

## Syllabus – CH 112: General Chemistry Fall 2012

INSTRUCTOR:	Cameron Gren, Ph.D.
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OFFICE HOURS:	MWF: 10-12                      T: 11-12                      (or by appointment)
COURSE / CREDIT:	CH 112-01 – General Chemistry / 3 credit hours
TIME / LOCATION:	MWF 9:00 – 9:50 pm / FSB 102
PREREQUISITES:	Must have successfully completed CH 111 and CH 111L. Must be currently enrolled in CH 112L unless previously completed with a grade of D or above.
REQUIRED TEXT:	<u>Chemistry &amp; Chemical Reactivity</u> , 8th Edition by Kotz, Treichel, & Townsend
COURSE DESCRIPTION:	This course is a continuation of Chemistry 111 and involves a more in-depth study of the fundamental principles of chemistry. Topics include the states of matter, chemical reactions in solution (including equilibrium, precipitation, acid/base, and oxidation/reduction reactions), energies and rates of reactions.
LEARNING OUTCOMES:	The following specific learning outcomes have been determined for this course, as per the specified organizations:

UNA General Education Assessment Program	
Learning Outcome	Assessment Method
Recognize the logic of scientific methodology for advancing theories within general chemistry	Final Exam Questions
Demonstrate comprehension of the essential ideas and unifying concepts associated with general chemistry	Final Exam Questions
Understand the dynamic nature of general chemistry and its relation to everyday life	Final Exam Questions

Alabama Department of Education standards	
Learning Outcome – Knowledge of...	Assessment Method
290-3-3-.17(1)(c)1. Molecular orbital theory, aromaticity, metallic and ionic structures, and correlation to properties of matter	Final Exam Questions
290-3-3-.17(1)(c)2. Superconductors and principles of metallurgy	Final Exam Questions
290-3-3-.17(1)(c)3. Advanced concepts of chemical kinetics and thermodynamics	Final Exam Questions
290-3-3-.17(1)(c)4. Lewis adducts and coordination compounds	Final Exam Questions
290-3-3-.17(1)(c)6. Solvent system concepts including non-aqueous solvents	Final Exam Questions
290-3-3-.17(1)(c)7. Chemical reactivity and molecular structure including electronic and steric effects	Final Exam Questions
290-3-3-.17(1)(c)9. Energy flow through chemical systems	Final Exam Questions
290-3-3-.17(1)(c)10. Issues related to chemistry including ground water pollution, disposal of plastics, and development of alternative fuels	Final Exam Questions
290-3-3-.17(1)(c)14. Principles of electrochemistry	Final Exam Questions
290-3-3-.17(1)(c)15. Mathematics, including statistics, calculus, and differential equations	Final Exam Questions
290-3-3-.15(1)(a)2.(i) Chemistry, including general chemistry and biochemistry with basic laboratory techniques.	Final Exam Questions
290-3-3-.15(1)(b)1.(i) Fundamental structures of atoms and molecules.	Final Exam Questions
290-3-3-.15(1)(b)1.(ii) Basic principles of ionic, covalent, and metallic bonding.	Final Exam Questions
290-3-3-.15(1)(b)1.(iv) Chemical kinetics and thermodynamics.	Final Exam Questions
290-3-3-.15(1)(b)1.(vi) Transition elements and coordination compounds.	Final Exam Questions

290-3-3-.15(1)(b)1.(vii) Acids and bases, oxidation-reduction chemistry, and solutions.	Final Exam Questions
290-3-3-.15(1)(b)1. (x) Environmental and atmospheric chemistry.	Final Exam Questions
290-3-3-.15(1)(b)1.(xi) Fundamental process of investigating in chemistry.	Final Exam Questions
290-3-3-.15(1)(b)1.(xii) Applications of chemistry in personal and community health and environmental quality.	Final Exam Questions
290-3-3-.15(1)(b)1.(xiii) Radioactivity, nuclear reactors, fission, and fusion.	Final Exam Questions
290-3-3-.15(1)(b)1.(xiv) Models of nuclear and subatomic structures and behaviors.	Final Exam Questions
290-3-3-.15(1)(b)1.(xv) Solutions, colloids, and colligative properties.	Final Exam Questions
290-3-3-.15(1)(c)2.(ii) Chemistry, including broad concepts and basic laboratory techniques of inorganic and organic chemistry, physical chemistry, and biochemistry.	Final Exam Questions
290-3-3-.15(1)(d)2.(ii) Chemistry, including organization of matter and energy, electrochemistry, thermodynamics, and bonding.	Final Exam Questions

American Chemical Society (ACS) Assessments	
Learning Outcome	Assessment Method
Demonstrate a knowledge of bonding theory	Final Exam Questions
Demonstrate the use of stoichiometry	Final Exam Questions

EVALUATION:	Exams	400 pts (4 @ 100 points each)
	Online Homework	100 pts
	Final Exam	100 pts
	<b>TOTAL</b>	<b>600 pts</b>

Exams (100 pts) will be given in class as scheduled. Make-up exams will be scheduled at the discretion of the professor *ONLY IF* the student has a valid reason *AND* contacts the professor before the scheduled exam time. The lowest exam grade may be dropped, but the final exam will count an additional 100 points (i.e. 200 points) so as to keep the total points at 600.

