CHEM 130: General Chemistry I
FALL 2016; Course# 11057; 5 credit hours
KU Core Goal 1, Outcome 2 Quantitative Reasoning
KU Core Goal 3 Natural Sciences
MWF 9:00 A.M. – 9:50 A.M.; Budig Hall, Rm 120

**Instructor:** Dr. Shuai Sun  
**Office Hours:** MWF 10:00-10:50 A.M.  
MAL 3012 (or by appointment)  
**Course E-mail:** chem130ss@ku.edu

**Interim Instructor:** Dr. Drew Vartia  
**Office Hours:** MTW 4:00-5:00 P.M.  
MAL 2043 (or by appointment)

**Lecture TA:** Juan Rincon Pabon  
**TA Office Hours:** WF 10:00-11:00 A.M.; location TBA

**Textbook:** Chemistry: A Molecular Approach, 4th Ed. by Nivaldo J. Tro  
ISBN (10-digit): 0144112830  
ISBN (13-digit): 9780134112831  
*ISBN for custom, looseleaf book with Mastering Chemistry access (available at bookstore!)*  
9781323421406

**Online course management tool:** Blackboard  
**Online homework and assessment tool:** MasteringChemistry  
(Registration details will be announced on the first day of class and will also be posted to Blackboard.)

What is CHEM 130?

**1: BASICS OF CHEMISTRY**

- CH 1: Matter, Measurement, Problem Solving
- CH 2: Atoms, Elements
- CH 4: Chemical Quantities, Aqueous Reactions
- CH 3: Molecules, Compounds, Chemical Equations

**2: INTRO TO CHANGES IN CHEMICAL SYSTEMS**

- CH 5: Gases
- CH 6: Thermochemistry
- CH 7: Quantum Mechanical Model of the Atom

**3: ATOMIC AND MOLECULAR STRUCTURE**

- CH 8: Periodic Properties
- CH 9: Chemical Bonding I: The Lewis Model
- CH 10: Chemical Bonding II: Molecular Shape, Valence Bond Theory, Molecular Orbital Theory

**FA16 CHEM130**
**Course Goals:** As a result of taking CHEM 130, we hope you learn a few things about chemistry. Specifically, by the end of the course, you should be able to:

1. Explain the chemical context of topics as they relate to the natural sciences and society.
2. Identify important classes of chemical reactions; analyze chemical reactions and equations with regard to stoichiometry and thermochemistry.
3. Use gas law(s) to describe and quantify properties of and changes to collections of particles in the gas phase.
4. Describe atomic structure in terms of basic quantum mechanical principles and describe molecular structure and properties in terms of theories of chemical bonding.
5. Explain periodic trends based on quantum mechanics and rationalize chemical data and/or behavior in terms of periodic trends.
6. Acquire, accurately record, competently interpret and report experimental data.
7. Apply good laboratory practices, including safety and ethics.

**Other nuts and bolts:**

**Handouts and lecture material:**

Throughout the semester, there will be class information available on Blackboard. Check Blackboard regularly for course related announcements. Lecture slides and worksheets will be posted on this site. The lecture slides are brief, and they may not contain everything you will need to know. Most of the material will be covered in detail in class only. It is very important that you develop good note taking skills and attend lectures regularly to be successful in this course. You are advised to bring a copy of the worksheet to class with you.

**Use of cellphones, laptops and other devices:**

As a class policy, you are advised not to use cell phones, laptops, tablets or any other electronic devices while the class is in progress. Students must refrain from talking to one another during the lecture to avoid distractions. Active participation in lecture-related activities is strongly encouraged.

**E-mailing the instructor:**

Emails sent to the instructor’s personal ID will not be addressed or replied to. Only the course email ID shall be used for all correspondences. Emails are to be used for administrative purposes only. If you have doubts about the material or need additional explanation of the concepts or problems, you are advised to meet the instructor or the TA before/after class, during office hours or make an appointment.

**Selected important dates regarding your enrollment in the course:**

- **August 27:** Last day to enroll, add, or change sections online; 50% refund begins.
- **September 12:** Last day to drop a class and not have it appear on your transcript.
- **November 16:** Last day to withdraw or drop a course with a “W” in your transcript.

