

General Education Course Approval Cover Sheet

Date of Submission 9/24/10

1. Check which area(s) this course applies to

Inquiry – Arts & Creativity	<input type="checkbox"/>	Composition & Communications - II	<input type="checkbox"/>
Inquiry – Humanities	<input type="checkbox"/>	Quantitative Foundations	<input type="checkbox"/>
Inquiry – Nat/Math/Phys Sci	<input checked="" type="checkbox"/>	Statistical Inferential Reasoning	<input type="checkbox"/>
Inquiry – Social Sciences	<input type="checkbox"/>	U.S. Citizenship, Community, Diversity	<input type="checkbox"/>
Composition & Communications - I	<input type="checkbox"/>	Global Dynamics	<input type="checkbox"/>

2. Provide Course and Department Information.

Department: Chemistry

Course Prefix and Number: CHE 105/CHE 111 Credit hours: 3 + 1

Course Title: General College Chemistry I

Expected Number of Students per Section: 250 Course Required for Majors in your Program (check one)? Yes No

Prerequisite(s) for Course? Math ACTE of 23 or above, or MA 109, or Math 110, or the KCTCS course

This request is for (check one) A New Course An Existing Course

Departmental Contact Information

Name: Stephen Testa Email: testa@email.uky.edu

Office Address: 120 Chemistry-Physics Building Phone: 257-7081

3. In addition to this form, the following must be submitted for consideration:

- A syllabus that conforms to the Senate Syllabi Guidelines, including a mapping of the stated learning outcomes to those presented on the corresponding Course Template.
- A completed Course Review Form. See the Gen Ed website <http://www.uky.edu/gened/forms.html> for these forms. Proposals prepared prior to September 15th, 2010 are allowed to use a narrative instead of the Course Review Form.
- If applicable, a major course change form for revision of an existing course, or a new course form for a new course.

4. Signatures

Department Chair: Mark Meier  Date: 9/24/10

Dean: Anna Bosch  Date: 9/28/10

All proposals are to be submitted from the College Dean's Office
Submission is by way of the General Education website <http://www.uky.edu/gened>

Approved by Undergraduate Council 3/15/2011

Sharon Gill

Digitally signed by Sharon Gill
DN: cn=Sharon Gill, o=Undergraduate Education,
ou=Undergraduate Council, email=sgill@uky.edu, c=US
Date: 2011.03.15 13:20:42 -0400

General Education Reform Documents

CHE 105: General College Chemistry I

September 25, 2009

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257-7081

Contents

Submitted Electronically:

- 1) General Education Reform Narrative
- 2) CHE 105 Syllabus
- 3) CHE 111 Syllabus
- 4) Turning Point Instructions

Submitted in Print:

- 1) All Homework Assignments
- 2) All Turning Point Assignments
- 3) The CHE 111 Laboratory Manual

General Education Reform Narrative

(to be given to students with the syllabus)

CHE 105: General College Chemistry I (Fall 2010)

This general education reform document outlines the revisions that will be made to the current CHE 105 course so that CHE 105 meets the general education reform requirements. Dr. Stephen M. Testa, the current Director of General Chemistry, prepared this document. Also included are the CHE 105 syllabus and the CHE 111 syllabus, which contains the hands-on project.

General Education Requirements

CHE 105, when combined with CHE 111, will satisfy the general education curriculum requirements for Learning Outcome #1 (Intellectual Inquiry; Inquiry in the Natural Sciences). The overall goal of the general education curriculum is to incorporate experiences that produce understanding of the process of inquiry and help students develop critical thinking skills. The overall goal of Learning Outcome #1 is to learn the ways scientist's work, to conduct basic science, and to actively engage chemical methods with the goal of attaining some understanding of the way science works in and with the natural and social worlds. By taking this course, students will be able to effectively learn and think like a chemist in a complex, multi-disciplinary society.

The student will be exposed to the following three required *core elements*:

- 1) **Students will explore the nature of intellectual inquiry in the chemical sciences.** For example, what is the 'scientific method', what is the process whereby chemists enhance scientific knowledge, and how does one distinguish scientific fact from pseudoscience. The students will be subjected to several instances of how intellectual inquiry has occurred in the past, how it occurs today, and how it might occur in the future. Focusing on the nature of intellectual inquiry, rather than on just the course material, is a matter of shifting the focus of General Chemistry instruction. With this in mind, the instructors will modify how they are teaching the material to highlight how science and scientists work. This core component represents a significant departure from the way CHE 105 is currently taught.
- 2) **Students will be brought into contact with faculty and graduate students who are engaged in chemical inquiry.** This will take the form of recitation sections with graduate students, and short class visits by chemistry faculty. The faculty class visits will be carefully coordinated so that the faculty can tie their research programs into the course material currently being covered. In this way, the students can see how scientists work, and how they can relate chemistry to real-world problems. The graduate student recitation sections will be utilized in such a way as to allow the general chemistry students to interact with graduate students in an open discussion-type atmosphere (i.e. not simply working homework problems). It is informative to note that creating recitation sections was recently strongly recommended by an external

committee of distinguished faculty that reviewed our department last year. This core component represents a significant departure from the way CHE 105 is currently taught.

3) Students will develop a foundation for critical and thoughtful approaches to solving problems. The students will learn critical problem-solving skills, and be expected to apply them creatively to solve new types of problems. This core component is already addressed thoroughly in CHE 105.

The students will have fulfilled the following seven required learning outcomes:

1) Describe methods of inquiry that lead to chemical knowledge, and distinguish scientific fact from pseudoscience. Nearly all chapters of the textbook describe methods of inquiry. We will stress the methods involved and focus on teaching the students how to utilize, as well as adapt, these methods to their necessary situations. The textbook also has chapter sections that specifically tie in the course material with society. These 'Chemistry in Action' sections will be used as a foundation for teaching the students how to distinguish scientific fact from pseudoscience. This learning outcome represents a relatively minor shift in how CHE 105 is currently taught.

2) Explain fundamental principles of chemistry. The fundamental principles of chemistry are described at length in the required textbook, and are outlined in the accompanying syllabus. These principles will be explained separately in class by instructors and in a supplemental program package with 'professional' chemistry instructors (Thinkwell's Chemistry Package). This learning outcome is already addressed in CHE 105.

3) Apply chemical principles to interpret and make predictions. This will take on many forms in this class, including utilizing the periodic table to interpret and predict chemical reactions, reaction quantities, and chemical properties. This learning outcome is already addressed in CHE 105.

4) Demonstrate an understanding of discoveries that changed our understanding of the world. The student will be introduced to a variety of important discoveries, especially the discovery of the atom, electron, and nucleus. The impact of these discoveries, both current and future, will be discussed. This learning outcome is already addressed in CHE 105.

5) Give examples of how chemistry interacts with society. Each chapter of our textbook has one or more sections labeled 'Chemistry in Action', whereby such examples are discussed in detail. These sections will be covered at length in the course lectures, and will be the nucleation point for class discussions on how the course material interacts with society, especially including societal problems. These discussions will start in the lecture classes, but will mostly occur in the recitation sections (small discussion groups), which will further increase the interaction of the general chemistry students with graduate students. This learning outcome represents a significant shift in the way CHE 105 is currently taught.

6) Conduct a hands-on project. This learning outcome will be fulfilled by the student taking the accompanying General Chemistry Lab (CHE 111), in which 10 hands-on projects are conducted. See below for each project's learning objectives, and the syllabus for more detailed information. This course element will introduce students to the strengths of a research university, as well as to rigorous practical inquiry. The lab reports will also provide opportunities

for students to hone their scientific writing skills. This learning outcome is already addressed in CHE 111, which will have to be taken with CHE 105 to obtain Gen Ed credit for CHE 105.

7) Recognize when information is needed and demonstrate the ability to find, evaluate, and use sources of chemical information. In many ways this learning outcome is the crux of chemical inquiry. The student will learn precisely where to go to find certain types of chemical information, how to understand such information, how to use this information for predictive purposes (even when dealing with unforeseen types of problems), and how to evaluate the answers obtained. The students will extensively use the periodic table (our greatest source of information), the textbook and lab book (and their accompanying data charts and tables), and the internet (chemistry web sites, tutorials, homework, and chemical tables) in this learning outcome. This learning outcome is already addressed, but will be strengthened, in CHE 105.

How Assignments Build on Each Other to Fulfill Core Competencies

Learning chemistry is a comprehensive venture. One must use knowledge and calculations taught in early chapters to solve problems in later chapters. For example, in Chapter 3 the students learn how to calculate quantities (moles) of material. They then need to be able to use mole calculations in Chapter 5 (for computing gas laws), Chapter 6 (for thermochemistry), and Chapter 11 (for understanding phase changes). Another example is calculating energy, which is taught in Chapter 6 (thermochemistry). This information must be utilized in Chapter 7 (to understand atomic theory), Chapter 8 (to understand electron affinity), and Chapter 9 (to calculate bond enthalpies). A final example is learning about electron configurations in Chapter 7, which is used in Chapter 8 (to predict physical properties), and Chapter 10 (to predict chemical geometries). The very nature of chemistry is a building process; whereby a comprehensive understanding of chemistry is learned through the increasing complexity of the material. Therefore, the student assignments start relatively simple, and progressively become more complex, requiring students to apply information and calculations learned in prior chapters to later chapters. These assignments take the form of online homework, textbook homework, lab experiments, and tests. It is only in assignments building on each other that the students are able to fulfill the learning outcomes above.

