CHEM 150  CHEMISTRY FOR ENGINEERS  Fall 2016

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Office Hours will be posted on Blackboard.

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Office Hours will be posted on Blackboard.

COURSE DESCRIPTION:  This one semester course is designed for students in the School of Engineering who are not required to take additional chemistry courses at the college level.  Topics covered in this integrated lecture and laboratory course include quantum theory, atomic structure, chemical bonding, solids, liquids, gases, thermodynamics, equilibrium, acids and bases, kinetics, polymer chemistry, and materials science. The application of these concepts to engineering problems and practices is emphasized.

PREREQUISITES:  A course in high school chemistry and eligibility for MATH 121 or MATH 125 (or Departmental consent). Students not admitted to the School of Engineering must receive permission from instructor. This course will not serve as a prerequisite for any other chemistry course and meets no requirement for any major outside the School of Engineering.

CLASS TIME:  MWF 9:00 – 9:50 am, 3140 Wescoe
For best understanding of the material, you should read the assigned sections from the text before class.

CLASSROOM DECORUM:  While attending the lectures will likely improve your understanding of the material, attendance is not mandatory (although note that there will be no make-up quizzes). Thus, talking with friends, reading the newspaper, completing homework, listening to electronic devices, texting, and other disruptive activities should be carried on outside of class.

COURSE WEBSITE:  Assignments and other course documents will be posted on Blackboard. You may also post questions on the Discussion Board on the course Blackboard site. We will try to address questions either on the site or during class.

COURSE EMAIL:  Chem150_@ku.edu. Please use this email address for all questions about course logistics, homework, OWL, grades, etc.

TEXTBOOK:  Chemistry for Engineering Students, by Brown and Holme. (The third edition is available from bookstores. However, since homework will be mostly or entirely assigned on OWL, you may use any edition of the text.)

ONLINE HOMEWORK:  Most homework and pre-lecture assignments will be submitted online. A subscription to the OWL2 interactive online homework system is required.

CLICKERS:  This class will use clickers (iClicker2) for in-class participation. Each student is required to purchase a clicker. The iClicker is the KU standard and can be used in multiple classes. Your clicker score will be based solely on the number of clicker questions you answer, not on whether you answer correctly. You can receive full
credit for clicker questions for the semester by answering 80% or more of clicker questions. **NOTE:** Some quizzes may be administered by iClicker and graded. These would be part of your quiz grade.

**Recitation:** The first hour of each lab session will be devoted to a recitation led by your graduate Teaching Assistant. These recitations will build on the concepts and problem-solving approaches discussed in the lecture and experienced in the laboratory. They will not merely be a demonstration of how to work the homework problems. You should bring your calculator along with paper and a writing utensil to each recitation. Worksheets, to be completed during the recitation section, may also be assigned.

**Discussion:** Time and place to be determined. The optional discussion provides an informal period for raising questions concerning lecture material, assigned readings, and problem sets. Group and individual problem solving sessions may also be held during this time. Discussion sections will be interactive, so come prepared to ask questions and participate.

**Homework:** *Working problems is the best way to understand chemistry.* Weekly homework will be assigned. Most homework will be submitted and graded on the OWL website. Some homework may also be assigned to be turned in in class. Material related to the homework will be included in the quizzes and exams. Generally these will be due by midnight Thursdays. Some supplemental, recommended problems may also be assigned from the textbook.

**Pre-Lecture Homework:** Pre-lecture exercises and problems will be assigned regularly. These exercises are designed to help you complete and understand reading assignments before the lecture and will be due before the start of class.

**Exams:**
- Exam 1: Thursday, Sept. 22, 8:00 – 10:00 pm, 110 Budig Hall
- Exam 2: Thursday, Oct. 20, 8:00 – 10:00 pm, 110 Budig Hall
- Exam 3: Thursday, Nov. 17, 8:00 – 10:00 pm, 110 Budig Hall
- Final Exam: Friday, December 16, 7:30 am!! – 10:00 am, 3140 Wescoe

You will only be permitted to use an acceptable non-programmable calculator on exams: Texas Instruments 30XA or Casio FX260.

*No make-up exams will be given.* Please notify me at least one week in advance if you must miss the exam for a legitimate reason so that arrangements for an early exam can be made. If you must miss an exam for a legitimate, documented emergency, the exam grade for that exam will be replaced by the average of your other midterm exams.