Additional dates can be found at [https://registrar.ku.edu/fall-2016-academic-calendar-date](https://registrar.ku.edu/fall-2016-academic-calendar-date)
Grading:

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<td>Exam 1</td>
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<td><strong>TOTAL</strong></td>
<td><strong>800</strong></td>
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Final Letter Grades:

- A 90% - 100%
- B 80% - 89%
- C 70% - 79%
- D 60% - 69%
- F 59% and below

*No opportunities for extra credit will be provided*

Homework and Assessment:

**Graded homework:** The key to success is constant attention and review, rather than delayed cramming before an exam. Accordingly, homework problems will be assigned on a weekly basis utilizing the MasteringChemistry program. The steps to register for the program will be posted to Blackboard. These problems will be similar in difficulty to what will appear on exams or other parts of the course. They are designed to aid you in understanding important material in the course or to help you practice solving problems that are relevant to chemistry.

**Practice problems:**
Suggested practice problems for each chapter will be posted online. These problems are selected from the textbook and can be found at the end of each chapter. Answers to these problems can be found at the end of the textbook. These problems are for practice purposes only and not for credit.

Class Preparation and Participation:

**Pre-lecture Questions:** Pre-lecture questions will be given on Blackboard before each lecture. The questions aim to help you understand the materials from the textbook. There are approximately 3 to 5 questions for each lecture, and the answers to all of the questions can easily be found in the textbook. The total number of points for pre-lecture questions will be normalized to 40 points at the end of the semester. For example, if you score 123 of 160 at the end of the semester, you will receive $(167/200) \times 40 = 0.835 \times 40 = 33.4 \rightarrow 33$ points, where standard rounding rules have been applied.
**Clickers:** We will use i>Clicker2 to collect student responses to short problems during class. This helps me understand what you know while giving everyone a chance to participate. We will use these most class periods, often several times per class. i>Clicker2 devices are available from the Bookstore. No written responses or responses from the i>Clicker GO mobile application will be accepted.

**Clicker Registration:** Register your i>Clicker2 through your Blackboard account. Go to the CHEM 130 page in Blackboard. Click the link at the bottom of the left panel that says “i>Clicker2 Registration.” In the new window, enter your i>Clicker2 registration number, found below the bar code on the back of the clicker or found on the clicker window when the clicker is turned on.

**Clicker scores:** Clickers will contribute 40 points to the total points possible (see above). The 5 sessions with the lowest percentage score will be dropped to handle various situations, like the bus running late, dead batteries, excused absences, etc. No additional accommodations will be made.

Each question will be scored out of 3 points based on participation (2 points) and accuracy (1 point). There may be more than one question in a session (class period).

Because the number of questions is unknown, your clicker score will be normalized at the end of the semester. Normalization of points will be carried out as follows: if you earned 142 of 160 points, your clicker total points at the end of the semester will be $40 \times \left(\frac{142}{160}\right) = 35.5 \rightarrow 36$ points, where standard rounding rules have been applied.

**Clicker Policies:** I consider bringing a fellow student's i>Clicker to class to be cheating and a violation of the University Honor Code. If you are caught with a remote other than your own or have votes in a class that you did not attend, you will forfeit all clicker points and may face additional disciplinary action.

**Other forms of Participation and Preparation:** Approximately once per week, I will have you work longer problems during class or write briefly about a topic. Your responses will be collected in class and will be used to gauge the classes understanding of the material. It also provides a chance for you to practice problems and test your own understanding. These will not count for credit, but they will benefit us both.

**Examinations:**

**Examination Schedule:**

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<th>TIME</th>
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<tr>
<td>1</td>
<td>Thurs., Sept. 15th</td>
<td>8:00 P.M. - 10:00 P.M.</td>
<td>BUD 120</td>
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<tr>
<td>2</td>
<td>Thurs., Oct. 13th</td>
<td>8:00 P.M. - 10:00 P.M.</td>
<td>BUD 120</td>
</tr>
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<td>3</td>
<td>Thurs., Nov. 10th</td>
<td>8:00 P.M. - 10:00 P.M.</td>
<td>BUD 120</td>
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<td>4</td>
<td>Thurs., Dec. 15th</td>
<td>7:30 P.M. - 9:30 P.M.</td>
<td>TBA</td>
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**Examination Policies:**

There will be no makeup or alternate exam after the regular scheduled exam.

