Chemistry 125/126
General Chemistry - Inorganic Laboratory
Winter 2012

COURSE INFORMATION

Course information is also available on CTools and the web: http://www.umich.edu/~chem125

Course Coordinator and Lecturer	Office	Office Hours
Nancy Konigsberg Kerner	3541chem	11-12 T and 11-12 Th or by appointment
e-mail: nkerner@umich.edu		Phone: 734-763-5372

Chemistry 125 and 126 are 1-credit co-requisites that comprise the same coursework formerly associated with the 2-credit Chem. 125 course. For grading purposes, these courses are dependent co-requisites. Students will only earn credit in Chem. 126 by completing Chem. 125, and vice versa. The grade earned in one of these courses will be earned in the other.

Lectures and Labs

Pre-lab lectures are given in room 1800. Lectures are Tuesdays, 1-2pm (200 lecture) and Thursdays, 1-2 pm, (100 lecture). Lab and discussion sections meet after the pre-lab lecture. See the table below for information on lab and discussion section schedules.

Dis/lab Time	Monday	Tuesday	Wednesday	Thursday	Friday
8-11am		2 labs (100 sec)			
11am – 2pm		4 labs (100 sec)		4 labs (200 sec)	2 labs (200 sec)
2 – 5pm		4 labs (100 sec)		4 labs (200 sec)	2 labs (100 sec)

Discussions

Discussions take place after completing the laboratory experiment on a given topic. Discussions typically occur every other week and during the initial hour (8-9 am or 11- noon or 2-3 pm) of the next scheduled session after completion of an experiment. You are to report to lab when discussion is not held. Refer to the course schedule for specific discussion dates and times.

Exams

Hourly I: Tuesday, March 13, 6:15-7:45 PM
Hourly II: Tuesday, April 17, 6:15-7:45 PM
Sample exams are provided on Ctools and the course web site indicated above.

Required Course Materials

Lab Manual**:** Konigsberg Kerner, N., and Penner-Hahn, J., Collaborative Investigations in Chemistry, Hayden McNeil Publishing, Inc., Winter 2012.
Supplies: Marking pen for labeling tape on glassware.

Safety and Special Needs

Special safety problems? Contact Richard Giszczak (1608 chem; richg@umich.edu).
Special needs (e.g. large print exams or ?) Contact Nancy Kerner (3541 chem.; nkerner@umich.edu).

LAB METHODS

Chemistry is an experimentally based science. We know what we know because scientists have made experimental observations that have led to fundamental understandings and principles regarding the properties and reactivity of matter. The experiments in this manual will involve you in the process of looking for property and/or reactivity data patterns to solve problems.

You will conduct "inquiry" experiments where you are *not* expected to know the outcome in advance. Inquiry consists of 3 phases – exploration, organization, and application. During exploration, you will gather data in order to solve a problem. During the organization phase, you will manipulate the data to look for data patterns in order to solve the problem under investigation. During the application phase, you will make predictions about the properties of untested samples or situations based on experimental results.

While conducting the inquiry labs, you can expect to experience confusion as you seek answers to problems. It is important to know that being temporarily perplexed is a natural state of problem solving. If you know immediately how to solve a problem, then it is an exercise and not a problem. Confusion is a signal that you need to invest time sorting through the information and thinking about implications of the results.

You will do most of your experiments in a group where you will combine and compare data, instead of competing with classmates for the "right" answer. Read the information in the front of the lab manual regarding team learning and division of team tasks. Team-specific lab assignments are indicated on the page following the topic of discussion methods.

Combined data from the different teams will be available in lab and outside the lab on the University of Michigan provided Ctools course site and the website: http://www.umich.edu/~chem125.

It is important that all team members conduct *all* part of the experiments, independently observe the phenomena, and share and discuss results. Do NOT assign team members to do different parts of a lab experiment. Students historically indicate that they only learn and understand the parts of the experiments that they perform. Likewise, do NOT split up preparation of the team report if your goal is earning an A. The more effort that you put into your team, the more likely you will be rewarded in terms of skills learned and course grade.

You don't need lab experience to do well in Chemistry 125/126. You *do* have to: prepare in advance for the labs; attend your laboratory section and work conscientiously and safely during the period; think about the experiments that you have done; and prepare in advance for the discussion. If you do these things, you should be able to get at least a B grade for the course.

DISCUSSION METHODS

Learning how to give an effective presentation is a critical skill. During chem.125/126 discussions, you will have the opportunity to observe presentations of multi-teams and the different team approaches to critical data - based skills such as 1) how to extract meaningful information from experimental data 2) how to identify trends and outliers and 3) how to apply data results to untested situations.