**Quizzes:** Quizzes will be given every one to two weeks (generally Fridays). Quizzes will be announced at the preceding lecture period. These 10-15 minute quizzes will cover material discussed in the lectures, discussions, and problem sets. **There will be no make-up quizzes.** The lowest quiz score of the semester will be dropped. Some quizzes may be administered by iClicker and graded as part of your quiz grade.
**Grading:**

Mid-term exams (100 points each) 300 pts
Pre-lecture homework 40 pts
Clicker questions 40 pts
Worksheets (in class) 60 pts
Recitations 40 pts
Homework 60 pts
Quizzes 50 pts
Final Exam 150 pts
Total (lecture portion) 740 pts

Laboratory 260 pts
Total (Lecture and Laboratory) 1000 pts

Final grades will be based on the class average and standard deviation. The +/- grading scale will be used. Thresholds for final grades may be lower than the standard (93-100 = A, 90-92 = A-, 87-89 = B+, 83-86 = B, 80-82 = B-, 77-79 = C+, 73-76 = C, 70-72 = C-, 67-69 = D+, 63-67 = D, 60-62 = D-, < 60 = F) but will not be higher. While grades determined on a “curve” cannot be ultimately determined until all points have been assigned, the instructor will provide updates to let you know where you stand with regard to a letter grade during the course of the semester. If at any time you have any questions concerning your grade status, please contact the instructor. **No changes in exam scores will be considered later than one week after grading.**

**Lab Reports:** Lab reports must be submitted at the beginning of the lab period in which they are due. Follow the link to Guidelines for Lab Reports on the course and laboratory websites for details. While you are encouraged to discuss concepts you encounter in the lab with other students, you must submit your own work. Lab reports are not group assignments, always use your own words. Never include language taken from other sources (including the lab handouts) without attribution – this is plagiarism and will be considered academic misconduct that will be prosecuted to the fullest extent possible (see the Academic Misconduct section above).

**Lab Question Sheets:** During a few lab sessions this semester, you will work with a small group of your classmates to complete question sheets related to the experiment. These must be completed during the lab session and submitted to your TA before your group leaves for the day.

**Lab Grading:** The laboratory course will account for 260 points of your final Chem 150 grade (out of 1000 total points). For this laboratory portion of your grade, pre-lab quizzes total 20 points, lab notebooks 20 points, lab question sheets 40 points, and lab reports 180 points.
**ACADEMIC MISCONDUCT:** University Senate Rules and Regulations defines academic misconduct as follows: **Academic misconduct by a student** shall include, but not be limited to, disruption of classes; threatening an instructor or fellow student in an academic setting; giving or receiving of unauthorized aid on examinations or in the preparation of notebooks, themes, reports or other assignments; knowingly misrepresenting the source of any academic work; unauthorized changing of grades; unauthorized use of University approvals or forging of signatures; falsification of research results; plagiarizing of another’s work; violation of regulations or ethical codes for the treatment of human and animal subjects; or otherwise acting dishonestly in research. ([http://policy.ku.edu/governance/USRR#art2sect6](http://policy.ku.edu/governance/USRR#art2sect6))

Any incident of academic misconduct in this class will be prosecuted to the fullest extent possible according to the procedures outlined in the KU Student Handbook ([http://www.studenthandbook.ku.edu](http://www.studenthandbook.ku.edu)). At a minimum, this includes receiving no credit for the work in question, but may also result in a grade of F in the course and suspension or expulsion from the University. While students are welcome and even encouraged to study or work on assignments in groups, any work that you turn in must be your own. Specifically, any work you turn in should reflect your knowledge of the subject matter and be your original work. KU subscribes to a digital plagiarism detection program that will be used to check papers, including lab reports, submitted in this class. Students will be asked to submit writing assignments in a digital format so papers can be checked against web pages and on-line databases of existing papers. Additionally, please note that students’ exams, papers, or laboratory reports may be photocopied at the discretion of the instructor without the knowledge or consent of the student.

**COURSE MATERIALS AND NOTE-TAKING:** Course materials prepared by the instructor, together with the content of all lectures and discussion sessions presented by the instructor are the property of the instructor. Video and audio recording of lectures and discussion sessions without the consent of the instructor is prohibited. Pursuant to the University of Kansas’ Policy on Commercial Note-Taking Ventures, commercial note-taking is not permitted in CHEM 150. Lecture notes and course materials may be taken for personal use, for the purpose of mastering the course material, and may not be sold to any person or entity in any form. Any student engaged in or contributing to the commercial exchange of notes or course materials will be subject to discipline, including academic misconduct charges, in accordance with University policy.

**DISABILITIES:** The Academic Achievement and Access Center (AAAC) coordinates academic accommodations and services for all eligible KU students with disabilities. If you have a disability for which you wish to request accommodations and have not contacted the AAAC, please do so as soon as possible. They are located in 22 Strong Hall and can be reached at 785-864-4064 (V/TTY). Information about their services can be found at [http://www.access.ku.edu](http://www.access.ku.edu). Please contact me privately in regard to your needs in this course.