

COURSE SYLLABUS  
CHEM 1021 L (01- 05)  
GENERAL CHEMISTRY II LABORATORY

Fall 2009  
1 Credit Hour

Course Sections

Section	Day	Time	Room
01	M	2:00 – 4:50	36-322
02	T	7:50 –10:40	36-308
03	W	2:00 – 4:50	36-322
04	R	7:50 –10:40	36-308
05	F	2:00 – 4:50	36-308

Course Instructors

	Office	Phone	e-mail (@xula.edu)	Office Hours of your Instructor
Ms. Beshirs, Megan	36-323	x5718	jbeshir1	
Mr. Luo, Robert	36-309	x5077	rluo	
Dr. MaGee, Gloria	36-301A	x7380	gmagee1	

Course Description:

Students are introduced to a series of experiments in which schemes for separation and identification of mixtures of inorganic cations are utilized. Students will also conduct experiments introducing them to a variety of techniques in acid-base titrations, electrochemistry, and kinetic studies. Students who complete this course will be familiar with the techniques and principles of qualitative inorganic analysis. In addition, students will develop basic laboratory skills necessary for upper-level courses and for research. 1021L is a one session per week 3-hour laboratory.

Prerequisites: CHEM 1010/1010D/1011L.

Corequisites: CHEM 1020/1020D.

Course Objectives:

- 1) To become familiar with the techniques and principles of qualitative analysis.
- 2) To further develop reasoning and problem-solving skills including the ability to:
  - generate schemes for the separation of mixtures of cation solutions using data concerning solubility and behavior of precipitates of the cations under study.
  - identify and separate the components of mixtures of metal ion solutions using these schemes.
  - interpret data similar to that generated in the lab to determine the identity of ions in solution.
- 3) To become familiar with experimental techniques in acid-base titrations, electrochemistry, and kinetics.
- 4) To master those basic laboratory skills needed to enter advanced chemistry courses.

Materials Required: General Chemistry II Laboratory Manual by M. R. Adams, L. R. Allen, J. Bauer, J. W. Carmichael, Jr., J. P. Sevenair, and M. A. Thomson (YELLOW COVER)

Safety Goggles (Not Glasses)  
Laboratory Coat  
Nonprogrammable Calculator

Course Requirements: Attendance is required for all scheduled labs during the time for which the student is scheduled. Attendance records will be kept. It is the general policy that no make-up labs are allowed. In the event of an absence, a student is responsible for doing and turning in the homework which she or he missed. A student missing more than 2 labs will receive an automatic grade of FE.

Course Evaluation: Each experiment will be divided into two parts, an in-class portion and an out-of-class or homework portion worth 50 points each for a total of 100 points per experiment. The final exam is equal in value to two laboratory reports (200 points). The total possible for the semester is **1450** points. See the attached Grade Sheet for a complete point breakdown.

*The in-class portion* will include a short quiz at the beginning of class, worth 10 points, covering information from the previous experiments. The remainder of the in-class points will come from observations made, data collected and analyzed, and the effective separation and identification of components of both known and unknown solutions. This portion will be graded by your instructor before you leave the class. Some labs will require you to fill out a discussion section or other prelab exercise before you come to class. Failure to complete the prelab exercise will result in a loss of some of the “in-class” points.

*The homework portion* will consist of exercises which require the student to apply what has been learned during the experiment while using a different set of data. The homework will be due at the **beginning** of the next class session.

*Grading* will be based on the clarity with which you present your data. On the homework, additional attention will be given to spelling and grammar. There will be a penalty of 10 points for each day that a homework assignment is late.

*Laboratory safety* is very important in the lab. **YOU MUST WEAR SAFETY GOGGLES AND A LAB COAT OR APRON AT ALL TIMES IN THE LAB.** Failure to do so carries a penalty of 5 points each

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you are in the lab without this protection.

*Clean-up duties* will be assigned on a rotating basis. A list of these assignments is posted in the lab. It is your responsibility to check this list to determine your duties and complete the assignment specified. Failure to do so carries a penalty of 10 points each time.

*Cheating*, as defined by University policy, will result in an automatic grade of F and possible disciplinary action by the University for **all parties involved**. Further comments regarding academic misconduct can be found on the next page of this syllabus.

*The Final Grade* will be determined as follows:

- A = average between 90% and 100% for all assignments and exams
- B = average between 80% and 89% for all assignments and exams
- C = average between 70% and 79% for all assignments and exams
- D = average between 60% and 69% for all assignments and exams
- F = average below 60% for all assignments and exams

**CELL PHONES, PAGERS, IPODS AND OTHER SIMILAR ELECTRONIC DEVICES ARE NOT ALLOWED IN THE LABORATORY. FAILURE TO COMPLY WITH THIS RULE WILL RESULT IN YOUR REMOVAL FROM THE ROOM.**

**Evacuation Policy:** In the event that classes are cancelled due to a hurricane evacuation, assignments and other course materials will be posted on Blackboard. Students should access the Blackboard site as soon as possible following the evacuation.