Guidelines for Course Designers

1) Demonstrated focus on the processes of science and scientific thinking. Each chapter in the textbook covers different scientific processes, and so requires different ways of thinking. These processes will be explicitly highlighted in lectures via summary slides, both at the beginning and end of each chapter. This will also serve to make sure the instructor focuses on these processes throughout the lectures. This guideline is already addressed, but will be strengthened, in CHE 105.

2) Required student project. This guideline will be fulfilled by the student taking the general chemistry lab, CHE 111. In this lab the students conduct 10 hands-on experiments. In one or more of these experiments, the students are actively involved in all steps of conducting an experiment, including experimental design, data collection, data analysis, summary of the results, conclusions, alternative approaches, and future studies. The students will turn in for grading 10 laboratory reports; they will also have quizzes, worksheets, exams, and other lab related assignments. The lab will effectively introduce the students to many aspects of the

general education curriculum, including employing statistics to analyze, evaluate, and make conclusions based on empirical evidence; identifying multiple dimensions of a good question; information literacy and communication; gaining experience in evaluating theses and conclusions in light of evidence. This will culminate in a hands-on project grade that will be reported as the CHE 111 grade.

3) Information literacy should be integrated throughout the course. This is already addressed in CHE 105.

Laboratory Hands-On Experiments and Their Objectives

- 1) Find the Relationship: An Exercise in Graphing Analysis
 - To learn how to use the 'Logger Pro' software
 - To manipulate data mathematically
 - To write equations for graphed data
 - To determine the correlation factor for data
- 2) Mass, Volume, and Units, Oh My!
 - To determine what information is needed to answer given questions
 - To develop a procedure that will allow you to acquire needed information
 - To take quantitative measurements on a sample
 - To determine density mathematically and graphically
- 3) Empirical Formula of a Copper Salt
 - To learn how to do a gravity filtration
 - To determine the percent composition of a compound
 - To determine the empirical formula of a compound
 - To learn about hydrate compounds
- 4) Synthesis of Aspirin
 - To synthesize aspirin
 - To understand concept of limiting reagents
 - To determine percent composition
 - To learn how to do a vacuum filtration
 - To understand the concept of recrystallization
- 5) Ten Test Tube Mystery
 - To test solubility rules
 - To use deductive reasoning to determine identity of solutions
 - To understand precipitation reactions
- 6) Acid-Base Titration
 - To understand the concept of titration
 - To explain the difference between the analyte and standard solutions
 - To know the definition of an equivalence point
 - To convert between pH and the concentration of H⁺
 - To calculate molarity
 - To use stoichiometry with a balanced chemical equation
 - To learn how to use a burette
- 7) Exploring the Properties of Gases
 - To determine the relationship between variables in the gas law
 - To perform calculations related to the individual and ideal gas laws
 - To determine the experimental value of R (The gas constant)
- 8) Determining the Enthalpy of a Chemical Reaction
 - To calculate heat and enthalpy of reactions
 - To write net ionic equations
 - To use Hess's Law to determine the enthalpy of a reaction
 - To define calorimetry
- 9) Application of Beer's Law
 - To understand absorbance and transmittance of light
 - To understand the Beer's Law equation, its uses, and its limitations
 - To determine the phosphate levels in water samples
 - To understand the concept of dilution
- 10) Molecular Structures
 - To determine the number of valence electrons in molecules
 - To determine the Lewis structure of molecules
 - To determine the electron pair geometry and geometry (shape) of molecules
 - To build molecular models
 - To draw three-dimensional pictures of models

Assessment Strategies

We will be using a variety of assessment strategies in this course. Each of these strategies give the student the opportunity to demonstrate their inquiry and critical thinking skills.

1) **Classroom Inquiry** – Students are required to take part in scientific inquiry during each class period via the 'Turning Point' system. In this system, Powerpoint-embedded quizzes are given to the students during each lecture. The students use remote control devices to answer these questions in class. The daily grades are used to calculate a class participation grade. This system is very effective in assessing the students understanding of the material, as well as to prompt them to think critically about the material. Class questions are an even mix of fundamental chemistry calculations and having the students demonstrate a fundamental understanding of the concepts in chemistry. This method of assessment is already utilized in CHE 105.

2) **Homework** – Students are required to practice their inquiry skills by doing homework problems. We utilize an interactive online system (ARIS), which is aligned with the textbook and integrated into blackboard. This program package not only quizzes students on their critical understanding of the material, but it also seeks to resolve any of the students shortcomings by presenting them with a 'guided tutorial' of the concepts that they do not fully understand, which interactively helps them learn the concepts and calculations they need. This method of assessment is already utilized in CHE 105.

3) **Hands-on Project** – The students must write up laboratory reports for each of the ten experiments that they conduct in CHE 111. They are additionally assessed via a midterm and a final 'lab practical' exam. See the attached syllabus and textbook for CHE 111 for more information. This method of assessment is already utilized in CHE 111.

4) **Exams** – Student understanding and performance in the class will also be assessed using the traditional test format using three regular exams and a comprehensive final. As explained above, learning chemistry is a comprehensive venture. Nevertheless, a comprehensive final is given to ensure that the students have a complete understanding of the material. This method of assessment is already utilized in CHE 105.

5) **Discussion Groups** – Classes of about 30 students will meet once a week, led by a graduate student teaching assistant group leader. These one-hour meetings will specifically focus on developing the inquiry skills of the students. These discussion groups will focus on either 'Chemistry in Action' examples or recent chemical advances from the lay news media (relating how the course material interacts with society). The students will be asked to reflect on the ethical and moral implications of recent advances in chemistry, as well as how to distinguish fact from pseudoscience. The students will be asked to apply their lessons in chemistry towards societal problems, including complex problems that have multiple valid viewpoints. One discussion period will be set aside for focusing on how human diversity has impacted the chemical sciences. The group leader will assign grades based on two activities: First, on student participation in graduate student led discussions (50%), and second, on a two page written report on an original idea regarding how chemistry can improve a multidimensional, interdisciplinary problem in modern society (50%). This method of assessment is not currently being utilized in CHE 105.

Support Materials

Textbook: *Chemistry* by Raymond Chang

Study Guide: *Chemistry* by Raymond Chang

Supplemental Computer Lectures: Thinkwell's *Chemistry* by Harman and Yee

Online Homework: ARIS online homework system (www.mharris.com)

Web Resources: A host of study material, from practice exams, to tutorials; to videos of some lecture material; to self-assessment tests; to external web links to supplemental material are provided within blackboard for this course.

Sources of Chemical Information: The textbook for CHE 105 and the lab book for CHE 111 (made in house) are excellent in providing standardized graphs and tables of chemical data and trends. The students will learn how to assess what information is needed to solve real-world problems, where to obtain the desired chemical information, and how to apply it using these sources of chemical information.

CHE 105 Syllabus

CHE 105: GENERAL COLLEGE CHEMISTRY I

UNIVERSITY OF KENTUCKY

Semester:	Fall 2011 (Example dates below from Fall 2010)
Course:	CHE 105
Time:	To Be Determined
Location:	To be Determined
Prerequisites:	Math ACT of 23 or above; or math placement test; or MA 109; or the KCTCS course CHM 100 or CHM 102.
Textbook:	Nivaldo J. Tro, <i>Chemistry: A Molecular Approach, 2nd Edition</i> , Pearson, 2011.
Required	1. <i>TurningPoint</i> Remote Control Device
Supplies:	2. Mastering Chemistry access code.

COURSE DESCRIPTION AND GOALS

A study of the principles of chemistry and their application to the more important elements and their compounds. The overall goal of this course is for students to learn the ways scientists work, to conduct basic science, and to actively engage chemical methods with the objective of attaining some understanding of the way science works in and with the natural and social worlds. By taking this course, students will be able to effectively learn and think like a chemist in a complex, multi-disciplinary society.

GENERAL EDUCATION INFORMATION

CHE 105, when combined with CHE 111, will satisfy the general education curriculum requirements for Learning Outcome #1 (Intellectual Inquiry; Inquiry in the Natural Sciences). The overall goal of the general education curriculum is to incorporate experiences that produce understanding of the process of inquiry and help students develop critical thinking skills.

Student Learning Outcomes: By the end of CHE 105, students will be able to:

- 1) Describe methods of inquiry that lead to chemical knowledge, and distinguish scientific fact from pseudoscience.
- 2) Explain fundamental principles of chemistry.
- 3) Apply chemical principles to interpret and make predictions.
- 4) Demonstrate an understanding of discoveries that changed our understanding of the world.
- 5) Give examples of how chemistry interacts with society.
- 6) Conduct a hands-on project. This learning outcome will be fulfilled by the student taking the accompanying General Chemistry Lab (CHE 111).
- 7) Recognize when information is needed and demonstrate the ability to find, evaluate, and use sources of chemical information.

