

CONSUMER CHEMISTRY SYLLABUS

FALL 2011

CHEM 101-01
3 credit hours

Days/Time: MWF 10:00 – 10:50 am
Class location: FSB-157

Professor:	T. Brian Cavitt, Ph.D.	Office phone:	(325)674-2159
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Mission of Abilene Christian University

The mission of Abilene Christian University is to educate students for Christian service and leadership throughout the world.

Mission of the Department of Chemistry and Biochemistry at ACU

The mission of the Department of Chemistry and Biochemistry at Abilene Christian University is to prepare students for careers in chemistry, biochemistry, chemical education, and health professions by displaying high professional standards and by modeling Christian values, leadership, and service.

Course Description and Format

The description of this course as given in the Course Catalog is as follows:

“A study of chemistry’s influence on consumers, the environment, and society with emphasis on grasping the beauty and order of the Creator’s handiwork and on equipping citizens for more informed decisions.”

The goals of this course are given below:

1. The learner will understand and be able to competently discuss the impact of chemistry on the economy, technology, and society especially in terms of the consumer at large.
2. The learner will be able to rationalize the environmental effects of chemistry in terms of the following issues:
 - a. The “Greenhouse Effect”
 - b. Global warming
 - c. The use of fossil fuels
 - d. The use of renewable resources
3. The learner will be able to conceptually and mathematically analyze energy consumption.
4. The learner will be able to describe the largest production chemicals in the world chemically, economically, and environmentally.
5. If time permits, the learner will be able to identify many biological chemicals and drugs pertaining to life and their function therein.

Required Materials

- Middlecamp, C. H., Keller, S. W., Anderson, K. L., Bentley, A. K., Cann, M. C., Ellis, J. P. *Chemistry in Context: Applying Chemistry to Society*. 7th ed. New York: McGraw Hill Higher Education, **2012**.
- A scientific calculator

Resources

Much of this course will be on Blackboard including, but not limited to, class notes in MS PowerPoint and/or Word formats, study guides, grades, and anything else the instructor deems worthwhile. The notes will be posted on Blackboard, when available, prior to the lecture(s) covering those notes. The notes will appear in abbreviated form; students should not depend on the notes posted on Blackboard in lieu of attending class and taking complete notes. The study guides will highlight the *main* topics that should be very well understood for the subsequent exam; they will not be comprehensive in any way, shape, or form.

Grade

The following is the *strict* (i.e. unwavering) grading scale by which all grades will be determined:

$$A \geq 540 \text{ pts} > B \geq 480 \text{ pts} > C \geq 420 \text{ pts} > D \geq 360 \text{ pts} > F$$

In general, quizzes and exams may not be taken early or made up; the student will receive a grade of "0" for a missed exam or quiz. If the instructor is notified prior to the exam of an excused absence on the exam date, the student will be allowed to make up the exam outside of class at the time agreed by the student and instructor.

Your grade in this class will be determined from the average of your performance on the exams. Four exams given during the semester (green Scantron format) will each be worth 16.7% of your total grade. A comprehensive final exam (green Scantron format) will be worth 33.3% of your total grade. These details are given below, including projected exam schedule, material, and point values. These exams will be closed note and closed book. Depending on the pace of the class, there may be a fifth exam covering some material (most likely on biological chemicals and drugs). The final exam will be predominantly composed of previous exam questions with an emphasis on new material covered between the last exam and the final.

In order to alleviate exam anxiety, weekly quizzes will be given during the first ten (10) minutes of class on the first meeting of class every week [a total of fourteen (14) quizzes]. The quizzes will generally consist of five (5) multiple choice questions and will be valued at five (5) points per quiz. The quizzes will be open note and open book covering the previous week's material. At the end of the semester, the points earned from performing well on the quizzes will be added to your point total, thereby providing up to seventy (70) "extra" points toward your grade. Because of the "extra" points provided by the quizzes, there will be *no extra credit or bonus work* that can be done to augment your grade.

Exam	Points Available	Tentative Date
Exam 1: Air Ch. 0 – Chemistry for a Sustainable Future Ch. 1 – The Air We Breathe Ch. 2 – Protecting the Ozone Layer	100	Fri, Sept 23
Exam 2: Earth Ch. 3 – The Chemistry of Global Climate Change Ch. 4 – Energy from Combustion	100	Wed, Oct 19
Exam 3: Water Ch. 5 – Water for Life Ch. 6 – Neutralizing the Threat of Acid Rain	100	Fri, Nov 11
Exam 4: Fire or Ether? Ch. 7 – The Fires of Nuclear Fission Ch. 8 – Energy from Electron Transfer Ch. 9 – The World of Polymers and Plastics Ch. 10 – Manipulating Molecules and Designing Drugs Ch. 11 – Nutrition: Food for Thought Ch. 12 – Genetic Engineering and the Molecules of Life	100	Wed, Dec 7
Comprehensive Final Exam	200	Tues, Dec 10:00 – 11:45 am

Total: 600

Attendance Policy

Students who have more than four (4) unexcused absences will have their course grade lowered by one (1) letter grade. Students who have more than nine (9) absences, excused and unexcused combined, may be dropped from the class and given a failing grade (i.e. withdraw failing, WF). See your instructor if you have any special circumstances you need to discuss. Students who participate in official University activities (e.g. athletics, debate, band, etc.) must provide the required University form one (1) week in advance in accordance with University protocol else the absence will be unexcused.

An excused absence may be granted for a “true emergency;” *prior* notice must be given to your instructor. A true emergency is a situation in which attendance is critical to long-term success in life and includes, but is not limited to (within the instructor’s discretion), extreme illness, University sponsored trips, or absolutely necessary personal absences (e.g. the birth of your child, the death of a close relative, and so forth). All other absences, including those without prior notification, will be considered unexcused. For example, your attendance at a wedding of a friend in St. Croix would be considered an unexcused absence.

Academic Integrity

Violations of academic integrity and other forms of cheating, as defined in ACU’s Academic Integrity Policy, involve the intention to deceive or mislead or misrepresent, and therefore are a form of lying and represent actions contrary to the behavioral norms

that flow from the nature of God. Violations will be addressed as described in the Policy. While the university enforces the Policy, the most powerful motive for integrity and truthfulness comes from one's desire to imitate God's nature in our lives. Every member of the faculty, staff and student body is responsible for protecting the integrity of learning, scholarship and research. The full Policy is available for review at the Provost's office web site (<http://www.acu.edu/campusoffices/provost>) and the following offices: provost, college deans, dean of campus life, director of student judicial affairs, director of residential life education and academic departments.

Study Hints

To excel in most math and science classes, this is what you *should* do:

1. *Study by yourself* for an hour or two every day after class to review that class period's material even if it is easy.
2. When initially studying the material, *work through EVERY assigned/suggested problem* (at the very minimum) in the chapter and at the end of the chapter relating to the material that you're studying.
3. *Review the material* from the class periods following the last test. Just do a few of the related problems. (This shouldn't take long since you've already studied the material well.)
4. When you study, first study by yourself to grasp the concepts; then *study in a group* so you can help each other out! (HINT: The study group works well for the review portion of your studying.)
5. By the end of all this, you should know the material pretty well! GOOD JOB!!!
6. In preparation for the tests, *refresh your knowledge* of the material. This shouldn't take long to do since you've been studying it throughout the time of presentation until the test.