## Academic Misconduct

The following statement is found in the Xavier Faculty Handbook:

*If a student's test, examination paper, laboratory report, term paper, or other written assignment gives evidence of not being completely his/her own work, he/she may be given an F for the course. A student who communicates with anyone during the course of an examination or test, unless with the permission of the instructor, may be immediately dismissed from the room and given an F. Such communication includes attempts to read from another's paper. If a student is found to have brought study materials into the examination room without the instructor's permission, it may be assumed that he/she intended to use such materials unlawfully, and he/she may be penalized accordingly.*

Any form of academic misconduct will not be tolerated. Most students have a pretty good idea of what is considered cheating on an exam or quiz. However, many have a hard time distinguishing what is acceptable from what is not acceptable when it comes to writing in-class reports and doing homework in this course. A few things to keep in mind:

- 1) It is never acceptable to falsify lab data. If, while analyzing the results of your experiment, you determine that your data cannot be correct, do not change it! It is expected that you will, on occasion, not successfully perform an experiment and that your data will not be good. When this is the case you should focus on trying to explain what might have gone wrong.
- 2) Do not use someone else's homework as a guide for how to do your own homework. Your homework **MUST** be your own work. Even if you don't "copy" someone's homework, looking at it to get ideas for writing your own is not acceptable. **YOU MAY NOT WORK ON GRADED HOMEWORK WITH OTHERS!** This includes comparing answers, accessing old homework from students who previously took the course, solving assigned problems together, and other such collaborations. Keep in mind, also, that in such situations the person who allows someone to look at his or her paper or who provides answers to others in some other way is considered equally guilty.

*The faculty member is to report immediately to his/her chair and dean any incident involving academic dishonesty and be prepared to make this report in writing. Written evidence supporting the charge should also be submitted.*

What is acceptable and, in fact, encouraged is the formation of study groups for the purpose of discussing the concepts covered in lab and on homework. Working in pairs or groups to solve problems similar to those assigned for homework is a good way to learn the material. Using this approach, you can often identify concepts with which you are having difficulty, and, with the help of the study group, gain a better understanding of these concepts *before* attempting the homework.

## CHEM 1021 LAB SCHEDULE

Fall 2009

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	<b>August</b> 24 Sol. and Net Ionic Equations	25 Sol. and Net Ionic Equations	26 Sol. and Net Ionic Equations	27 Sol. and Net Ionic Equations	28 Sol. and Net Ionic Equations
2	31 Aqueous Reactions	<b>September</b> 1 Aqueous Reactions	2 Aqueous Reactions	3 Aqueous Reactions	4 Aqueous Reactions
3	7 <b>Labor Day</b>	8 Group 1 Week 1	9 Group 1 Week 1	10 Group 1 Week 1	11 Group 1 Week 1
4	14 Group 1 Week 1	15 Group 1 Week 2	16 Group 1 Week 2	17 Group 1 Week 2	18 Group 1 Week 2
5	21 Group 1 Week 2	22 LeChatelier's Principle	23 LeChatelier's Principle	24 LeChatelier's Principle	25 LeChatelier's Principle
6	28 Group 3 Week 1	29 Group 3 Week 1	30 Group 3 Week 1	<b>October</b> 1 Group 3 Week 1	2 Group 3 Week 1
7	5 Group 3 Week 2	6 Group 3 Week 2	7 Group 3 Week 2	8 Group 3 Week 2	9 Group 3 Week 2
8	12 <b>Fall Break</b>	13 <b>Fall Break</b>	14 Group 4 Week 1	15 Group 4 Week 1	16 Group 4 Week 1
9	19 Group 4 Week 1	20 Group 4 Week 1	21 Group 4 Week 2	22 Group 4 Week 2	23 Group 4 Week 2
10	26 Group 4 Week 2	27 Group 4 Week 2	28 Acid/Base Titrations	29 Acid/Base Titrations	30 Acid/Base Titrations
11	<b>November</b> 2 Acid/Base Titrations	3 Acid/Base Titrations	4 Unknown Diprotic Acid.	5 Unknown Diprotic Acid	6 Unknown Diprotic Acid
12	9 Unknown Diprotic Acid	10 Unknown Diprotic Acid	11 Electrochem.	12 Electrochem.	13 Electrochem.
13	16 LeChatelier's Principle	17 Electrochem.	18 Kinetics	19 Kinetics	20 Kinetics
14	23 Electrochem	24 Kinetics	25 <b>Thanksgiving</b>	26 <b>Thanksgiving</b>	27 <b>Thanksgiving</b>

15	30	December 1	2	3	4
	Final Exam	Final Exam	Final Exam	Final Exam	Final Exam

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**GRADE SHEET**

General Chemistry II Lab  
 CHEM 1021L - \_\_\_\_\_ Spring 2009

Name: \_\_\_\_\_  
 Instructor: \_\_\_\_\_

Experiment	Quiz	Prelab	In Class	Home-work	Weekly Total	Cumul. Total
Intro./Sol. and Net Ionic Eq.	-----	-----	/50	/50	/100	/100
Aqueous Reactions	/10	/10	/30	/50	/100	/200
Group 1 – Week 1	/10	/10	/30	/50	/100	/300
Group 1 – Week 2	/10	-----	/40	/50	/100	/400
Le Chatelier's Principle	/10	-----	/40	/50	/100	/500
Group 3 – Week 1	/10	/10	/30	/50	/100	/600
<b>Midterm total (600 possible)</b>						
Group 3 – Week 2	/10	-----	/40	/50	/100	/700
Group 4 – Week 1	/10	/10	/30	/50	/100	/800
Group 4 – Week 2	/10	-----	/40	/50	/100	/900
Acid-Base Titrations	/10	-----	/40	/50	/100	/1000
Unknown Diprotic Acid	/10	/10	/30	/50	/100	/1100
Electrochemical Cells	/10	-----	/40	/50	/100	/1200
Kinetics	/10	-----	/40		/50	/1250
<b>Final Subtotal (1250 possible)</b>						
Final Exam					/200	/1450
<b>Total Points (1450 possible)</b>						
Average						