ADMINISTRATIVE INFORMATION

1. This course is *not* open to students who have completed both CHE 104 and CHE 108. However, this course *is* open to students who have completed only CHE 104.
2. This course is part of the University Studies Program and can be taken together with CHE 111, followed by CHE 107 and CHE 113 to fulfill the Natural Science requirement in University Studies.
3. Professor Stephen Testa, Director of General Chemistry, and Ms. Amy Horner, Assistant to the Director, coordinate and administer all of the general chemistry courses. They are located in the Office of General Chemistry (CP-120) and can be contacted via email (GenChemOffice@uky.edu), by phone (257-3882), or by visiting the office during normal office hours (8:00 a.m. to 4:30 p.m.).
4. Any student who needs an excused absence because of their observance of a major religious holiday must provide this information to the Assistant to the Director no later than the last day for adding a class (TBD).
5. Any student with a certified disability must provide appropriate documentation (obtained from the Disability Resource Center) to the Assistant to the Director no later than the last day for adding a class (TBD).
6. Administrative dates:

TBD	Last day to add a course.
TBD	Labor Day- Academic Holiday
TBD	Last day to drop a course without it appearing on your transcript.
TBD	Last day to withdraw from a course.
TBD	Thanksgiving- Academic Holiday

GRADING

Grades for the course will be assigned on the basis of the scale shown below. Please note that final numerical grades will not be rounded in assigning final letter grades.

A: ≥ 90 B: ≥ 80 and < 90 C: ≥ 70 and < 80 D: ≥ 60 and < 70 F: < 60

The final grade for the course will be calculated as follows:

Three examinations (20% each)	60%
Class Participation	5%
Assigned Homework	10%
Comprehensive Final Examination	25%
<hr/> Total	<hr/> 100%

The department adheres rigorously to University policy about awarding grades of “I” (Incomplete). See "Student Rights and Responsibilities" at: www.uky.edu/StudentAffairs/Code/. Go to Part II: Rules of University Senate, Section V, 5.1.3.2.

Examinations

There will be three 75-minute examinations and a 2-hour comprehensive final in this course. The final examination will be divided into four sections that correspond to the three regular examinations and the material presented after the third examination.

Regular Exams. For the three regular exams, instructions will be given at 7:50 PM on the day of the examination. Be on time; no student may leave prior to 8:20 PM, and no student will be admitted after 8:20 PM. If you show up after 8:20 PM, you will *not* be allowed to take the exam. You must bring a photo identification card (preferably in color), one or more #2 pencils, and your own simple scientific calculator (with exponents and logarithms) to all examinations. Graphing calculators, calculators with large memory banks, and calculators that permit the entering of alphabetic text are not permitted. No TI-80 series or higher graphing calculator is permitted. The instructor has the final say as to what is acceptable. If you have questions, ask your instructor. All materials (backpacks, purses, pagers, phones, other electronic devices, hats, jackets, water bottles, and other personal belongings) must be left at the front of the room during the exam. Your seating assignment for the examinations will be posted in Blackboard at least one day prior to the examination. The file is located under “Exam Information” / “Seating Charts for Exams”. Please check all exam dates and times for school-related conflicts. If you have conflicts **with any of the exams in the course**, contact the Assistant to the Director (CP-120) *at least two weeks before the first exam* (TBD) to arrange an alternate exam time. We will not be able to accommodate changes to the exam schedule within one week of the exam.

Final Exam. The final exam will be held on Monday, December 13th from 6:00 – 8:00 PM. Contact the Assistant to the Director in CP-120 if you have a course conflict with this time. If you miss the final exam with an excused absence, contact the Assistant to the Director of General Chemistry within a week of the missed exam to make alternative arrangements, which may include receiving an “I” grade and taking the final exam given to students the following semester.

Exam Replacement Policy. On the final examination, you have the opportunity to improve your **lowest** score of the three regular exams. The final exam is divided into four sections, with the first three sections corresponding to regular exams 1, 2, and 3. If your grade on the part of the final that corresponds to your lowest exam grade is improved, we will use the grade from the final in place of the regular exam grade. The purpose of this policy is to motivate students to improve their understanding of the material they found most difficult. If an exam is missed and is not excused, a zero will be given, and this will then be considered your lowest exam score.

Excused Absences from Exams. For students who miss one or more of the regular examinations with a legitimate, documented excuse under the guidelines outlined in the University Senate Rules, and who obtain permission within a week of the regular exam date, an excused absence will be granted and a makeup exam will be allowed. To be excused from an

exam, you must contact the Assistant to the Director of General Chemistry with legitimate documentation within a week of the missed exam. No exceptions to this policy will be made, as we cannot effectively accommodate last minute requests. In general, purchase of an airline ticket, participation in a wedding, extracurricular activities that are not directly related to your education, and any type of retreats that are not religious holidays are not legitimate reasons to be excused from an exam. If in doubt, contact the Assistant to the Director of General Chemistry for clarification. All makeup exams will be given on the first Tuesday evening of 'dead week' from 8:00 pm to 9:15 pm according to the above rules for regular exams, except that the makeup exams will not be multiple-choice questions. If you have to make up more than one exam, or if you have a legitimate, documented conflict with the make-up exam time and date, contact the Assistant to the Director of General Chemistry for additional arrangements.

By-pass Exam. A CHE 105 by-pass examination will be administered on Friday, August 27 from 5:00 to 6:50 PM in CP-139. This exam is open to all students wishing to test out of CHE 105. Students who pass will be allowed to sign up for a CHE 107 by-pass exam which will be held on Monday, August 30 from 5:00-6:50 PM in CP-111. There is no cost for these exams, and your score on the exam is not used in any way to determine your CHE 105 or CHE 107 grade. Students who pass the exam will receive a grade of P; students who do not pass will not receive any grade. To take the by-pass examination, you must register with Ms. Horner in CP-120 prior to 3:00 PM on August 27. Bring #2 pencils, your student identification (or other photo ID) and your non-programmable calculator to the exam.

Class Participation

Class participation grades are obtained for each student using Turning Point 'clicker' devices to answer questions during each class. These grades will be uploaded into blackboard, usually within 48 hours of each class. At the end of the semester the two lowest grades will be dropped. If you attend class and your clicker device is not working, you will be able to sign an attendance sheet and automatically get 25% credit for that day. At the end of the course, if you have an 80% or higher on the overall participation grade, and if you have less than three unexcused absences, your class participation grade will automatically be increased to 100%.

Those students who miss class with a legitimate, documented excuse under the guidelines outlined in the University Senate Rules and who produce documentation to the General Chemistry Office within a week of the absence will be excused for the days missed. All questions related to class participation should be directed to Mr. Ed Duhr, as noted in the Whom to Contact section below.

Class participation grades will start to be recorded on September 13, although your instructor will probably ask practice questions earlier than that. It is very important to note that your instructor has the right to withdraw any or all class participation credit for students being disruptive in class.

Extra Credit

You will be given the opportunity to earn up to 10 bonus points during the semester. This is your only opportunity to earn extra credit. Each bonus point will add 0.1% to your final grade. For example, if you earn 7 bonus points and your average grade at the end of the semester is

89.3, your new average will be 90.0 and you will have earned an “A” for the semester. A bonus point will be given each time you attend the General Chemistry Learning Center (CP-25, make sure to sign in), and as described by your instructor. You cannot earn bonus points after the final examination.

CHEATING

According to the University Senate Rules (6.3.2), cheating includes, but is not limited to, the wrongful giving, taking, or presenting of any information or material by a student with the intent of aiding himself/herself or another on any academic work which is considered in any way in the determination of the final grade. Presenting falsified documents to obtain an excuse from an exam, assignment, or class constitutes cheating and will result in a grade of “E” for the course. The use of a TurningPoint clicker registered to anyone other than you constitutes cheating and both clickers will be confiscated immediately. The fact that a student could not have benefited from an action is not by itself proof that the action does not constitute cheating. The penalty for cheating is a minimum of an “E” on the assignment involved and can be as severe as an “E” for the course. Sanctions imposed may include, and have included, suspension, dismissal, and expulsion from the University.

GETTING HELP

Learning Center. The Chemistry Department provides a General Chemistry Learning Center that is staffed by Chemistry graduate student teaching assistants. The Learning Center is located in CP-25 in the basement of Chem-Phys. The schedule for the learning center will be posted on the door to CP-25 and in Blackboard under “Course Help” on the left-hand menu. If any teaching assistants are particularly unhelpful, please report their names to your instructor.

Help Sessions. An instructor will offer help sessions on Tuesdays from 5:00 - 5:50 PM in CP-139 the week of each examination. Attendance at these help sessions is voluntary but highly recommended.

Blackboard Resources. The “Course Help” button in Blackboard lists your instructor’s office hours, the Learning Center schedule, the tutor list, and other helpful information. Lecture notes will be posted in Blackboard under the “Lecture Notes” button on the menu to the left of the home screen. You will find several old examinations by clicking on “Old Exams” on the left-hand menu as well.

Private Tutors. A list of names of Department of Chemistry staff (usually graduate students) willing to be paid tutors for general chemistry can be obtained from the General Chemistry Office (CP-120) soon after the beginning of the semester. Tutoring slots fill up fast, so you should pick up a list as soon as possible if you want a tutor.