In case you have a legitimate reason for missing an exam, you will need to contact the instructor in person at least 10 days prior to the exam date. Legitimate reasons include only University-related events, other conflicting exams or classes, medical crisis or religious events. Reasons that do not fall under the above mentioned categories will not be excused under any circumstances. You will get a score of zero on any exam you miss for reasons that are not excused by the instructor.
**Note on test grades:** The exam scantrons are machine-graded, and the machine is **100 % accurate**. Because of this, we will not consider requests for re-grading of the scantron sheets. **Make sure that the answers you mark on the scantron sheets are the answers you wish to have graded.**

**Laboratory:**

Learning the proper laboratory skills is essential to being a successful chemist. You need to go to each lab prepared to do the assigned experiment. Read the experiment **before** you go to the laboratory and make sure you have some idea of what you need to do. Your laboratory teaching assistant will help you throughout each experiment. See separate website sheet for additional scheduling information. Students are required to pass an online safety examination before being allowed to participate in the laboratory experiments. More details will be given in class.

Laboratory Director: Dr. Roderick Black, 2021 Malott, 864-3481, rsblack@ku.edu

Laboratory Safety: Follow the link to Safety Regulations for Chemistry Lab on the Chemistry Lab website, and review these Regulations often. Chemistry Department-approved **full-coverage goggles** must be worn at all times. If a student is found not wearing goggles at any time while laboratory work is being conducted anywhere in the room, this student will receive a warning or a grade penalty, and may be asked to leave the room. Laboratory students must wear **long pants**. It is not acceptable to wear shorts of any kind, Capri pants or intermediate-length pants of any kind, or skirts. Shoes must cover the entire foot. Open-toed shoes, open-heeled shoes, sandals, or shoes containing holes are not acceptable. (If a student’s attire fails to meet these guidelines because of religious or cultural requirements, the student must contact the instructor in advance of the lab period.)

**Additional resources:**

**PLUS (Peer Led Undergraduate Supplements):** Peer led supplemental discussion sessions are couple with interactive exercises that reinforce lecture materials in a small group setting. These sessions are specifically designed to bridge gaps between teaching and learning. PLUS is open to all students enrolled in the course, and those who regularly attend this free academic support activity perform better than the class average. Please come to any discussion that fits your schedule. The sessions are free!

**Academic Achievement and Access Center:** The Academic Achievement and Access Center (AAAC) is another on-campus resource available to you. They provide a number of services, including course-specific tutoring, supplemental instruction, and academic consultations. The website is [www.achievement.ku.edu](http://www.achievement.ku.edu), or you can phone (785) 864-4064.
IMPORTANT UNIVERSITY POLICIES:

Students with 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"
Please contact the AAAC privately in regard to your needs in this course.

Recording of lectures:
Video and audio recording of the lectures and review sessions without the consent of the instructor is prohibited. On request, the instructor will usually grant permission for students to audio-record lectures, on the condition that the audio is used only as a study aid by the individual student making the recording. Unless explicit permission is obtained from the instructor, recordings of lectures and review sessions may not be modified and must not be transferred or transmitted to any other person, whether or not that person is enrolled in the course.

Notes on Academic Misconduct:
It is expected at the University of Kansas that students adhere to high standards of personal and scientific integrity. In scientific endeavors the same is also expected. Science cannot work without honest reporting of data and the proper attribution of authorship. The following statements are given as reminders of the expectations for this class and the labs:
"Cheating, or the appearance thereof, including giving or receiving help on an exam, looking at another student’s paper while taking an exam, falsifying exam papers, using unauthorized materials, notes, crib sheets, or the equivalent, etc., faking laboratory data, reporting other people’s results as your own, etc., are not acceptable and will be dealt with in accordance with published University regulations."
“Students who engage in disruptive behavior, including persistent refusal to observe boundaries defined by the instructor regarding inappropriate talking, discussions, and questions in the classroom or laboratory may be subject to discipline for non-academic misconduct for disruption of teaching or academic misconduct, as defined in the Code of Student Rights and Responsibilities (CSRR):
It is perfectly OK--and strongly encouraged--to study and work problems with others outside of class and to discuss lab procedures, results and interpretations with others, both during and outside of lab. It is essential; however, that the data you report be yours and as you observed it and that all the write-ups are in your own words.

Commercial Note-taking:
Pursuant to the University of Kansas’s Policy on Commercial Note-Taking Ventures, commercial note-taking is not permitted in CHEM 130. 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. Please note: note-taking provided by a student volunteer for a student with a disability, as a reasonable accommodation under the ADA, is not the same as commercial note-taking and is not covered under this policy.