of radioactivity. There will be no actual handling of radioisotopes; it is only a simulation.