Email Communication. In all e-mails to faculty or staff in General Chemistry, please include the following:

- In the subject field: Course / Section / Subject. For example, a student in CHE 105 section 008 with a question about homework would write the following: CHE 105-008 Mastering Question.
- In the body of the message: Full name and UK student ID number.

E-mails containing inappropriate or offensive language or tone may not be answered.

WHOM TO CONTACT

Your Instructor: All issues regarding homework, including technical difficulties, questions about material, or questions about grades; help regarding course material, exam material, exam grades, and your class quizzes (if applicable).

Class Participation Coordinator (Mr. Duhr). Class participation grades, TurningPoint questions, clicker problems, and lost clickers. Mr. Duhr may be reached in CP-133, at efduhr1@uky.edu, or at (859) 257-3899.

Assistant to the Director of General Chemistry (Ms. Horner). Excused absences, alternate exams, bypass exams, and certified disability forms. If you are in doubt about whom to contact **and if your question is not related to homework or class participation**, then contact Ms. Horner.

Director of General Chemistry (Professor Stephen Testa). Anything you would like to discuss regarding the administration of the course, including issues with your instructor.

COPYRIGHT

All course material is copyrighted (either by the instructor or others). Therefore, transcribing and then selling, publishing, or posting any of the lecture material presented in class is strictly prohibited. This applies especially to “professional” note-taking services and companies that publish such material on the internet, in written form, or in any audio format.

CELL PHONE AND LAPTOP POLICY

Pagers, cell phones, and any other form of electronic communication devices must be turned off during class and are strictly prohibited during exams. Any students found sending or receiving text messages during class may be required to show their student ID to the instructor and may lose half of their earned class participation for the semester for the first offense and may receive a zero for class participation for the semester for a second offense. Laptops are not permitted. Exceptions might be made if your specific situation is discussed with the instructor in their office.

SPECIAL OPPORTUNITY TO CHANGE TO CHE 104

You may wish to switch from CHE 105 to CHE 104 if you are having difficulty mastering the material in CHE 105. The change can be accomplished anytime before September 21st at noon. You must sign up for the course switch in person in the General Chemistry Office (CP-120), and this opportunity will be honored on a first-come, first-serve basis until CHE 104

fills to capacity. Only a change from a section of CHE 105 to a section of CHE 104 will be permitted; no other alteration of your schedule will be allowed. Students who switch to CHE 105 will also be dropped from CHE 111 and CHE 195, if applicable.

Those students who switch to CHE 104 after taking Exam I in CHE 105 may take Exam I in CHE 104 on Wednesday, September 22nd, and the better of the two scores from Exam I of CHE 105 and CHE 104 will be recorded for your Exam I grade in CHE 104. You will receive general advice from your instructor concerning the advisability of taking advantage of this opportunity. You are welcome to discuss your situation with your instructor during his or her usual office hours and/or with the Director of General Chemistry.

Note that CHE 104 is not a substitute for CHE 105 in pursuing the CHE 105 and CHE 107 sequence of courses. Credit for University requirements is not available for CHE 105 once CHE 104 and CHE 108 have both been taken. However, you may take CHE 105 again after taking just CHE 104.

OFFICE HOURS (Example from Fall 2010)

You are encouraged to make use of your instructor's office hours. Office hours for the CHE 105 instructors are as follows:

Instructor	Section	Phone/E-mail	Office Hours	Office
Dr. Woodrum, Senior Lecturer	001	(859) 257-1551	MW 10:00-11:30 am	CP-135
	002	kim.woodrum@uky.edu		
Dr. Harris, Visiting Instructor	003	(859) 257-3294	MWF 9:00-11:00 am TR 1:00-3:00 pm	CP-249C
	006	jeffrey.harris@uky.edu		
Dr. Ades, Instructor	004	(859) 257-1871 phy200@uky.edu	MWF 12:30-2:30 pm TR 9:30-10:45 am	CP-23
Dr. Knecht, Professor	005	(859) 257-3789 marc.knecht@uky.edu	T 2:00-3:00 pm W 9:00-10:00 am R 1:00-2:00 pm	CP-101
Dr. Testa, Professor	008	(859) 257-7081 testa@email.uky.edu	M 11:00 am-12:00 pm	CP-120
	009		W 12:00-1:00 pm F 1:00-2:00 pm	
Dr. Guzman, Professor	401	(859) 257-3139 marcelo.guzman@uky.edu	M 11:00 am-12:00 pm T 1:00-2:00 pm R 4:00-5:00 pm	

COURSE SCHEDULE

DATES	CHAPTER	TOPICS
Aug 25, 27, 30	CH 1	Syllabus Matter, Measurement, and Problem Solving
Sept 1, 3	CH 2	Atoms and Elements
Sept 8, 10, 13, 15	CH 3	Molecules, Compounds, and Chemical Equations
Sept 16	CH 1-3	EXAM I (8:00-9:15 PM)
Sept 17, 20, 22, 24	CH 4	Chemical Quantities and Aqueous Reactions
Sept 27, 29 Oct 1, 4	CH 5	Gases
Oct 6, 8, 11	CH 6	Thermochemistry
Oct 13	CH 7	The Quantum Mechanical Model of the Atom
Oct 14	CH 4-6	EXAM II (8:00-9:15 PM)
Oct 15, 18, 20	CH 7	The Quantum Mechanical Model of the Atom
Oct 22, 25, 27, 29	CH 8	Periodic Properties of the Elements
Nov 1, 3, 5, 8	CH 9	Chemical Bonding I: Lewis Theory
Nov 10	CH 10	Chemical Bonding II: Molecular Shapes, Valence Bond Theory, and Molecular Orbital Theory
Nov 11	CH 7-9	EXAM III (8:00-9:15 PM)
Nov 12, 15, 17, 19	CH 10	Chemical Bonding II: Molecular Shapes, Valence Bond Theory, and Molecular Orbital Theory
Nov 22, 29 Dec 1, 3, 6, 8, 10	CH 11	Liquids, Solids, and Intermolecular Forces
December 7		Makeup Exam I, II, and III
Monday, Dec 13	CH 1 - 11	Final Exam 6:00 – 8:00 PM

ONLINE HOMEWORK DUE DATES		
Introduction Assignment	Saturday, August 28	7:00 PM
Math Review	Wednesday, September 1	7:00 PM
Chapter 1	Saturday, September 4	7:00 PM
Chapter 2	Saturday, September 11	7:00 PM
Chapter 3	Saturday, September 18	7:00 PM
Chapter 4	Saturday, October 2	7:00 PM
Chapter 5	Saturday, October 9	7:00 PM
Chapter 6	Saturday, October 16	7:00 PM
Chapter 7	Saturday, October 23	7:00 PM
Chapter 8	Saturday, November 6	7:00 PM
Chapter 9	Saturday, November 13	7:00 PM
Chapter 10	Saturday November 27	7:00 PM
Chapter 11	Saturday, December 11	7:00 PM

Current Topics for Class Discussion	
<i>The Importance of Units (21)</i>	Sept. 3
<i>Distribution of Elements on Earth and in Living Systems (pg 52)</i>	Sept. 17
<i>Chemical Fertilizers (pg 108)</i>	Sept. 24
<i>Breathalyzer (pg 146)</i>	Oct. 1
<i>Current Topic in Chemistry (TBA)</i>	Oct. 15
<i>Fuel Values of Foods and Other Substances (pg 251)</i>	Oct. 22
<i>Laser – The Splendid Light (pg 288)</i>	Oct. 29
<i>Current Topic in Chemistry (TBA)</i>	Nov. 12
<i>Sodium Chloride – A Common and Important Ionic Compound (pg 373)</i>	Nov. 19
<i>Diversity in Science</i>	Nov. 26
<i>Microwave Ovens – Dipole Moments at Work (pg 424)</i>	Dec. 3

BLACKBOARD AND MASTERING CHEMISTRY HOMEWORK INSTRUCTIONS

To access Blackboard, go to <http://myuk.uky.edu>. Your username and password are the same as your UK e-mail address. It is your responsibility to log in and not to miss announcements and assignments. Computer problems or ignorance of an assignment's due date is no excuse for missing assignments. Your first assignment is due Saturday, August 28th @ 7:00 PM. Log in to Blackboard and the Mastering website as soon as possible following your first lecture so that any technical problems can be solved before your first assignment is due.

Help with Blackboard. If you need technical assistance with Blackboard, contact the UK IT Customer Service Center by calling 257-1300, by visiting McVey Hall, Room 111 (M-F, 7 AM – 6 AM), or by visiting The HUB at the WT Young Library (Sunday, 1 PM – 10 PM and M-F, 6 PM – 10 PM). You may also e-mail your questions to helpdesk@uky.edu. Keep in mind that the helpdesk may be slower in responding to e-mail requests than to phone calls or personal visits to McVey Hall or the HUB.

Once in Blackboard, click on the link for CHE 105. You will use Blackboard to access the following content areas using the buttons on the left side of your screen:

- I. Announcements: Current announcements will be displayed on the opening course screen. Be sure to log into Blackboard daily, so that you can read the announcements from your instructor or the General Chemistry office.
- II. My Grades: Mastering grades, class participation grades, and exam grades will be posted here. Blackboard will calculate a *rough estimate* of your cumulative grade for the semester.
- III. Exam Information: Here you will find seating assignments and keys for exams.
- IV. TurningPoint Registration: Click on the “TurningPoint Reg” button to register your TurningPoint Device ID. This ID number is located on the back of your remote control device. This device, once purchased, can be used for multiple classes and for multiple semesters. Your instructor will give you a handout outlining how your Class Participation grade (5% of your grade) will be determined.