Online Homework (cumulative, 100 pts) requires a subscription to Sapling Learning (<http://www.saplinglearning.com>). An assignment will be due for each chapter. See below for further instructions.

The Final Exam (100 pts) will be given on Fri, Dec 7<sup>th</sup>, 8:00 – 9:45 am. It is a standardized, comprehensive test prepared by the American Chemical Society. Study guides may be found at <http://chemexams.chem.iastate.edu/>.

**Grades will be awarded based on the following point totals:**  
**A – 540-600, B – 480-539, C – 420-479, D – 360-419, F – 0-359**

**A grade of C or better is required in CH 112/112L in order to advance to 300 level chemistry courses.**

TENTATIVE SCHEDULE: (subject to change)	Aug 22	Introduction / Syllabus / Sapling Intro
	Aug 24 – 31	Chapter 11
	Sept 3	<i>NO CLASS – LABOR DAY</i>
	<b>Sept 4</b>	<b>Ch 11 Sapling Homework Due</b>
	Sept 5 – 12	Chapter 12
	<b>Sept 13</b>	<b>Ch 12 Sapling Homework Due</b>
	<b>Sept 14</b>	<b>Exam 1 – Chapters 11 &amp; 12</b>
	Sept 17 – 21	Chapter 13
	<b>Sept 23</b>	<b>Ch 13 Sapling Homework Due</b>
	Sept 24 – Oct 5	Chapter 14
	<b>Oct 7</b>	<b>Ch 14 Sapling Homework Due</b>
	<b>Oct 8</b>	<b>Exam 2 – Chapters 13 &amp; 14</b>
	Oct 10 – 17	Chapter 15
	<i>Oct 19</i>	<i>NO CLASS – FALL BREAK</i>

<b>Oct 21</b>	<b>Ch 15 Sapling Homework Due</b>
Oct 22 – 29	Chapter 16
<b>Oct 30</b>	<b>Ch 16 Sapling Homework Due</b>
<b>Oct 31</b>	<b>Exam 3 – Chapters 15 &amp; 16</b>
Nov 2– 12	Chapter 17
<b>Nov 13</b>	<b>Ch 17 Sapling Homework Due</b>
Nov 14 – 19	Chapter 18
Nov 23 – 25	<i>NO CLASS – THANKSGIVING BREAK</i>
<b>Nov 27</b>	<b>Ch 18 Sapling Homework Due</b>
<b>Nov 28</b>	<b>Exam 4 – Chapters 17 &amp; 18</b>
Nov 30	Chapter 19
Dec 3 – 5	Chapter 20
<b>Dec 6</b>	<b>Chs 19, 20 Sapling Homework Due</b>
<b>Dec 7, 8-9:45 am</b>	<b>Final Exam – Comprehensive</b>

**INSTRUCTIONS  
FOR ACCESSING ONLINE  
HOMEWORK:**

1. Go to <http://saplinglearning.com>
- 2a. If you already have a Sapling Learning account, log in, click "View Available Courses", then skip to step 3.
- 2b. If you have Facebook account, you can use it to quickly create a SaplingLearning account. Click "create account" located under the username box, then click "Login with Facebook". The form will auto-fill with information from your Facebook account (you may need to log into Facebook in the popup window first). Choose a password and timezone, accept the site policy agreement, and click "Create my new account". You can then skip to step 3.
- 2c. Otherwise, click "create account" located under the username box. Supply the requested information and click "Create my new account". Check your email (and spam filter) for a message from Sapling Learning and click on the link provided in that email.
3. Find your course in the list (listed by school, course, and instructor) and click the link.
4. Enter the key code provided by your instructor (the CRN of your section)
5. Select a payment option and follow the remaining instructions.

During sign up - and throughout the term - if you have any technical problems or grading issues, send an email to [support@saplinglearning.com](mailto:support@saplinglearning.com) explaining the issue. The Sapling support team is almost always more able (and faster) to resolve issues than your instructor.

**CLASS ATTENDANCE:**

The University policy on class attendance can be found in "General Regulations," p 60 of the 2010-2011 UNA Catalog.