At the beginning of each new lab topic, teams are assigned a specific discussion question to investigate where the team is responsible for teaching the question's answer to their peers. Discussion questions can be found at the conclusion of each experiment. The specific team assignments can be viewed in advance on Ctools within the Resources folder and below in this section of the lab manual. Discussion is held at the start of the next session following the end of a lab experiment.

In preparation for discussion, teams write up an abstract to turn into their instructor prior to the actual discussion presentation. The abstract is turned in during lab or within forty-eight hours of completion of the experiment. The abstract content is described below. For the discussion presentation, teams prepare a PowerPoint presentation that is about 5 minutes in length. Teams need to electronically submit a copy of their PowerPoint presentation slides to their instructor twenty-four hours in advance of discussion. The team may, however, continue to edit their presentation up to the time of the actual presentation.

Team abstract

1. Record team member names and the question/problem being addressed.

2. Record the major generalization(s) you are making -- what did you discover and what are any implications of your findings?

3. Indicate briefly how the data supports your findings.

Teams should aim to submit their abstract during lab to receive instructor feedback. Abstracts can also be submitted by e-mail within 48 hours of the completion of an experiment. An abstract submitted on time that includes the above information receives two points. Credit is deducted if the problem (**1**) is not stated - 0.5 pt. If (**2**) is missing or incomplete - 1 point. If specific data (**3**) is not referred to - 0.5 pt. If an abstract is submitted late = - 1 point. An abstract submitted after discussion will receive zero points.

Do keep in mind that it is inappropriate to ask an instructor or anyone if a one or two sentence conclusion in your abstract is “right”. The answer/conclusion alone doesn’t make for a “right answer”. Any stated conclusion will not be “correct” if the experimental data is erroneous or the process used to analyze the data is erroneous and thus does not support the conclusion.

Team outline for discussion presentation

1. State your names. What is the problem you are addressing?
2. Summarize in a sentence or two your teams proposed solution or position.
3. Briefly state the reasons for advocating your solution or position.
4. Argue your position or solution using the relevant class data. Make sure the data is organized into an appropriate graph or table and is labeled appropriately.

5. Describe the work and logic that led to your key finding/s such as showing:
    - Data re-organized into relevant tables and/or graphs. Indicate why you chose the particular visual representation.
    - Visual aids that emphasize or clarify your points. For example, you might use a visual of the Periodic table or a model or table of other information.
    - If there are competing positions or solutions, demonstrate the superiority of yours by comparing your approach/solution to other possible approaches.
    - If possible, explain how your findings can be used to predict properties and/or behavior of untested samples or situations.
6. Summarize in a sentence or two your key findings.
7. Ask your peers and instructor for feedback and questions on your presentation. Your peers should comments on the clarity of your slides and communication of findings. Your GSI should indicate if your key findings are appropriate based on the data and in agreement with scientific truth.
8. Present the *italicized* question. Allow your peers to discuss possible answers to the *italicized* question. After a brief time interval elicit group responses to the *italicized* question.
9. Share your prepared team response to the *italicized* question.

Team outline for exam question presentation

In advance of your presentation, check the answers to your assigned exam question by viewing the appropriate exam key posted on CTools with the Resources folder.

1. State your names. State the exam question. Do not read all questions but only a specific question as you provide an answer to that specific question.
2. Before providing any answers, indicate the experiment data/results that the question is based upon. Provide a verbal summary of the relevant data results or show the data.
3. Indicate how the experimental data results are used to determine the answer for each question or question part.
4. Make sure the methodology for answering the question is clearly presented. Students have access to exam keys so the aim is not to merely share the answer. Your goal is to show how the question/s relates to experimental results and the process of solving the question.
5. Ask you peers and instructor for feedback on your presentation.

TEAM ASSIGNMENTS WINTER 2012

Team Discussion Question Assignments WINTER 2012

Team	Experiment 1	Experiment 2	Experiment 3	Experiment 4	Experiment 5	Experiment 6
1	Hourly I W11, Q3	1	5	2	4	TBA
2	1	2	Hourly I W11, Q5	3	5	TBA
3	4	3	1	Hourly II W11, Q2: C-D and Q3	2	TBA
4	5	4	2	4	Hourly II W11, Q5	TBA
5	3	5	3	5	1	Hourly II W11, Q7: A and B Test 2
6	2	Hourly I W11, Q4	4	1	3	TBA

Team Experiment Assignments: E 1 – 3 Winter 2012

Team	E 1 Part 2	E 1 Part 3	E 1 Part 4	E 2 Part 1 Solution #	E 2 Part 4	E 3 Part IB
1	Group 1	Rxn 1 or 2	omit	1, 6,7	6	Group 1
2	Group 1	Rxn 3 or 4	omit	3 or 20, 5, 18	5	Group 2
3	Group 1	Rxn 5 or 6	omit	2 or 4, 8, 9	8	Group 3
4	Group 2	omit	Rxn 1 or 2	8, 10, 13	8	Group 4
5	Group 2	omit	Rxn 3 or 4	11, 15, 14 or 19	15	Group 2
6	Group 2	omit	Rxn 5 or 6	15, 16,17	15	Group 4

