

CASPER COLLEGE COURSE SYLLABUS
CHEM 1005 Basic Chemistry

Semester/Year: Fall 2015

Lecture Hours: 3

Lab Hours: 0

Credit Hours: 3

Class Time:

Days: -----

Room: -----

N1: on-line

Instructor's Name: Mitchel D. Millan, Ph.D.

**Instructor's Contact
Information:**

Office: PS333, 307-2683017

Email:
mmillan@caspercollege.edu

Office Hours: MWF 10-11 AM, W 1-3 PM

Course Description: Designed primarily for students who have not had high school chemistry or feel that they need a review, this course consists of a study of matter, atomic structure and bonding, the periodic table, chemical symbols, nomenclature and chemical equations, quantitative composition of compounds, calculations from chemical equations. Provides acceptable credit for students enrolled in agriculture, forestry, home economics, nursing, and petroleum technology. Not recommended for engineering, pre-medicine, pre-dentistry, pre-pharmacy, pre-veterinary medicine or any of the physical science majors. Students needing laboratory credit should enroll concurrently in CHEM 1006. (Taken with CHEM 1006, equivalent to UW CHEM 1000.)

Statement of Prerequisites: none

Goal: This class will introduce students to the principles of chemistry. Skills involved will include (but will not be limited to) critical thinking, and ability to analyze qualitative, numerical and chemical problems.

Outcomes:

1. Learn to use the Scientific Method in this course and in the corresponding lab course.
2. Solve problems using critical thinking.
3. Use quantitative analytical skills to evaluate and process numerical data.

Course Objectives: <http://www.depts.ttu.edu/chemistry/Undergraduate/LearningOutcome.php>

Upon successful completion of this course, students will be able to:

- 1) understand the physical and chemical properties of matter.
- 2) perform basic algebraic operations relating to dimensional analysis with full attention to units and significant figures.
- 3) apply dimensional analysis to chemistry calculations
- 4) understand the basic and currently accepted models of the atom
- 5) understand the concepts of bonding
- 6) use the concepts of bonding in drawing simple Lewis structures and determining molecular geometry
- 7) use the concepts of electronegativity and symmetry to determine polarity
- 8) balance chemical equations
- 9) use the mole concept in stoichiometric calculations.

Methodology: Students are **required** to use the ALEKS Introductory College Chemistry tutorial and assessment system. ALEKS is a third party Learning Management System and access must be purchased separately. They will also use Casper College's Moodle system for discussion Forums and as a document repository. See the SUPPLEMENTARY SYLLABUS for more detail.

Evaluation Criteria ([1000 point total](#) for the course):

- **Moodle Forums (150 pts maximum)**. Discussion assignments will be posted as 10 Forum topics in Moodle. These will be based somewhat loosely on the chapters in the text, so it is necessary for you to read each chapter as scheduled and post/reply by the Wednesday due date specified. These forums will be labeled as Ch2 Forum, Ch3 Forum, etc. Your grade out of 10 pts will be based on the Forum Rubric posted in Moodle.

The day after a Moodle Forum is due, your instructor will release a video response to the Forum material, called the Forum FYI. You will then have up to 2 days to post a response to this FYI. Since all Forums are due on Wednesdays, you have until end of day Friday to complete your response, which can earn up to a maximum of 5 points. There will only be 9 Forum FYI's, which will allow you a maximum of 45 points. An extra 5 points will be given across the board at the end of the semester to round this off to 50 pts.

The Forum scores added together contribute a maximum of 150 points towards the 1000 point total. Late Forums and FYI responses will not be graded.

- **ALEKS Objectives (500 pts maximum)**. In what ALEKS calls "Learning Mode," you will be working on **seven** ALEKS Objectives, containing a fixed number of topics (see last section of this syllabus) keyed to chapters in your textbook, and subject to completion dates listed in the Schedule below.

An ALEKS Objective will contain a list of topics found in a number of textbook chapter(s). When you choose a particular topic to learn, ALEKS will present you with a series of practice problems on that topic. The problems will have enough variability that you will only be able to get them consistently correct by understanding the core principle defining the topic. Once you can consistently get the problems for a given topic correct, ALEKS considers that you have learned the topic ("added to your pie slice"), and you may then choose another topic to learn.

Your percentage of the topics finished by the completion date for each Objective is recorded, ranging from 100% (all topics completed) to 0% (no topics completed). The ALEKS and Moodle systems do not communicate automatically, so your instructor will manually input your ALEKS Objectives score into your Moodle gradebook.