To access Mastering, go to www.masteringchemistry.com. You will need to register your Mastering access code the first time you visit the website. Remember your username and password because you will need to log on to this website to complete each of your Mastering homework assignments for the semester.

Help with Mastering. For issues relating to Mastering, first read the FAQ in Blackboard, then access the help section of the Mastering website, and as a last resort contact your instructor.

- V. Assigned homework will be completed through Mastering. These assignments count as 10% of your grade. Follow the registration instruction given for Mastering, using the access code bought with your textbook or purchased separately at the University Bookstore or online and the Course ID. Follow the instructions carefully. Note that you must enter

your student ID number during registration in order to get credit for the Mastering homework. Please note:

- a. The Course IDs for CHE 105 are as follows:
 - i. 105-008 is **MCTESTA85135**
 - ii. 105-009 is **MCTESTA29450**
- b. The Mastering homework is designed to help you learn the material in addition to study questions. It is important that you work the assignment yourself, taking the time to use the tutorials and hints in order to understand the problem. If you try to find shortcuts, have others give you the answer, etc., your performance on exams will suffer. This portion of your grade is about learning, not just accumulating points.
- c. To work an assignment, click on the Assignments link. You may print the assignment and enter and exit Mastering as often as you need.
- d. You are allowed 4 attempts at each question. Each time you enter an answer, click on the Submit button at the bottom. Doing this will grade the question and give you feedback. If a question asks for a multiple part answer, you must correctly enter all parts of the answer before hitting Submit; otherwise, your attempt will be counted incorrect.
- e. Some problems in Mastering require the answer to have the correct number of significant figures. If you get an answer wrong on the first couple of attempts, go back through your work to make sure it is correct, then check for the correct number of significant figures.
- f. Although you receive four attempts for each question, you will lose partial credit for each incorrect attempt at a multiple choice question.
- g. Your first assignment, Introduction Assignment, will teach you how to enter answers into Mastering properly. It will demonstrate many of the features of Mastering, such as hints and tutorials. This should be the easiest assignment of the semester and is very important for proper understanding of how Mastering works. Do not miss it!
- h. The one assignment with the lowest score will be dropped during final homework grade calculations at the end of the semester. Therefore, one assignment is automatically excused through this drop policy. A percentage score will be calculated for each of the homework assignments. After the one lowest percentage is dropped, the homework score will be the average of the remaining percentages.
- i. To receive an extension on an assignment, you must provide a legitimate, documented excuse that is consistent with University policy. The documentation must be turned in to the Assistant to the Director in the General Chemistry Office

(CP-120) within one week of the homework due date. Extensions will not be granted after you have viewed the key.

- j. You can view your score on each of the Mastering assignments through the Gradebook link on the Mastering website. At midterm and at the end of the semester, your overall grade for the Mastering assignments will be loaded onto Blackboard. Be sure to check your grades from time to time to ensure that you are receiving credit for your assignments. If you find an error, contact Ms. Horner right away.
- k. You can access other helpful information in Mastering in addition to homework assignments. Click on Study Area on the left side of the homepage. This area will contain various study aids to supplement the course.

CHE 111 Syllabus

University of Kentucky
Department of Chemistry
CHE 111 General Chemistry Laboratory I
Summer 2009

- I. **PURPOSE:** This document provides detailed information regarding the CHE 111 laboratory course. This laboratory course will provide students with the opportunity to perform chemical experiments related to the concepts covered in CHE 105.
- II. **OBJECTIVES:**
- Give students a basic introduction in qualitative and quantitative lab skills.
 - Introduce and develop students' scientific writing skills.
 - Introduce and develop students' technical skills in creating equations, graphs, and tables in a document.
 - Reinforce concepts learned in the CHE 105.
 - Develop students' critical thinking skills in analyzing both quantitative and qualitative experimental results.
 - Prepare students for future lab work in both chemistry and other disciplines.
- III. **SCOPE:**
- The concepts covered in this course generally follow those covered in CHE 105.
 - There are some additional topics covered in lab and students should review and understand the relevant content before completing the experiment.
- IV. **MISSION:** Give every student the opportunity to master the objectives of this course while upholding high academic standards.

V. **EXECUTION**

a. Section Information

Section	Day	Time	Room
020	Monday-Wednesday	1:00-3:00	CP-8

- Each lab is equipped with laptop computers, Vernier LabPros, fume hoods, safety equipment, and the supplies necessary to complete each experiment.
- Each experiment is described in the lab manual (required) and supplemental information is available on the Blackboard site for this course. Additional information about the concepts can be found in any general chemistry textbook.
- Academic Coordinator/Lab Supervisor
 - Provides continuity and makes future plans for general chemistry laboratories.
 - Trains and supervises laboratory teaching assistants
 - Develops new and updates existing experiments.
 - Maintains and updates equipment, as needed.
 - Assists students with questions regarding course content, course policies, and TA concerns.
 - Writes quizzes and exams/practicals.
 - Maintains the Blackboard site for the course.
- Teaching Assistants
 - Present in each lab session to provide an overview of the experiment and answer questions about experiments.
 - Monitor all students in the lab and enforce violations of safety rules.
 - Grade lab reports, provide feedback to students on their work, and record grades.
 - Answer student questions in person and via email.
 - Attend regular office hours in the Learning Center, CP-25.
- Students
 - Prepare for each experiment by reading the lab manual, viewing supplementary information Blackboard, reviewing the relevant content in the textbook, and asking questions before the lab to ensure understanding of the experiment.

- ii. Participate in lab by arriving on time and ready to start the experiment, answering questions from the TA, and asking questions when in doubt.
- iii. Work with a lab partner to complete the experiment with the goal of obtaining high quality results.
- iv. Spend the time needed to write a high quality lab report independently of other students and their reports.
- v. Follow all safety rules provided in class, on Blackboard, and in your lab manual.
- vi. Complete only the assigned experiment in a time- and resource-efficient manner.
- g. Resources for Help - The Department of Chemistry offers several resources for help in this course. Students are encouraged to seek help and ask questions as they arise rather than waiting until the day before the exam or a few minutes before a report is due.
 - i. Your **TA** will be available during the lab sessions to answer your questions. They will hold regularly scheduled office hours in the Learning Center (CP-25) and may also be contacted via email. You should expect a response within one business day of your email. If you have concerns or comments about your TA, please contact the Lab Supervisor.
 - ii. The **General Chemistry Learning Center** is located in CP-25 and is available throughout the day. The schedule will be posted on the door and on Blackboard under "Course Information".
 - iii. The **Blackboard** course site for this course contains numerous resources including information about the course as well as about individual experiments. Many common questions are answered in the Frequently Asked Questions (FAQ).
 - iv. The **Lab Supervisor** holds office hours and is generally available throughout the day and can meet with students by appointment or on a walk-in basis. You may also email her at soult@uky.edu
 - v. **The Study**, located on the 3rd floor of the commons, and **The Study Too**, in the Anderson Engineering building, offer free peer tutoring in general chemistry. A current schedule is available at <http://www.uky.edu/UGS/study>
 - vi. **The Writing Center**, located on the 5th floor of Young library for assistance with the writing process. More information is available at <http://www.uky.edu/AS/English/wc/>
 - vii. Your **Lecture Instructor** will hold regularly scheduled office hours. See the syllabus for the lecture for more information about the times.
 - viii. Technical assistance is available from
 - 1. The **IT Customer Service Center**, located in 111 McVey Hall, may be reached by phone 257-1300 or through their web page (<http://www.uky.edu/UKIT/>). They provide assistance with email, AD accounts, passwords, and other account issues.
 - 2. Assistance with **Blackboard** is available at <http://www.uky.edu/Blackboard/>

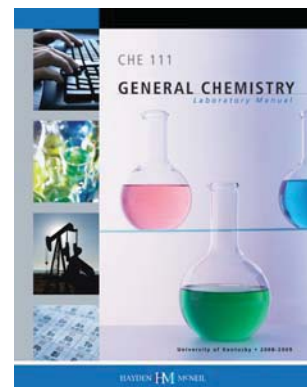
VI. Administration and Logistics

a. Required materials

- i. CHE 111 – General Chemistry Lab Manual, 2008-2009 Edition (note the blue strip on the bottom of the cover)
- ii. Chem21Labs.com Account (\$10 fee, payable online)
- iii. ANY General Chemistry textbook
- iv. A basic scientific calculator for lab practical. Graphing calculators, calculators with large memory banks, and calculators which permit the entering of alphabetic symbols are NOT permitted on the lab practical.

b. Suggested materials

- i. USB Drive (i.e. flash drive, thumb drive, etc)
- ii. "Online Student Skills and Strategies Handbook" by Ganey, Christ, and Hurt for students who need to improve their basic computer skills, learn how to use email and the internet effectively, and develop skills necessary for online



components of a course. Available for order from bookstores such as amazon.com, Joseph-Beth, or Barnes & Noble.

c. Policies

i. Academic offenses

1. You are hereby notified that the Department of Chemistry and the University considers cheating and plagiarism as very serious offenses and that we will do everything possible to prevent them in this course. Sanctions imposed may include punishments up to suspension, dismissal, and expulsion from the University.

