CASPER COLLEGE COURSE SYLLABUS
Chem 1006: Basic Chemistry Lab

Semester/Year: Summer 2015 Section N1

Lecture Hours: 0    Lab Hours: ----------    Credit Hours: 1

Instructor: Mitchel D. Millan, Ph.D.

Office: PS333, 307-2683017    Email: mmillan@caspercollege.edu

Office Hours: By appointment only

*Start Lab 4 early in the week, as several days may be needed to complete the drying process.

IMPORTANT SCHEDULE ANNOUNCEMENT:

Your instructor will have limited internet access from June 6 to the end of June. As a consequence of this:

-you can contact me via email at mmillan@caspercollege.edu or Moodle Class Communication within Moodle. I will still check email and MCC at least once a day, and I will reply within 24 hours, excluding weekends.

-if you have any issues with Moodle, contact the Helpdesk at helpdesk@caspercollege.edu or call them at 307-2683648. You may also email Michael Deal at mdeal@caspercollege.edu. However, his availability MAY be limited during the Summer term.

- The Sample Report and Lab 1 MIGHT not be corrected until the 17th of June. All other reports will be corrected within 3 days after the due date.

Course Description:
Elementary chemical laboratory practice demonstrating the applications of chemical theory. This laboratory includes experiments on density, changes of state, physical and chemical properties, percent composition of hydrates, elementary qualitative analysis, chemical reactions, and empirical formulas. Not recommended for students who plan to take CHEM 1025 or CHEM 1035. Concurrent enrollment or credit in CHEM 1005 is required. (Taken with CHEM 1005, equivalent to UW CHEM 1000.)
**Statement of Prerequisites:** must be taken concurrently with or subsequently to, Chem 1005

**Goal:** This lab seeks to: (i) demonstrate practical laboratory techniques and requisite calculations through the completion of several fundamental chemistry experiments (ii) instill proficiency in techniques including measurements of mass, length, temperature, and volume, (iii) prepare you for identification of several unknowns by various methods, and calculation of quantities such as density, specific heat, etc.

**The LabPaq!!!** Lab Experiments will be performed at home (or at a location convenient to you), using a chemistry LabPaq CK-CSP (hereafter referred to as the Paq), available from LabPaq at https://www.holscience.com/mm5/merchant.mvc?Screen=LOGN. Use the login C000036 and the password labpaq. Go to the LabPaq, Chemistry window, then click on Add to Cart. Cost is currently $190. It will ask you if you want to order the Thermometer, Digital. This is NOT required, and you do not need to get this with the Paq. Click on Checkout and complete the ordering process.

LabPaq prefers that you order your Paq on-line. There MAY be an extra charge to order the Paq from an operator using their toll-free number. **Purchase the LabPaq no later than the second week of June.**

**CK-CSP** currently costs $190 plus shipping (varies with your location). **Other types of lab kits (from LabPaq or other distributors) are NOT applicable to this course.**

Once you receive the Paq, inspect it IMMEDIATELY for completeness and quality of contents. Check also the mini lab scale that comes in its own box- the digital display could be damaged. Missing/broken/poor quality contents will be replaced at no cost to you if you contact LabPaq directly at 866-206-0773 within **two weeks** of receipt. Be sure of your plans regarding this on-line/off-campus chemistry lab, as you can only return the Paq for a refund less a $35 restocking fee (actual price subject to change) within **three weeks** of receipt. No returns will be accepted after this time. (See the Withdrawal Deadline under Lab Policies…) Content replacement requests and return/refund requests must be directed to LabPaq.

Casper College and all affiliated with this on-line chemistry lab section will assume no responsibility for business conducted directly with LabPaq, such as refund issues, non-returnable Paqs (past three weeks) or non-replaceable contents (after two weeks).

Be sure about your plans and schedules concerning this lab. Dropping the course (see Class Policies below) does not guarantee return of the Paq or refund of the cost. You must contact LabPaq (http://www.labpaq.com/contact) directly to find out if you qualify for a return.

**MOODLE:**
You will use Moodle to communicate with your instructor and with each other, and to receive files and documents that are not available in Google Drive (see below). You will also find a copy of this Syllabus, and the video “Lab Reports via Google Drive”. The shell is 15/Summer
**Chem 1006-N1 Basic Chemistry Lab.** Note that this is different from the Moodle shell used for the corresponding lecture Chem 1005-N1.

**Outcomes:**
Upon successful completion of this course, students will:
1) be aware of basic safety and emergency procedures when performing chemistry experiments.
2) be trained in the proper procedures for performing experiments, and in the proper handling and use of chemical reagents, glassware, equipment, and balances.
3) understand the concepts of Basic Chemistry that the laboratory experiments are meant to illustrate and reinforce.