The SUM of the five highest scoring Objectives (two lowest scoring Objectives dropped) will be calculated, and a maximum of 500 points will be contributed to your 1000 point total. For example:

Math and Algebra 86% (score dropped)

Ch 2 95%

Chs 3 & 4 100%

Chs 5 67% (score dropped)

Chs 6 & 7 90%

Chs 8 & 9 100%

Ch 10 88%

Contribution to 1000 points = 95 + 100 + 90 + 100 + 88 = 473 pts

- **ALEKS Progress Assessments (50 points maximum)**. After each Objective, you will take a Progress Assessment to gauge your retention (“mastery”) of the topics covered. If ALEKS determines that your retention is shaky in some areas, you will be required to relearn the material before you move on to new topics that build on these previous ones.

You can find your scores for these Progress Assessments in the REPORT of your ALEKS account, and scrolling down to the History section. A bar graph (one per Progress Assessment) will show your assessment score in blue, progress in learning mode in green, and topics left to be learned in yellow. Your score in Progress Assessments will be taken as the sum of blue and green.

At the end of the semester, the SINGLE highest scoring (blue plus green) Progress Assessment will be determined, giving a maximum of 50 points will be contributed to your 1000 point total. For example:

07/23/2011

Progress Assessment

77 +12 %

Shown above is a sample highest scoring Progress Assessment from July 23rd with score of 77% and a Progress in Learning Mode of 12% (the remaining 11% being material still unlearned by the student). The score for this highest Progress Assessment equals 77 + 12 = 89%. Since the Progress Assessment provides only a maximum of 50 points, half of the score for the highest Progress Assessment will be used. In the above example, you get 89% ÷ 2 = 44.5 pts out of a maximum of 50.

- **ALEKS MidTerm Test (100 pts maximum)**. This MidTerm Test in ALEKS will involve 30 questions. Since it is a midterm test, it will cover only material from Objectives 2 and 3, that is, from Chapters 1 to 4 in your text. The Math review of Objective 1 from ALEKS is NOT included in the Midterm. **Your percentage performance equals the contribution (for example, 27 out of 30 questions, 90% equals 90 pts) to the 1000 point course total.**

- **Comprehensive Assessment (100 pts maximum)**. This comprehensive **Final Test** will contain about 30 questions, and will include all the Topics covered during the semester. It will be available on ALEKS for 72 hours from Dec 9 to 11. **Your percentage performance equals the contribution (for example, 87% equals 87 pts) to the 1000 point course total.**
- **Time Well-Spent (100 pts maximum)**. **READ THIS SECTION CAREFULLY!**

As you may have noticed, quizzing and testing contribute only 25% (50 pts for Progress Assessment and 100 pts each for the Midterm Test and the Comprehensive Assessment) to your total grade. **This is because this course emphasizes mastery of the material through consistent and persistent work on ALEKS, making sure your time is well-spent. This means you are REQUIRED to spend AT LEAST 4 HOURS A WEEK on ALEKS. Spread out your work evenly, rather than cramming all the work on the due date of the current Objective. Cramming almost certainly guarantees you won't get 100% of the topics in the ALEKS Objectives. Cramming will also NOT gain you the full points possible for Time Well Spent.**

For Time Well-Spent, you can earn a maximum of 10 pts during a particular ALEKS work week (Monday to Sunday). You get **1 point for each DAY** you spend at least one hour on ALEKS (maximum of two days). You will also earn **2 points per HOUR of work** (maximum of four hours). **This does NOT mean you should spend ONLY two days and four hrs in the week (you will probably need to put in a lot more time than this)- it means you only get credit for two days and four hrs.**

Here is a sample ALEKS work week:

Monday 1.5 hrs Tuesday 2.5 hrs Wednesday 1 hr Thursday 3.5 hrs Friday 0.5 hr

For this week, you automatically get 2 pts (2 days x 1 pt). Although you worked for 5 days, you get credit for a maximum of 2 days working at least 1 hour. In this example, you get the 2 pts credit for any two days except Friday, where you worked only half an hour.

For the same week above, you worked for $1.5 + 2.5 + 1 + 3.5 + 0.5 = 9$ hrs. However, you only get credit for a maximum of 4 hrs in the week, so you get your full 8 pts (4 hrs x 2 pts) here.

You earn your maximum of $2 + 8 = 10$ points for this sample week.

Do not try to cheat the system by just logging onto ALEKS and doing nothing. Here are two reasons why you shouldn't.