This is a warning and a reminder to all students that cheating and plagiarism will not be tolerated. All students are expected to do their own work independently of other students, their lab partners, and other lab reports. Any material that is paraphrased or quoted from another source, including another student, should be properly referenced. If you have old lab reports that you are using for "review", as a "template", or as a "guide", I suggest you discard them immediately. Likewise, if you have been sending your lab reports to another student to "help" them, realize that you may also be subject to punishment if that student copies your work. Lab reports will be kept on file for comparison in future semesters.

Students have received an E in this course because of an academic offense. Plagiarism is wrong and will be punished. The recent cases of plagiarism were blatant copying from other students and **not** for incorrect referencing of a quote or incorrectly paraphrasing a sentence from the lab manual. Issues concerning incorrect paraphrasing or quotations when an attempt, albeit incorrect, has been made to reference the material will continue to be used as opportunities to help students learn the correct way to use reference material.

If you paraphrase someone else's work, you must change both the words and the sentence structure. If you quote (i.e. use someone's exact words), you must use quotation marks around the text. In **either** case, you must reference the source of the material.

2. **Lab reports will be electronically scanned and compared to reports submitted from the current and previous semesters. If you copy from another student, you will be caught.** Students are responsible for seeking out help, if needed, to complete any assigned work in this course.
3. The complete rules of the University Senate, including those regarding academic offenses (section 6.3), may be found at <http://www.uky.edu/USC/New/SenateRulesMain.htm>
4. Some examples of academic offenses are listed below. Additional information and examples are included in the PowerPoint available at <http://www.uky.edu/~assoul2/AcademicOffensesInLabs.ppt>
 - a. Submitting falsified documents for obtaining an excused absence for a missed exam, assignment, or class.
 - b. Failing to clear your calculator memory prior to taking an exam regardless of whether you get caught using the information or not.
 - c. Submitting work from a previous semester or submitting work based on data from a previous semester (either your own work or someone else's).
 - d. Submitting someone else's work as your own, either in whole or in part (Including, but not limited to, text, samples, data, graphs, equations, tables, etc of any kind)

- e. Submitting a report that contains the same text as another student, even if the other student is your lab partner.
 - f. Failure to reference sources, including your lab manual and textbook, used in writing your lab report. Lack of knowledge is not an excuse for plagiarism. You are responsible for seeking help to correctly reference your sources.
 - g. Changing quantitative or qualitative data to improve the outcome of the experiment, whether accuracy and/or precision are part of the grade or not.
 - h. Graphs, tables, and/or equations copied from another student even if it is from your lab partner and the numbers are the same.
 - i. Copying and pasting images, reactions, equations, and/or mechanisms from lecture notes, websites, or other sources when the intent is for you to create these items yourself.
 - j. Bringing unauthorized material to exams.
5. A message about plagiarism from the Academic Ombud is available at <http://www.uky.edu/Ombud/Plagiarism.pdf>
- ii. Discretion is given to the instructor in assigning a penalty. For a first offense in the General and Organic Chemistry labs, the **minimum** penalty is a zero on the assignment and a reduction in the course grade by **at least** one letter grade. For more serious offenses, even if it is a first offense, the instructor can assign an E or recommend a penalty of XE for the course. A second offense will receive a harsher penalty as outlined in Senate Rule 6.4. The penalty for a second or subsequent offense will depend on the penalty of the previous offense(s), regardless of when or where the prior offense occurred. Penalties can be given to both the student committing the offense and any other student who is an accessory to the offense (i.e. giving them the lab report, data, or product) regardless of intent.
 - iii. Attendance
 - 1. Students are expected to arrive on time and stay for the duration of the lab for all class meetings.
 - 2. Students who come to lab without appropriate clothing and safety attire will not be allowed to stay as they are. Students who do not participate in lab due to safety reasons will not be allowed to make-up the missed work.
 - 3. Arriving Late
 - a. Students who arrive late to lab will have to work alone and will not be given extra time to complete the experiment.
 - b. Students who arrive more than thirty minutes after the start of the lab session will not be allowed to participate in lab that day. Unless, the student has a documented excused absence, it will be treated as an unexcused absence.
 - 4. Students who miss a lab without an excused absence will not be allowed to make-up the lab and will receive a zero on the assignment.
 - 5. All matters related to absences should go through the lab supervisor. Do not submit documentation and/or make-up request forms to your TA.
 - 6. If you have an excused absence, you need to complete a make-up lab request form (available in CP-19) and bring it, along with your **original** documentation to the Lab Supervisor within one week of the absence.
 - 7. Original documents, which can be returned, must be submitted to request an excused absence. If you have other absences that you think should be excused, discuss the situation with the Lab Supervisor. Examples of appropriate documentation include
 - a. a note from a doctor,
 - b. letter from coach for student athletes,
 - c. letter from Dean for participation in University sponsored event,
 - d. signed release form from University Health service.

8. A make-up lab session is scheduled for the end of the semester for students with documented excused absences.
 - a. If a student participates in the make-up lab session without having an excused absence, their grade will not be counted.
 - b. Students may not attend another lab session during the week to make-up a missed lab.
9. According to Senate Rule 5.2.4.2 - Students who miss more than one-fifth of the class contact hours for the course (3 lab sessions) will be required to petition for a "W" or take an "I" in the course whether these absences are excused or unexcused. In the case of severe illness or University-sponsored events which will result in multiple absences, please see the Lab Supervisor.
10. Unexcused absences include, but are not limited to, the following:
 - a. car trouble
 - b. oversleeping
 - c. parking problems
 - d. family visiting
 - e. travel not related to official University events.

iv. Lab Practical

1. Students who miss the lab practical and who contact the Lab Supervisor within one week of the absence will be given an Incomplete in the course if they have a passing grade prior to the practical.
2. Students who need accommodation for the practical should contact the Lab Supervisor at least two weeks prior to the practical.

v. Grading

1. Your grade in this course will be determined by your performance on numerous assignments including quizzes, pre-lab exercises, lab assignments, and lab reports. See the schedule for a complete list of assignments and due dates.
2. Each type of assignment is worth a different number of points as given in the table below.
 - a. The lowest lab experiment grade will be dropped.
 - b. The experiment grade will be the assignments due for a particular experiment (i.e. worksheet; Chem21, review and report section; or Chem21 and report).

Assignment	#	Points for each
Quizzes	2	25
Worksheets	3	60
Chem21 Assignments	5	20
Report Sections	3	20
Reviews	3	20
Reports	2	40
Lab Practical	1	120

3. The total number of points possible is 590 points (after the lowest experiment grade is dropped). Course grades will be assigned according to the following:

Course Grade	Total Points
A	≥ 540 points
B	≥ 480 points
C	≥ 420 points
D	≥ 360 points
E	< 360 points

- a. Quiz grades will not be dropped.
- b. Grades will be assigned based on the number of earned points, not percentages.

4. Quizzes are graded automatically and the score is immediately recorded on Blackboard. The score that you see in Blackboard will be the score used to calculate your course grade.
 - a. There are three versions of each quiz to account for any technical errors. Unless you are locked out of all three versions, they will not be unlocked. If you are locked out of all three, send an email to soult@uky.edu and explain what happened so that your quiz can be unlocked.
 - b. The due dates for quizzes are given in the schedule. There are no make-up quizzes.
5. Lab reports are due at the start of your lab session according to the due date given in the course schedule.
 - a. Reports are to be submitted electronically on Blackboard. Paper copies are not accepted.
 - b. Reports are graded by your TA. You will be given a gradesheet (see lab manual for example) with your grade.
 - c. Your grade should be received within one week of the report due date. If it is taking longer than that, please contact the lab supervisor.
 - d. Reports submitted more than 20 minutes after the start of the lab session on the due date are considered late.
 - e. Late reports will be accepted up to 24 hours after the original due date and time and receive a penalty (10 points reports and worksheets). Reports will not be accepted after 24 hours except in the case of an excused absence.
 - f. If you have an excused absence on a day a report is due, your due date will be extended by one week.
 - g. If you do not have an excused absence on a day a report is due, your due date will not be extended.
6. Worksheets
 - a. Worksheets are to be submitted as a paper copy directly to your TA.
 - b. Students needing to drop off paper copies of assignments after their lab session may bring them to CP-19. Do not submit assignments in the Department of Chemistry office or under the door to CP-19.
7. Lab Practical
 - a. The lab practical will include calculations, concept questions, and a "hands-on" portion which will require you to use the lab skills developed in the course to complete.
 - b. The lab practical will be completed according to the date given in the syllabus, not during the finals week.
 - c. More information about the lab practical is posted on Blackboard.
- vi. Important Dates for the Spring 2009 semester
 1. Last day to add a class: June 12
 2. Last day to drop without a "W" on your transcript: June 22
 3. Last day to drop with a "W" on your transcript: July 15
 4. Academic Holidays (no classes): July 3
- vii. Students are responsible for notifying the Lab Supervisor **in writing** of anticipated absences due to their observance of religious holidays. All notifications must be received no later than the last day for adding a class.
- viii. Any student with a certified disability should provide this information to the Lab Supervisor and the General Chemistry secretary (Ms. Sarah Flannery, CP-120). Letters should be submitted by the last day to add a class or within one week of receiving a letter.
- ix. Students enrolled in CHE 111 should also be enrolled in or have credit for CHE 105. Students wishing to withdraw from CHE 105 and remain in CHE 111 must speak with the Lab Supervisor.

