

CASPER COLLEGE COURSE SYLLABUS
Chem 1006: Basic Chemistry Lab

Semester/Year: Fall 2015 **Section N1**

Lecture Hours: 0

Lab Hours: -----

Credit Hours: 1

Instructor: Mitchel D. Millan, Ph.D.

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

Course Description:

(<http://www.caspercollege.edu/admissions/catalog/coursedescript.aspx?Code=CHEM>)

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 Lab Kit!!!

Lab Experiments will be performed at home (or at a location convenient to you), using a Lab Kit, assembled by eScienceLabs:

- Go to www.esciencelabs.com
- Click on **Have a Code** in the upper right side of the page
- Enter **Kit 4034** in **Code**, click **Submit**, and proceed to check out

Purchase Kit4034 no later than the first week of September.

Kit4034 currently costs \$169 plus shipping (varies with your location). Other types of lab kits (from eScienceLabs or other distributors) are NOT applicable to this course.

Once you receive Kit4034, inspect it IMMEDIATELY for completeness and quality of contents. Missing/broken/poor quality contents will be replaced if you contact eScienceLabs directly at 1-888-ESL-KITS as soon as you receive the kit.

Casper College and all affiliated with this on-line chemistry lab course will assume no responsibility for business conducted directly with eScienceLabs, such as replacement, or return and refund issues.

Be sure about your plans and schedules concerning this lab. Dropping the course (see Class

Policies below) does not guarantee refund of costs for the Lab Kit. You must contact eScienceLabs 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/FA **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 Sept 2.**

- **Watch the SAFETY VIDEO.**
- 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. No lab reports will be graded until the LSA is completed.***

Methodology:

Ten LAB REPORTS (80 pts each)

- Each Report is worth 80 points. Lab Reports are composed of two parts:
 - Pre-Lab Questions, which must be completed in the lab Moodle shell no later than 1 day before the due date of the main Lab Report. Each set of Pre-Lab Questions are worth 10 points.
 - main Lab Report must be completed in Google Docs by the due date. Each Lab Report is worth 70 points.
- It is extremely difficult to apportion all the scores in the Lab Report into 70 equal points. Your instructor will simply assign a reasonable number of points for data / observations / results / post-lab questions. Your percentage of 70 points 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 102 equals $102 / 116 = 87.9\%$ or a total of $70 \times 0.879 = 61.5$ out of 70 points for the main Lab Report.
- ***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 give you a maximum of 80×10 report = 800 pts. Any missed reports beyond the single***

dropped experiment will be given 0 points and included in grade calculations.

- In addition to the Pre-Lab Questions, the lab Moodle shell contains an Introduction portion (to the material in each experiment) and an Experiment portion (containing the actual procedures). Read through both portions before performing the actual lab experiment.
- **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 needs to be there as you perform the experiment, 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 start of each lab report. This is over and above any other images you are required to include in the reports.
- **VERY IMPORTANT TOO!!!** Your instructor will be using Google Drive (you MUST use your official Casper College gmail account) for all lab reports (not including the Pre-Lab Questions in Moodle). 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 college 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 same 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. An extra 10 points maximum 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 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 3 must be completed within the week of Sept 7, and the lab report completed by Sept 12.

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 reports have a Saturday due date, reports completed no later than end of day TWO DAYS BEFORE the due date (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. Without this email notification, your report will only be checked after the due date itself, and you lose the chance to make revisions.**
- **Upon your email notice, each EARLY report will be graded no later than a day after your submission (Friday), and you have until the end of day of the Saturday due date to make corrections, allowing you to get back HALF the points lost. Reports completed one day before, or on or after the due dates are not eligible for revisions of any kind.**
- Only the main Lab Reports are eligible for revision. The Pre-Lab Questions in the lab Moodle shell are due no later than one day (Friday) before the report due date (Saturday). Pre-Lab Questions are not subject to revision.
- If you are unable to complete your Report as scheduled, you must **email** your instructor ***on or before the Saturday due date*** to arrange for an extension. Otherwise, your report will be penalized 5 pts 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 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.

Lab MIDTERM TEST (100 pts).

- A Midterm Test covering material from the **first five** experiments will be administered in Moodle according to the schedule below. The Midterm will include *up to* 15 questions, and only one attempt will be allowed. Your percentage will be the score for your Midterm, i.e. if you get 92% of the questions right, you get 92 pts of the possible 100.

Lab FINAL TEST (100 pts).

- A Final Test covering material from the **last six** experiments will be administered in Moodle according to the schedule below. The same information as for the Lab Midterm holds for the Final.

<u>GRADE DISTRIBUTION</u>	<u>Max. Scores:</u>	<u>GRADING SCALE</u>
Pre-Lab Questions in Moodle	100 pts	A: 900-1000 pts
Lab Reports in Google Docs	700 pts	B: 800-899 pts
Lab Midterm Test in Moodle	100 pts	C: 700-799 pts
Lab Final Test in Moodle	100 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).**
- 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 Nov 13.***

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 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. 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:

Pre-Lab Questions Due:	Lab Report Due :	Lab	Title
-----	Sept 2	-----	Lab Safety Agreement, LSA
-----	5	-----	Sample Report
Sept 11	12	3	Measurements
18	19	4	Properties of Matter- Density
25	26	5	Mixtures and Solutions
Oct 2	Oct 3	6	Chemical and Physical Change
9	10	7	Heat and Calorimetry
-----	15-17	-----	Lab Midterm
23	24	14	Chemical Reactions I
30	31	15	Chemical Reactions II
Nov 6	Nov 7	16	Metals and Oxidation
13	14	19	Stoichiometry
20	21	9*	Electron Configuration
Dec 4	Dec 5	11*	Molecular Models
-----	10-12	-----	Lab Final

*Note that because of the numbering of the Lab Experiments by eScienceLabs, we will NOT always be performing the labs in numerical order.