

**Chemistry 106L, Chemistry Survey Laboratory – 1 credit hour**  
**South Dakota State University**  
**Fall 2008**

Class Time: Dependent upon section      Class Location: SH 152/156

**Lab Coordinator:**

Deborah Pravecek  
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**Lab Instructors:**

Surya Gopal  
Bethany Melroe  
Carol Olesen  
Gregory Nkepan  
Lei Geng  
Douglas Raynie  
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Janet Bjordahl  
Deb Pravecek  
Degam Ganesh  
Andrew Young  
Stephanie McClure  
Melody Jewell

**Each lab instructor will have their own office hours. Check with your individual lab instructor for their contact information (phone numbers, e-mail, etc.) and the times of their office hours.**

**Course Description:** This course is the laboratory component to Chemistry 106, a one semester introduction to chemistry. It is not intended for those needing an extensive chemistry background.

The laboratory is designed to help you better understand the material that is presented in the lecture portion of the class.

**Course Co-requisites:** Chemistry 106 is the co-requisite for Chemistry 106L. You are not allowed to enroll in the Chemistry 106L unless you are currently enrolled in Chemistry 106 or have a passing grade for Chemistry 106.

**Course Goals and Student Learning Outcomes:** This course fulfills the System General Education Goal #6: Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world. As a result of taking this course, students will:

1. Demonstrate the scientific method in a laboratory experience.
  - To meet this outcome, students will apply the scientific method to explore laboratory problems in chemistry.
  - This outcome will be assessed through laboratory reports and quizzes.
2. Gather and critically evaluate data using the scientific method.
  - To meet this outcome, students will draw conclusions from laboratory experiments and evaluate the validity of the data.
  - This outcome will be assessed through laboratory reports and quizzes.
3. Identify and explain the basic concepts, terminology and theories of the selected natural sciences
  - To meet this outcome, students will identify and explain basic concepts in chemistry.

- This outcome will be assessed through laboratory reports, quizzes and assigned problem sets.
4. Apply selected natural science concepts and theories to contemporary issues.
- To meet this outcome, students will utilize chemistry principles in the laboratory to evaluate topic of current interest.
  - This outcome will be assessed through laboratory reports and quizzes.

**Freedom in Learning:** Under Board of Regents and University policy student academic performance may be evaluated solely on an academic basis, not on opinions or conduct in matters unrelated to academic standards. Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled. Students who believe that an academic evaluation reflects prejudiced or capricious consideration of student opinions or conduct unrelated to academic standards should first contact the instructor of the course to initiate a review of the evaluation. If the student remains unsatisfied, the student may contact the department head and/or dean of the college which offers the class to initiate a review of the evaluation.

**Instructional Methods:** This course is a laboratory based course. As such, the student will gain familiarity with general laboratory equipment and techniques. A web page has been developed to help you with concepts or procedures that you may find difficult in the laboratory experience. The URL for the web page is: [http://learn.sdstate.edu/Deb\\_Pravecek/Chem106L/index.htm](http://learn.sdstate.edu/Deb_Pravecek/Chem106L/index.htm)

**Lab Manual:** *Chemistry 106L, Chemistry Survey Lab, 2<sup>nd</sup> ed.*, Pravecek (required)

**Attendance:** Laboratory attendance is mandatory. Students must attend the section in which they are enrolled. There will be no make-up labs scheduled. We will do 11 labs during the course of the semester. You will be allowed to drop one of your laboratory scores. Only the top 10 laboratory report scores will be included in your final grade calculation. If you miss a lab you may use that lab as your “missed lab”. If you know in advance that you will need to be gone from lab for a University approved excuse, you may make up the missed lab in another section that is doing the same experiment as you are missing. In all cases, a Lab Make-Up Permission Form must be obtained and signed by Mrs. Pravecek in order for you to make up a lab.

**Disability Accommodation:** If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please inform your lab instructor or myself and make appropriate arrangements with the Office of Disability Services. The Office of Disability Services is located in Administration 102. To schedule an appointment call (605) 688-4504.

**Academic Honesty:**

- You are required to do your own work. Cheating will not be tolerated. Cheating includes, but is not limited to: copying laboratory results from another pair of students, copying from another student’s exam, possessing a cheat-sheet, or talking to another student during an examination or quiz. Cheating will result in failure of the course.
- If you have the same laboratory data as another pair of students in the lab, it will be assumed that cheating has occurred. ALL OF THE STUDENTS INVOLVED WILL RECEIVE A “F” FOR THE FINAL LABORATORY GRADE.

### Lab Safety:

- **APPROVED safety goggles must be worn by ALL STUDENTS AND LAB INSTRUCTORS whenever chemicals are being used in the laboratory.** You may not remove your goggles until ALL students in the laboratory are finished with the chemicals and all work areas have been cleaned.
- Approved safety goggles are available for sale at the SDSU Bookstore. To be approved, safety goggles must:
  - Have indirect venting
  - Fit snugly around the user's eyes, cheeks, temples, etc.
  - Be kept clean to reduce vision impairment.If in doubt whether a pair of goggles is acceptable, check with your lab instructor.
- If you must remove your safety goggles for **any** reason you must step outside the laboratory into the hall.
- If you do not have the appropriate safety goggles, you will not be allowed in the laboratory. If you forget your goggles, you must go get them before you may return. **Failure to attend a lab session because of failure to have approved safety goggles is considered to be an unexcused absence and will result in a score of "0" for that laboratory session. YOU WILL NOT BE ALLOWED TO MAKE UP THIS LAB.**
- Appropriate attire must be worn in the laboratory. Shorts, sandals and exposed midriffs are not safe and will not be tolerated in the lab. In addition, you are advised not to wear clothing that you do not wish to ruin. Chemicals may eat holes in your clothing without your being aware of it. Open toed or canvas shoes are unsafe in the laboratory and must not be worn.
- Safety precautions will be discussed during the first laboratory session. You are responsible for following all of the safety rules presented. If at any time during the semester your laboratory instructor finds that you are not following the established safety rules, he/she may subtract up to 10 points from your weekly laboratory grade.