**Initial Requirement:** Go to the first window / box in Moodle. **This Two-Step activity must be completed in Moodle by end of day (11:59 PM) of June 8.**

- Watch the SAFETY and INTRODUCTION VIDEOS.
- Click on the activity labeled Lab Safety Agreement (LSA). Read each item and check off the appropriate boxes. **Note that checking the last box / item in the LSA is considered to be equivalent to a signature and makes the LSA legally binding.** The LSA is similar to the Science Lab Safety Reinforcement Agreement found in the Paq CD Lab Manual (pp.11-12). You may disregard the SLSRA. **No lab reports will be graded until the LSA is completed.**

**Methodology:** Ten LAB REPORTS (100 pts each):
- Each Report is worth 100 points. It is extremely difficult to apportion all the scores in a report into 100 equal points. Your instructor will simply assign a reasonable number of points for notes/observations/results/questions. Your percentage will be taken as your report score. For example, if the maximum points for an experiment sum up to 116 points, a raw score of, e.g. 102 points equals a report score of (102 / 116 = 87.9%) = 87.9 points.

- **You will actually be performing 11 experiments. To give you a little leeway, the lowest scoring report will be dropped, and only the ten highest scoring reports will be used to find your final grade. Any missed reports beyond the single dropped experiment will be given 0 points and included in grade calculations.**

- A Laboratory Manual (in pdf format) is provided on the Paq CD. The same Lab Manual is available at the top of the Moodle page as a pdf file. The eleven lab experiments will be performed according to the schedule listed below. Note that the experiments will not be covered in the order given in the Manual. You are required to complete each experiment and submit the report by the due date given in the Schedule below.

- Since you are performing these experiments off-campus, there will be no credit for lab performance. You will be graded solely on your Lab Reports. **Perform your experiments and write your reports well. If you are unsure about anything,**
contact your instructor before you submit the report, not after the fact. Read the EXTRA INSTRUCTIONS (if any) in the Moodle shell.

- **VERY IMPORTANT!!! SELFIE ALERT!** To ensure your safety when performing the lab experiments, you MUST have a responsible adult with you as a lab partner. Your partner need to do the actual experiment with you (although it might be fun for him / her), but this adult must be in close proximity to help out as the need arises. For example, he / she might be there to blow out a flame, or hold a piece equipment still for you when you can’t. This means your lab partner cannot be your toddler or young child, your dog or your cat. To enforce this requirement, you must post a SELFIE image showing you and your lab partner at the very end of each lab report. This is over and above any other images you are required to post on some of the lab reports. The Sample Report, Lab 1, Lab 6, and Lab 11 are exceptions- no selfies required, as there are no chemical reagents or lab equipment involved with these four labs.

- **VERY IMPORTANT TOO!!!** Disregard the recommended format of the Report (e.g. pp. 164-171 of the Lab Manual). Instead, your instructor will be using Google Drive (you MUST use your official Casper College gmail account) for all lab reports. An instructional video titled “Lab Reports via Google Drive” can be viewed in the lab Moodle shell. Watch this video several times to make sure you know how to complete reports for this lab course. Using your Gmail account (you MUST have one!) a Google Drive folder will be shared with you that contains all the templates for the lab reports you will be writing. Again, all the details will be discussed in the video “Lab Reports via Google Drive”.

- To make sure you are comfortable with Google Drive, you will complete a Sample Report using the procedure you will be following for the actual 11 experiments. Make sure you do this, so you can start to get used to the “quirks” of using Google Drive. To add some incentive, an extra 10 points will also be added for the Sample Report to the 1000 point maximum for this course.

- **In all reports, always show a measurement or calculated value to the correct number of significant figures and with the proper units.** For example, a three significant figure mass would be, for example, 2.58 g (grams). Only partial credit is given for incorrect significant figures (e.g. 2.5 g) or missing units (2.58 __). **Very large emphasis is placed on the significant figures in your measurements, calculations and answers. Be absolutely sure that you know how to handle significant figures in measurements and calculations!!!**

- **You must show all calculations, even if this is not explicitly asked for in the Lab Report Template. If only answers are given, you will be given only partial credit.**

- **Reports must be completed by end of day (11:59 PM) of each Wednesday or Saturday due date. Obviously, you have to perform the actual experiment on or**
before that date. It is recommended that you do the labs early in the week of this
due date. You might not finish some experiments if you start on the day itself that the
report is due. For example, Lab 1 must be completed within the week of June 8, and the
lab report completed by June 13. Each report in Google Drive will contain a date and
time stamp, which will indicate whether the report was completed on time. Full details
will be available in the “Lab Reports via Google Drive” video in the lab Moodle page.