- x. At the end of the semester, students will have the opportunity to evaluate both their TA and the Lab Supervisor. All evaluations remain anonymous and results are not seen until after final course grades have been submitted. Your honest responses to the evaluations are appreciated and all responses are reviewed by the appropriate people.
- xi. While labs tend to have a less formal atmosphere than a regular classroom, there are still some basic rules of classroom etiquette that students should follow.
 - 1. Arrive on time.
 - a. This means arriving so that you can start class on time – not walking in as the clock strikes the hour.
 - b. If you are late, do not expect the TA to go out of their way to catch you up.
 - c. If you think you will be habitually late due to a legitimate reason, contact the lab supervisor. Perhaps you should be in a different section.
 - 2. Turn off or silence your cell phone. If you are expecting a phone call so important, you need to interrupt your classmates, contact your instructor.
 - 3. Be quiet when the instructor is speaking.
 - 4. Turn off your iPod, mp3 player, etc.
 - 5. Clean up your workspace and return supplies to the correct location.
 - 6. Complete the work and clean-up on time. There are probably students coming into lab immediately after you.
 - 7. Show respect for other students and TAs in your class. Treat others as you would like to be treated.
 - 8. Lab sessions are for working on the experiment and related chemistry topics. You should not send text messages, play games on the computer, read your email, surf the internet, work on assignments for other courses, or anything else that takes away from the topic being studied.
 - 9. Work with your lab partner to complete the experiment. If you feel that you cannot continue to work with this person, see the Lab Supervisor after class.
 - 10. Other etiquette issues for a regular classroom, such as eating, drinking and clothing, become safety issues in the lab and will be addressed with regards to the safety rules.

VII. Communications

- a. The Blackboard site for this course (accessed through <http://myuk.uky.edu>) contains supplemental material, quizzes, announcements, and other resources to help you do better in the course. If you have a question, please check the syllabus and the Blackboard site for the answer before contacting your TA or the Lab Supervisor.
- b. Instructor: Dr. Allison Soult
 - i. Email – soult@uky.edu
 - ii. Office – CP-19
 - iii. Phone – 257-7067
 - iv. Office Hours – MW, 12:00-1:00
- c. TAs will provide their contact information and office hours to you during the first two or three lab sessions. All TA office hours are held in the General Chemistry Learning Center (CP-25). Students may take their questions about any 100-level chemistry class to any of the TAs in the Learning Center.
- d. Email is often the easiest way to contact your TA or instructor and can be a very effective communication tool. With email, we sometimes forget that there is a person on the receiving end and the old saying still holds true – “You don’t get a second chance to make a first impression.” Please keep the following in mind.
 - i. Students should expect a response within 24 hours (excluding weekends) from either their TA or the Lab Supervisor. If you don't get a response in that time frame from the Lab Supervisor, resend your message. If you are consistently not hearing back from your TA in a timely manner, contact Dr. Soult

- ii. While the Lab Supervisor and the TA's may check their email in the evening, that is not always the case. If you wait until the last minute to ask your questions, you may not get a response before the lab report or quiz is due.
- iii. Always include the following in every email message
 - 1. Your name - Just because your name shows up in your email program, doesn't mean it shows up for others. We don't know who "cutiepie103@hotmail.com" is.
 - 2. Your TA's name
 - 3. Your course and section number (in case there happen to be two John Does in the same class)
 - 4. Your question(s) - Before hitting send, read the email and make sure it asks the question you want answered.
 - 5. **DO NOT** include your social security number or Blackboard password. Email is generally not that secure. The above information is enough to identify you.
- iv. More information on netiquette at <http://www.albion.com/netiquette/corerules.html> and http://email.about.com/cs/netiquettetips/tp/core_netiquette.htm

VIII. Safety

- a. Safety is the number one priority in the laboratory environment. Everyone participating in the lab must follow all safety rules to ensure the safety of themselves, their instructors and others working in the building.
- b. Students who do not follow the safety rules will not be permitted to work in the lab.
- c. Students who show blatant disregard for safety rules may be dismissed or expelled from the lab.
- d. Review the safety information provided both in the lab manual and on the Blackboard course website.
- e. The chemical laboratory is a dangerous place only if
 - i. you are careless.
 - ii. you do not know what you are doing.
 - iii. you do not use proper equipment or proper technique.
- f. Students should use common sense and only do the authorized experiments and operations
 - i. Follow the directions in the manual, textbook, and/or handouts.
 - ii. Do only the assigned experiments at the assigned time.
 - iii. Follow the directions and warnings of the instructor.
 - iv. Respect the safety of others in every laboratory operation you perform.
 - v. Study and plan your work before you come to the laboratory. Ignorance and carelessness are the causes of most accidents.
- g. Dress code
 - i. Goggles
 - 1. A coupon is included in the CHE 111 manual for you to exchange for one pair of Visorgogs in the lab.
 - 2. Other styles of goggles must be approved by the lab supervisor.
 - 3. Safety glasses and normal eyeglasses are not acceptable substitutes for safety goggles.
 - 4. If you forget your goggles, you may do one of the following in order to participate in lab. Students without appropriate goggles will not be allowed to participate in lab. There are no 'loaner' pairs of goggles.
 - a. Check the box in the Learning Center (CP-25) for any extra pairs.
 - b. Check the Lost & Found boxes in the labs for a pair.
 - c. Purchase a new pair from the stockroom (PLUS account only, no cash or credit cards, information at <http://www.uky.edu/PlusAccount/>).
 - d. Go home and get your goggles. Please note that if you arrive back in lab more than ten minutes after the start of the lab session, you will be considered late (see the attendance policy above).
 - ii. Shoes
 - 1. All students must wear close-toed shoes.

2. It is recommended that students wear shoes that completely cover their feet and are made of a non-permeable material, such as leather.

iii. Clothing

1. Students must wear long pants or skirts which completely cover their legs and ankles. No capris, gauchos, shorts, etc. are permitted.
2. Shirts should cover the torso and extend to the top of pants/skirt. Shirts should have sleeves (i.e. no tank tops, no bare midriff shirts, etc).
3. Lab aprons (provided in the lab) or lab coats are recommended.

To be completed before lab

Date	session	In-lab activity	Post-lab assignments
Mon, Jun 15	<input type="checkbox"/> Obtain lab CHE 111 lab manual	<input type="checkbox"/> Expt 1: Introduction to Lab	
Wed, Jun 17	<input type="checkbox"/> Read Chapters 1, 2, and 3 in lab manual	<input type="checkbox"/> Expt 1: Introduction to Lab	<input type="checkbox"/> Worksheet for Expt 1 (provided in class, submit to TA in class) DUE Jun 22
Wed, Jun 17	<input type="checkbox"/> QUIZ 1: SYLLABUS & ACADEMIC OFFENSES DUE at 11:59 pm on BLACKBOARD		
Fri, Jun 19	<input type="checkbox"/> QUIZ 2: SAFETY DUE at 11:59 pm on BLACKBOARD		
Mon, Jun 22	<input type="checkbox"/> Read Expt 2: Mass, Volume, and Units	<input type="checkbox"/> Expt 2: Mass, Volume, and Units	<input type="checkbox"/> Chem21 (complete online) DUE Jun 24
	<input type="checkbox"/> Write your procedure (handwritten or typed); must be completed before you may begin experiment		<input type="checkbox"/> Draft of procedure for Expt 2: Mass, Volume, and Units (bring a paper copy to lab, must be typed) DUE Jun 24
	<input type="checkbox"/> Watch the pre-lab video on Blackboard under "Experiments"		
	<input type="checkbox"/> Set up your lab notebook to record the data you will collect in lab		
	<input type="checkbox"/> Wear appropriate attire to lab (long pants, closed toed shoes, goggles)		
Wed, Jun 24	<input type="checkbox"/> Check the procedure review form posted on Blackboard to make sure your procedure meets the standards outlined in the review	<input type="checkbox"/> Self-review of procedure <input type="checkbox"/> Peer reviews of procedure (2) <input type="checkbox"/> TA review of procedure	<input type="checkbox"/> Final version of procedure for Expt 2: Mass, Volume, and Units (submit on Blackboard) DUE Jun 29
Mon, Jun 29	<input type="checkbox"/> Read Expt 3: Empirical Formula	<input type="checkbox"/> Expt 3: Empirical Formula	<input type="checkbox"/> Chem21 (complete online) DUE Jul 01
	<input type="checkbox"/> Watch the pre-lab video on Blackboard under "Experiments"		
	<input type="checkbox"/> Set up your lab notebook to record the data you will collect in lab		
	<input type="checkbox"/> Wear appropriate attire to lab (long pants, closed toed shoes, goggles)		<input type="checkbox"/> Draft of introduction for Expt 3: Empirical Formula (bring a paper copy to lab, must be typed) DUE Jul 01
Wed, Jul 01	<input type="checkbox"/> Check the introduction review form posted on Blackboard to make sure your introduction meets the standards outlined in the review	<input type="checkbox"/> Self-review of introduction <input type="checkbox"/> Peer reviews of introduction (2) <input type="checkbox"/> TA review of introduction	<input type="checkbox"/> Final version of introduction for Expt 3: Empirical Formula (submit on Blackboard) DUE Jul 06