There are no excused or unexcused absences in my class. You are allowed to miss A MAXIMUM of 12 classes. Any student missing more than 12 lectures for any reason will be required to drop the course if the deadline has not past, or will receive a failing grade. A sign-up sheet may be passed at the beginning of each lecture. It is your responsibility to verify your presence at each class.

**WITHDRAWAL FROM  
THE COURSE:**

The University policy on course withdrawal can be found in "General Regulations," p 61 of the 2011-2012 UNA Catalog.

It is the policy of the Department of Chemistry and Industrial Hygiene that if a student wishes to withdrawal from a course that has a corresponding lecture/lab component, he or she must withdrawal from both components of the class.

The following are the dates for the different drop periods:

**Withdrawal (W) period:** Aug 22<sup>nd</sup> – Oct 22<sup>nd</sup>

**Withdrawal (WP/WF) period:** Oct 23<sup>rd</sup> – Nov 26<sup>th</sup>

**EQUAL OPPORTUNITY  
STATEMENT:**

It is the policy of the University of North Alabama to afford equal opportunity in education to qualified students. Therefore, a student who has a disability that inhibits the student's ability to meet course requirements and who desires accommodations must contact the instructor and Developmental Services within the first three class meetings of the semester (within the first three days during summer terms). The goal is to develop a timely accommodations plan and to file an Americans with Disabilities Act (ADA) Accommodation Form. Course requirements will not be waived, but accommodations will be made to allow each student to meet course requirements, provided the student acts within the first three class meetings in working with the instructor to develop an accommodation plan. If a disability is identified later in the semester, a non-retroactive accommodation plan will be developed at that time.

## POLICY ON STUDENT MISCONDUCT:

Students of the university academic community are expected to adhere to commonly accepted standards of academic honesty. Allegations of academic dishonesty can reflect poorly on the scholarly reputation of the University including students, faculty and graduates. Individuals who elect to commit acts of academic dishonesty such as cheating, plagiarism, or misrepresentation will be subject to appropriate disciplinary action in accordance with university policy.

*Incidents of possible student academic dishonesty will be addressed in accordance with the following guidelines:*

1. The instructor is responsible for investigating and documenting any incident of alleged academic dishonesty that occurs under the instructor's purview.
2. If the instructor finds the allegation of academic dishonesty to have merit, then the instructor, after a documented conference with the student, will develop a plan for disciplinary action. If the student agrees to this plan, then both instructor and student will sign the agreement. The faculty member will forward a copy of the signed agreement to the Office of Student Conduct for record-keeping purposes.
3. If the student disagrees with the instructor's proposed plan for disciplinary action and wishes to take further action, he/she is responsible for scheduling a meeting with the chair of the department where the course is housed to appeal the proposed disciplinary plan. The department chair shall mediate the matter and seek a satisfactory judgment acceptable to the faculty member based on meetings with all parties. If a resolution is reached, the disposition of the case will be forwarded to the Office of Student Conduct. If a resolution at the departmental level is not reached and the student wishes to take further action, he/she is responsible for scheduling a meeting with the dean of the college where the course is housed to appeal the proposed disciplinary plan. The college dean shall mediate the matter and seek a satisfactory judgment acceptable to the faculty member based on meetings with all parties. If a resolution is reached, the disposition of the case will be forwarded to the Office of Student Conduct. If a resolution at the college level is not reached and the student wishes to take further action, he/she is responsible for scheduling a meeting with the Vice President for Academic Affairs and Provost (VPAA/P) to appeal the proposed disciplinary plan. The VPAA/P shall mediate the matter and seek a satisfactory judgment acceptable to the faculty member based on meetings with all parties. After reviewing all documentation, the VPAA/P may, at his/her discretion, choose either to affirm the proposed action, to refer the case to the Office of Student Conduct for further review, or to dismiss the matter depending on the merits of the case. The final disposition of the case will be disseminated to appropriate parties, including the Office of Student Conduct.
4. If a student is allowed academic progression but demonstrates a repeated pattern of academic dishonesty, the VPAA/P may, after consultation with the Office of Student Conduct, assign additional penalties to the student, including removal from the University.

## KEYS TO SUCCESS:

**I.** Read the text! I cannot possibly *say* everything you need to know in the limited time we have in class. It is very important for you to follow our progress as laid out in the textbook. This will also give you another perspective on the material, which can be helpful.

**II.** Keep up with the homework. The homework is a *benefit* to you, as much as you think it is a burden. If you work a few problems each day, it will solidify the material you learned that day, and you will not be overwhelmed when it is due.

**III.** If you are falling behind, come see me during office hours. I can help you work through your problems and perhaps pinpoint items on which you should spend extra attention.

**IV.** If you are consistently struggling, find a tutor. The [Center for Academic Advising and Retention Services](#) (CAARS) will help you find free tutoring.