CASPER COLLEGE COURSE SYLLABUS
CHEM 1005 Basic Chemistry

Semester/Year: Spring 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 11AM-12PM; T 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: 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 General 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 points for the course):

- **Moodle Forums (100 pts maximum).** A discussion assignment will be posted as 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 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 Forum scores added together contribute a maximum of 100 points towards the 1000 point total. Late Forums posts will not be graded. No partial credit will be given.

- **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). You can find your percentages in the GRADEBOOK of your ALEKS account. The ALEKS and Moodle systems do not communicate automatically, so you will not find your ALEKS scores in your Moodle gradebook, nor your Moodle Forum scores in the ALEKS gradebook. You will have to check both gradebooks (Moodle and ALEKS) to get a complete picture of your performance.**

The percentages for the **FIVE** highest scoring Objectives (two lowest scoring Objectives dropped) will be added, 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 points**

- **ALEKS Progress Assessments (100 points maximum).** After each Objective, you will take a Progress Assessment to gauge your retention (“mastery”) of the topics covered. These are “quizzes” you take after the objectives. 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 100 points will be contributed to your 1000 point total. Since the only HIGHEST scoring Progress Assessment will be considered, it is crucial that you prepare and do well in all your Progress Assessments. Do not take any of these for granted.

For example:

07/23/2011 Progress Assessment 77 +12 %

For example, shown above is the highest scoring Progress Assessment from July 23rd showing an Assessment 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%. Therefore, the contribution to the 1000 points is 89 points.

- **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 ALEKS Assessment (100 pts maximum).** This comprehensive Final Test will contain about 30 questions, and will include all the Topics covered during the semester, including those already seen in the Midterm. It will be available on ALEKS for 72 hours from May 11 to 13. 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!**

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. This is requirement is perfectly reasonable- the on-campus face-to-face class meets three hours a week, and certainly you should spend at least one hour studying for the course per week. 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.

For Time Well-Spent, you can earn a maximum of 10 pts during a particular calendar week (Sunday to Saturday). You get **1 point for each DAY** you spend **at least one hour on ALEKS** for a maximum of two days. Days that you spend less than an hour do not count. You will also earn **2 points per HOUR of work** for a 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)** - this means you only get credit for a maximum of 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 get the 2 pts (2 days x 1 pt). Although you worked for 5 days, you get credit for only 2 days. In this example, you get the 2 pts credit for any two days except Friday, where you worked only half an hour.

For this week, 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.

Your total points for this work week equal $2 + 8 = 10$ points, the maximum you can earn for any given week.

A second sample ALEKS work week:

Monday -------- Tuesday -------- Wednesday -------- Thursday -------- Friday 7 hrs

You completely spaced out about ALEKS during the week, and didn’t do any work until Friday. You only get 1 point for Friday, when you worked for more than an hour in ALEKS. Your total hours for this week were 7 hours, so you get 8 points (4 hrs x 2 pts). Your total points for this work week equal $1 + 8 = 9$ points out of the 10 points possible.

Do not try to cheat the system by just logging onto ALEKS for 4 hours 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 NCIS or Arrow and just do nothing on ALEKS.

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. The Objectives has a greater grade weight than Time Well-Spent.

There are about 15 weeks in this Spring 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.
GRADE DISTRIBUTION

<table>
<thead>
<tr>
<th>Course</th>
<th>Max. Scores</th>
<th>Grading Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moodle Forums</td>
<td>100 pts</td>
<td>A: 900-1000 pts</td>
</tr>
<tr>
<td>ALEKS Objectives</td>
<td>500 pts</td>
<td>B: 800-899 pts</td>
</tr>
<tr>
<td>ALEKS Progress Assessments</td>
<td>100 pts</td>
<td>C: 700-799 pts</td>
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<tr>
<td>ALEKS MidTerm Test</td>
<td>100 pts</td>
<td>D: 600-699 pts</td>
</tr>
<tr>
<td>Comprehensive Assessment</td>
<td>100 pts</td>
<td></td>
</tr>
<tr>
<td>Time Well-Spent</td>
<td>100 pts</td>
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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) fulfil 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 Apr 16.

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 Vice President for Academic Affairs (Dr. Tim Wright).

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):

<table>
<thead>
<tr>
<th>Chapter</th>
<th>FORUMS due in Moodle</th>
<th>ALEKS Objectives Completion Date</th>
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<tbody>
<tr>
<td>Introduction</td>
<td>Jan 28</td>
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<tr>
<td>Math and Algebra</td>
<td></td>
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<tr>
<td>Ch 2 (Measurement and Problem Solving)</td>
<td>Feb 11</td>
<td>(18 topics) Jan 31</td>
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<tr>
<td>Ch 3 (Matter and Energy)</td>
<td>Feb 18</td>
<td>(Chs 3 &amp; 4, 19 topics)</td>
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<tr>
<td>Ch 4 (Atoms and Elements)</td>
<td>Feb 25</td>
<td>Feb 28</td>
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<tr>
<td>ALEKS MidTerm Test</td>
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<tr>
<td>Ch 5 (Molecules and Compounds)</td>
<td>Mar 18</td>
<td>(19 topics) Mar 21</td>
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<tr>
<td>Ch 6 (Chemical Composition)</td>
<td>Mar 25</td>
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<tr>
<td>Ch 7 (Chemical Reactions)</td>
<td>Apr 1</td>
<td>(Chs 6 &amp; 7, 20 topics)</td>
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<tr>
<td>Ch 8 (Quantities…)</td>
<td>Apr 15</td>
<td>Apr 4</td>
</tr>
<tr>
<td>Ch 9 (Electrons and Atoms…)</td>
<td>Apr 22</td>
<td>(Chs 8 &amp; 9, 20 topics)</td>
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<tr>
<td>Ch 10 (Chemical Bonding)</td>
<td>May 6</td>
<td>Apr 25</td>
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<tr>
<td>Comprehensive ALEKS Assessment</td>
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<td>(16 topics) May 9</td>
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*Chapter 1 contains introductory material, and will not have a Forum associated with it.*