<p>Mon, Jul 06</p> <ul style="list-style-type: none"> <input type="checkbox"/> Read Expt 4: Synthesis of Aspirin <input type="checkbox"/> Watch the pre-lab video on Blackboard under "Experiments" <input type="checkbox"/> Set up your lab notebook to record the data you will collect in lab <input type="checkbox"/> Wear appropriate attire to lab (long pants, closed toed shoes, goggles) 	<p><input type="checkbox"/> Expt 4: Synthesis of Aspirin</p>	<p><input type="checkbox"/> Chem21 (complete online)</p> <p><input type="checkbox"/> Draft of discussion for Expt 4: Synthesis of Aspirin (bring a paper copy to lab, must be typed)</p>	<p>DUE Jul 08</p> <p>DUE Jul 08</p>
<p>Wed, Jul 08</p> <ul style="list-style-type: none"> <input type="checkbox"/> Check the discussion review form posted on Blackboard to make sure your introduction meets the standards outlined in the review 	<p><input type="checkbox"/> Self-review of discussion</p> <p><input type="checkbox"/> Peer reviews of discussion (2)</p> <p><input type="checkbox"/> TA review of discussion</p>	<p><input type="checkbox"/> Final version of discussion for Expt 4: Synthesis of Aspirin (submit on Blackboard)</p>	<p>DUE Jul 13</p>
<p>Mon, Jul 13</p> <ul style="list-style-type: none"> <input type="checkbox"/> Read Expt 5: Ten Test Tube Mystery <input type="checkbox"/> Write your procedure (handwritten or typed); must be completed before you may begin experiment <input type="checkbox"/> Watch the pre-lab video on Blackboard under "Experiments" <input type="checkbox"/> Set up your lab notebook to record the data you will collect in lab <input type="checkbox"/> Wear appropriate attire to lab (long pants, closed toed shoes, goggles) 	<p><input type="checkbox"/> Expt 5: Ten Test Tube Mystery</p>	<p><input type="checkbox"/> Worksheet for Expt 5: Ten Test Tube Mystery (provided in lab manual, submit to TA in class)</p>	<p>DUE Jul 15</p>
<p>Wed, Jul 15</p> <ul style="list-style-type: none"> <input type="checkbox"/> Read Expt 6: Acid-Base Titration <input type="checkbox"/> Watch the pre-lab video on Blackboard under "Experiments" <input type="checkbox"/> Set up your lab notebook to record the data you will collect in lab <input type="checkbox"/> Wear appropriate attire to lab (long pants, closed toed shoes, goggles) 	<p><input type="checkbox"/> Expt 6: Acid-Base Titration</p>	<p><input type="checkbox"/> Chem21 (complete online)</p> <p><input type="checkbox"/> Report for Expt 6: Acid-Base Titration (bring paper copy of report to lab) - NEEDS TO BE COMPLETE</p>	<p>DUE Jul 20</p> <p>DUE Jul 20</p>
<p>Mon, Jul 20</p> <ul style="list-style-type: none"> <input type="checkbox"/> Read Chapter 2 in the lab manual <input type="checkbox"/> Bring grading sheets from Expt's 2, 3, and 4 (electronic or paper) to lab 	<p><input type="checkbox"/> Lab report grading review</p>	<p><input type="checkbox"/> Final version of report due (submit on Blackboard)</p>	<p>DUE Jul 27</p>

<p>Wed, Jul 22</p> <ul style="list-style-type: none"> <input type="checkbox"/> Read Expt 8: Enthalpy of Reaction <input type="checkbox"/> Watch the pre-lab video on Blackboard under "Experiments" <input type="checkbox"/> Complete the pre-lab exercise in your lab manual <input type="checkbox"/> Set up your lab notebook to record the data you will collect in lab <input type="checkbox"/> Wear appropriate attire to lab (long pants, closed toed shoes, goggles) 	<p><input type="checkbox"/> Expt 8: Enthalpy of Reaction</p>	<p><input type="checkbox"/> Chem21 (complete online)</p> <p><input type="checkbox"/> Report for Expt 8: Enthalpy of Reaction (submit on Blackboard)</p> <p style="text-align: right;">DUE Jul 29</p>
<p>Mon, Jul 27</p> <ul style="list-style-type: none"> <input type="checkbox"/> Read Expt 9: Beer's Law <input type="checkbox"/> Watch the pre-lab video on Blackboard under "Experiments" <input type="checkbox"/> Set up your lab notebook to record the data you will collect in lab <input type="checkbox"/> Wear appropriate attire to lab (long pants, closed toed shoes, goggles) 	<p><input type="checkbox"/> Expt 9: Beer's Law</p>	<p><input type="checkbox"/> Chem21 (complete online)</p> <p style="text-align: right;">DUE Aug 03</p>
<p>Wed, Jul 29</p> <ul style="list-style-type: none"> <input type="checkbox"/> Students with an excused absence for a lab should complete the activities listed for the appropriate experiment. 	<p><input type="checkbox"/> Make-up Lab</p>	<p><input type="checkbox"/> Relevant assignments for experiment</p> <p style="text-align: right;">DUE Aug 03</p>
<p>Mon, Aug 03</p> <ul style="list-style-type: none"> <input type="checkbox"/> Prepare for lab practical <ul style="list-style-type: none"> - Objectives for each experiment - Data analysis questions - FAQ on Blackboard about lab practical <input type="checkbox"/> Look in the Blackboard gradebook to find your assigned time for the lab practical 	<p><input type="checkbox"/> Lab Practical</p>	
<p>Wed, Aug 05</p> <p style="text-align: center;">NO CLASS</p>		

Turning Point

(In-Class Guided Inquiry)

Class Participation and TurningPoint Technology: Dr. Testa – CHE 105

Our system supports real-time interactive quizzes in the classroom. It allows the instructor to ask qualitative and quantitative questions and get immediate responses from every student. This system tracks student progress, including their critical thinking and data analysis skills.

The TurningPoint radio frequency (RF) “clickers”, which look something like the remote control for your TV or VCR, will need to be purchased at the bookstore. It is your responsibility to purchase the clicker and keep it in operating condition (batteries, etc.). If you have one from another class or previous semester, it can also be used. Other brands of clickers (other than TurningPoint) and IR checkers will not work.

You may not use anyone else’s clicker during class. Use of any clicker other than your own will be regarded as cheating and you will be subject to penalties described in the course syllabus. The TurningPoint system will start to be used on **Wednesday, September 1st**, but the grade will not start counting until **Wednesday, September 8th**. You can expect that it will be used every day except on review days.

IMPORTANT REGISTRATION INFORMATION: Once you have your clicker, it must be registered in order to associate your device with your name. Registration is accomplished in Blackboard by clicking on the TurningPoint Registration button and entering the number on the back of your remote where it says Device ID. Your clicker must be registered by midnight on Friday, September 3rd. If you miss this deadline, you will get a zero for your class participation grade for each day it is not registered.

Please note the following:

1. In CP-139, we use channel 41. This needs to be manually set on your device using the instructions that came with your device. If you only use it for your chemistry class then you will never have to reset it. If you use it in another class, you will need to reset it to channel 41 each day you come to class.
2. When you answer a question, you will receive a green light on your remote if our computer received your signal. The only way you will see the green light is for our computer to receive your signal and then send back a confirmation signal: this is how you know that your clicker is operating correctly. **However, a green light does not mean your device is registered correctly in Blackboard – in which case we would not know that it is you answering the question.**
3. It is your responsibility to keep up with your clicker and to keep it operating. Keep batteries on hand.
4. You will be asked to answer a question in class each day based on the assigned textbook problems, so bring in your homework. During the class, you will also be asked questions regarding the topic being discussed. Questions will be in multiple-choice format. Some questions will be conceptual and some will be numerical in nature, so it will be important to bring a calculator to class.
5. The last answer you enter before time runs out will be the answer that is saved in our files.
6. Get to class on time! Typically if you are as little as 2 minutes late you will miss one or two of the questions.
7. Your class participation grade will be determined by giving ½ credit for wrong answers and full credit for correct answers. The lowest three class participation scores will be dropped.
8. Class participation cannot be made up. If excused, your grade will be based on the other classes you attended.
9. If you show up late for class, still answer the remaining questions during the class. If you were present and unable to answer any of the questions in class (for whatever reason) see me after class to fill out a

sheet stating the nature of the trouble. If you forgot your clicker, and you sign the sheet, I will give you a 25% for the day. This will keep you from getting an unexcused absence. Any other situation with regard to the clicker should be reported to me right after class. I have to see you in class to know that you were there.

10. You can view your class participation grade by clicking on the My Grades button in Blackboard. Check it at least weekly and report any problems to me right away. I will not go back more than one week to check or correct any errors in your grade.