### Laboratory Policies:

- This syllabus is the contractual document between the instructor and the student. It is the responsibility of the student to read and understand all of the content of the syllabus. I will not respond to any e-mails which can be answered by referring to your syllabus.
- You must read each laboratory procedure prior to coming to lab. In addition, you must complete the pre-laboratory exercises in the laboratory manual **before you come to lab.** The pre-laboratory exercises will be removed from your laboratory manual and turned into your laboratory instructor **at the beginning of the lab session.** It is your responsibility to make sure that the pre-lab report is turned in on time. 2 points will be deducted from all late pre-lab reports.
- Your laboratory instructor will discuss important information about each experiment at the beginning of each laboratory session. You will also find a web page specific for each experiment. The page will have demonstrations of the techniques used in each experiment, specific safety instructions, and disposal instructions for any chemicals used. You are required to read the web page prior to coming to lab. You may also find it helpful to refer to the web page during the experiment to find answers to specific questions that you may have.
- You will work in pairs for each experiment, unless otherwise instructed. Please remember that a pair is two.
- **Students must be present for the entire lab period to submit a report.**

- On the web page you will find a grading sheet for each laboratory experiment. The grading sheet must be printed prior to coming to lab. It will be turned in (with the appropriate signatures/initials) with your laboratory report. Failure to turn in the grading sheet may result in the deduction of 1 point from your laboratory grade.
- Complete the laboratory report as you do the experiment. Lab reports are due at the end of the week's laboratory session.
- Additional problems will also be assigned. You will find the additional problems on the laboratory web page. The additional problems will not be graded, but one of the additional problems will appear on the weekly laboratory quiz.
- A quiz will be given at the beginning of each laboratory session. The quiz will be worth 15 points. You are required to have read the introductory information before each laboratory session and be prepared for the quiz. The point distribution for the laboratory quizzes will be as follows:
  - 2 points – Some safety aspect in the laboratory
  - 2 points – The pre-lab questions.
  - 2 points – The assigned laboratory reading (preliminary information, the laboratory experiment or the web page) for each week.
  - 4 points – A question or calculation from the previous week's lab.
  - **5 points – One of the additional problems assigned on the web page. It is your responsibility to know how to do these problems. If you need help, you may ask your laboratory instructor (during their normal office hours) or go to the Chemistry Resource room BEFORE YOU COME TO LAB.**
- **YOUR WORK AREA MUST BE CLEANED AND ALL GLASSWARE WASHED BEFORE YOU LEAVE THE LAB.** You are responsible for making sure that the equipment is clean and returned to the proper area before leaving the lab. If you do not clean up your work area or if you put your glassware away dirty, you may be docked 10 points per laboratory session. You are required to obtain your instructor's signature on the check-list stating that your work area is clean and that all glassware has been washed.

#### **Lab Reports:**

- Lab reports are found in the lab manual and are due at the end of each lab period unless you are instructed otherwise.
- Experiments will be graded on the basis of 25 points, 20 points for each lab and 5 points for the pre-lab assignment. In addition, the weekly quiz is worth 15 points.
- **Complete sentences must be used when answering questions.** Failure to use complete sentences when answering questions will result subtraction of up to 3 points from the laboratory report.
- In order to receive the maximum number of points, you must show all your work whenever calculations are involved. Failure to show work will result in the deduction of 50% of the total assigned points. In addition, the proper units must be indicated and results/answers reported to the proper number of significant figures if maximum credit is to be obtained.
- Laboratory reports will be graded and returned to you during the next laboratory session. It is your responsibility to pick up graded lab reports if not returned by the laboratory instructor. It is recommended that you save the reports for the balance of the semester. If you feel that a mistake has been made in grading, you must submit your report along with written justification for the requested change in grade. The deadline for submissions of such requests is one week after the laboratory report was returned to you.

**Lab Grades:** The point distribution for the lab will be as follows

10 pre-lab reports: 10@5 points each	50 points
10 lab reports: 10@20 points each	200 points
10 laboratory quizzes @ 15 points each	<u>150 points</u>
	400 points

The following grading scale will be used. However, grades may be normalized between lab sections to account for differences between laboratory instructors:

- 92%+ (or 368 points +) = A
- 82-91.9% (328 – 367 points) = B
- 72-81.9% (288 – 327 points) = C
- 62-71.9% (248 – 287 points) = D

## CHEM 106L LAB MAKE-UP PERMISSION FORM

### Instructions:

1. Contact your lab instructor as soon as possible (preferably before) if a lab is missed. You and your lab instructor will find a suitable lab section when you can make-up the lab. You must make up an excused lab during the same week that you missed the lab or during a make-up session. Your lab instructor will notify the instructor of the make-up lab.
2. Complete this permission form and have your instructor sign it. The instructor of the make-up lab will not allow you to enter the lab without this signed form.
3. Upon completion of the experiment, have the make-up lab instructor sign the form and staple it to your lab report. Turn the lab report in to the instructor of the make-up lab and he/she will give it to your regular lab instructor.

Name \_\_\_\_\_ Lab Section \_\_\_\_\_

Date of Lab Missed \_\_\_\_\_ Experiment Missed \_\_\_\_\_

Date of Lab Make-up \_\_\_\_\_ Section of Lab Make-up \_\_\_\_\_

Signature of Regular Lab Instructor \_\_\_\_\_

Signature of Make-up Lab Instructor \_\_\_\_\_