1- ALEKS will log you off after a certain amount of time of inactivity. So, you can't just log on, watch TV or a movie and just do nothing.

2- Remember that Time Well-Spent points are separate from the 500 pts you can get for completing the 7 ALEKS Objectives. No work means no topics learned, and no Objectives completed.

There are 16 weeks in this Fall semester, but you will be graded for the top 10 weeks, dropping the remaining lower scoring weeks. You get a maximum of 10 weeks x 10 pts = 100 pts for Time Well-

Spent. Remember that this is separate from the 500 pts you can get for completing the 7 ALEKS Objectives.

Casper College may collect samples of student work demonstrating achievement of the above outcomes. Any personally identifying information will be removed from student work.

<u>GRADE DISTRIBUTION</u>	<u>Max. Scores:</u>	<u>GRADING SCALE</u>
Moodle Forums	150 pts	A: 900-1000 pts
ALEKS Objectives	500 pts	B: 800-899 pts
ALEKS Progress Assessments	50 pts	C: 700-799 pts
ALEKS MidTerm Test	100 pts	D: 600-699 pts
ALEKS Comprehensive Assessment	100 pts	
Time Well-Spent	100 pts	

Required Text, Readings, and Materials:
Introductory Chemistry 4th Ed. by Nivaldo Tro

Class Policies: Last Date to Change to Audit Status or to Withdraw with a W Grade:

- By registering for, and staying in, this class, you agree to (i) abide by the policies, and (ii) fulfill all the requirements, described in this syllabus. Your instructor reserves the right to make revisions and modifications to this syllabus as needed, subject to sufficient notice to the class of such changes. You are responsible for all announcements (posted in Moodle). It is your responsibility to put in the necessary time in both ALEKS and Moodle.
- The term 'Basic' in Basic Chemistry is used to describe this course. It is assumed that as college students, you have the 'basic' science, math and English skills from high school. You may not have taken chemistry at all, but you should be able to do (or are currently taking) simple algebra and word-problem calculations. Your instructor will assume that you can READ. This is a science class that will exercise your science, math, and English abilities through a variety of on-line tutorials and assessments in ALEKS, as well as discussion topics in the Moodle forums. Ignoring your deficiencies in basic science, math, and English will not make Basic Chemistry any easier.
- Although this is an on-line class, your instructor reserves the right to initiate an Retention Alert after a continuous week of inactivity and an Faculty Initiated Withdrawal after two continuous weeks of inactivity (based on activity logs in ALEKS and Moodle).
- ***The last day for withdrawal (a grade of W) without instructor permission is Nov 12.***

Student Rights and Responsibilities: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director (Dr. Eric Mechalke), the Dean of the School of Science (Dr. Grant Wilson), and lastly the Interim Vice President for Academic Affairs (Dr. Shawn Powell).

Academic Dishonesty - Cheating & Plagiarism: Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the

Casper College Student Code of Conduct for more information on this topic.

Official Means of Communication: Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly.

ADA Accommodations Policy: If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu . The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

Schedule of Activities (Chapters are from Tro):

Chapter	FORUMS due in Moodle	FYI response in Moodle	ALEKS Objectives Completion Date
Introduction	Sep 16	-----	-----
Math and Algebra	-----	-----	(21 topics) Sep 12
Ch 2 (Measurement and Problem Solving)	Sep 23	Sept 25	(21 topics) Sep 26
Ch 3 (Matter and Energy)	Sep 30	Oct 2	(Chs 3 & 4, 23 topics) Oct 10
Ch 4 (Atoms and Elements)	Oct 7	Oct 9	
ALEKS Midterm	-----	-----	Oct 15-17
Ch 5 (Molecules and Compounds)	Oct 28	Oct 30	(21 topics) Oct 31
Ch 6 (Chemical Composition)	Nov 4	Nov 6	(Chs 6 & 7, 22 topics) Nov 14
Ch 7 (Chemical Reactions)	Nov 11	Nov 13	
Ch 8 (Quantities...)	Nov 18	Nov 20	(Chs 8 & 9, 22 topics) Dec 2*
Ch 9 (Electrons and Atoms...)	Dec 2	Dec 4	
Ch 10 (Chemical Bonding)	Dec 9	Dec 11	(18 topics) Dec 12
Comprehensive ALEKS Assessment	-----	-----	Dec 14-16

Chapter 1 contains introductory material, and will not have a Forum associated with it.

*Due to the Thanksgiving Break, the due date for the ALEKS Objectives for Chapter 9 is on a Wednesday, Dec 2.