- Although labs have Wednesday or Saturday due dates, reports completed no
  later than end of day TWO DAYS BEFORE the due date (Monday or Thursday) are
  allowed one revision. You MUST EMAIL your instructor at
  mmillan@caspercollege.edu immediately after
  completion, to say that you have an EARLY REPORT. Otherwise, your report will only be
  checked on the due date itself, and you lose the chance to make revisions.

- Each EARLY report will be graded no later than a day after your submission, and
  you have until the end of day of the Wednesday or Saturday due date to make
  corrections, allowing you to get back HALF the points lost. Reports completed on
  or after the due dates are not eligible for revisions of any kind. The Sample
  Report and Lab 1 MIGHT not be corrected until the 17th, so these reports, IF
  completed by the corresponding due dates, will be allowed one revision up to the
  end of day June 20. Labs 2 and 3 is still be due on June 17 and June 20,
  respectively, and are NOT covered by this extension.

- If you are unable to complete your Report as scheduled, you must email (or Moodle
  message) your instructor on or before the Wednesday or Saturday due date to
  arrange for an extension. Otherwise, your report will be penalized 10% per day late, not
  including holidays or weekends. Penalties will continue to accrue until the Report is
  submitted, you have run out of points, or until you have contacted your instructor. Late
  contact (emails after the Wednesday or Saturday due date) will stop penalties, but not
  recover lost points.

- The corrected lab reports will be available to you immediately since you are sharing the
  report in Google Drive with your instructor. Full details are available in the “Lab Reports
  via Google Drive” video in the lab Moodle page.

| GRADING             |
| SCALE               |
| A: 900-1000 pts     |
| B: 800-899 pts      |
| C: 700-799 pts      |
| D: 600-699 pts      |

Class Policies / Last Date to Change to Audit Status or to Withdraw with a W Grade:
Since this is an off-campus lab section, you are solely responsible for performing each experiment in a safe manner. **Casper College and all affiliated with this chemistry lab section will assume no responsibility for injury / accidents that occur during the performance of each experiment.** Remember, you MUST perform the experiments in the presence of a responsible adult (lab partner).

Read pages 4-10 in the Lab Manual before performing any experiments. The Paq CD includes MSDSs (Material Safety Data Sheets) for the chemicals you will be using. When the chemicals and equipment provided are used in the prescribed manner, there is little chance of injury or accident. It is your responsibility to follow all procedures, deviating only when your instructor tells you to do so.

Use the safety equipment provided (e.g. safety glasses / goggles, latex gloves. Lab coat or kitchen apron recommended), follow safety procedures (safe handling of glass, flame, chemicals, etc.), and observe proper waste disposal. Dispose of waste chemicals in the manner prescribed in the Lab Manual.

**The last day for withdrawal (grade of W) without instructor permission is July 9.**

**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 (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. 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:
<table>
<thead>
<tr>
<th>Due Date</th>
<th>Lab</th>
<th>Manual</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 8</td>
<td>----</td>
<td>------</td>
<td>Lab Safety Agreement, LSA</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>------</td>
<td>Sample Report</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
<td>p. 62</td>
<td>Math Practice Lab</td>
</tr>
<tr>
<td>17</td>
<td>2</td>
<td>p. 27</td>
<td>Laboratory Techniques &amp; Measurements</td>
</tr>
<tr>
<td>20</td>
<td>3</td>
<td>p. 93</td>
<td>Physical &amp; Chemical Properties</td>
</tr>
<tr>
<td>24</td>
<td>4</td>
<td>p.100*</td>
<td>Separation of a Mixture of Solids</td>
</tr>
<tr>
<td>27</td>
<td>5</td>
<td>p.118</td>
<td>Caloric Content of Food</td>
</tr>
<tr>
<td>July 1</td>
<td>6</td>
<td>p.79</td>
<td>Naming Chemical Compounds</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td>p.146</td>
<td>The Mole Concept…</td>
</tr>
<tr>
<td>11</td>
<td>8</td>
<td>p.135</td>
<td>Oxidation-Reduction / Activity Series</td>
</tr>
<tr>
<td>15</td>
<td>9</td>
<td>p.126</td>
<td>Ionic Reactions</td>
</tr>
<tr>
<td>18</td>
<td>10</td>
<td>p.109</td>
<td>Stoichiometry of a Precipitation Reaction</td>
</tr>
<tr>
<td>22</td>
<td>11</td>
<td>p. 14</td>
<td>Lewis Structure Model</td>
</tr>
</tbody>
</table>