Team Experiment Assignments: E 4 - 6 Winter 2012

Team	E 4 Parts 1 and 2	E 4 Part 3 Bromophenol Blue and	E5 Parts 1, 2B, and 3	E6
1	Group 1	Thymophthalein	Group 1	Rxns
2	Group 2	Thymophthalein	Group 2	will
3	Group 3	Thymophthalein	Group 3	be
4	Group 1	Bromothymol blue	Group 4	lab
5	Group 2	Bromothymol blue	Group 1	assigned
6	Group 3	Bromothymol blue	Group 2	

SOME HELPFUL ADVICE

Before doing your first experiment, read about "Laboratory Safety" (Introduction of this manual). This manual also contains appendices that you should find useful. Read both the experiment and the appropriate reference material from the sections "Laboratory Techniques" and/or "Background information on chemical reactivity" before doing any experiment. If you wish additional information on a topic, do additional reading in any general chemistry text.

Since how well you do depends, in part, on the data that your classmates collect, everyone benefits when their classmates are better prepared. Study the pre-lab reading and the experiment and attend lecture before starting the experiment. Lectures are a chance to address questions you may have regarding the assigned pre-lab reading, experiment objectives, and the basic terminology and background information that are relevant to an experiment. Note that the lectures will *not* tell you what to do for the experiment or what results you will find -- part of your job is to figure out these details. Possible sources of help other than the lecture include the course lecturer (office hours indicated above), any graduate student instructor (office hours in Science Learning Center indicated below), any general chemistry text, and/or another student.

The course is cumulative and therefore it is important that you are not absent. If you think about and discuss the experiments while you are performing them, prepare well for and understand the discussion questions, study and understand the practice exam questions, you should be well prepared for the hourly exams. One of the best ways to determine if there are defects in your understanding is to join a study group and engage in dialogue about the lab and exam questions.

Graduate Student Instructor office hours.

GSI office hours are held in the Science Learning Center (Room 1720, Chemistry). The Science Learning Center is open various hours Monday - Friday (posted at SLC). A list of GSI names and office hours will be posted on the SLC bulletin board. Note that you may ask *any* general chemistry GSI for assistance, not just your GSI.

GRADING

Letter grades are based on points earned. Lab points are awarded to a student only if he/she is in attendance and performs an experiment. If a student does not perform an experiment or a portion of an experiment with his/her team during the scheduled time, the student will need to perform a make-up within two weeks of the absence (see make-up rules below) to earn points.

Some of the points in the course are "automatic" in the sense that you get some points for attempting an experiment, regardless of how well you perform. Everyone should be able to earn 100% of these "automatic" points. In addition you need to earn "discretionary" points (points that reflect your effort and understanding of the experiment and experimental results). For example, when writing the team report, the credibility of the arguments your team makes with respect to constructing possible explanations for what has been observed both qualitatively and quantitatively will be important when determining team report points. Laboratory and GSI points include both automatic and discretionary points. Exam and discussion points are discretionary.

Total course points

GSI/peer points	50 points
Laboratory and discussion	300 points
Exams	150 points
Total	500 points

Winter 2012 Grading breakdown for chemistry 125/126.

TEAM POINTS (54%)	**Maximum achievable points.**
Lab/Team reports (6 total)	192
Discussion presentations (6 total)	79
INDIVIDUAL POINTS (46%)	
Pre-lab report (6 total)	29
Hourly I exam	75
Hourly II exam	75
GSI and Peer points	50

COURSE LETTER GRADES vs. POINTS*

At least an A-	450 pts.
At least a B-	400 pts.
At least a C-	350 pts.
At least a D-	300 pts.

Point total: 500

* Grade point cutoffs are guaranteed and thus points needed for a particular letter grade will NOT be increased. The cutoffs, however, *may be lowered*. This usually occurs if some aspect of grading is not equitable to prior terms (e.g. a more difficult exam)

LAB/DISCUSSION POINT breakdown Winter 2012

Experiment	Pre-lab	Team Report	Discussion	TOTAL
Experiment 1: ***Solubility and Water Purity***	**4**	**21**	**10**	**35**
Experiment 2: ***Electrons and Solution Color***	**5**	**31**	**14**	**50**
Experiment 3: ***Redox***	**5**	**35**	**15**	**55**
Experiment 4: ***Acids, Bases, and Salts.***	**5**	**35**	**15**	**55**
Experiment 5: ***Lewis acids and bases.***	**5**	**40**	**15**	**60**
Experiment 6: ***Analysis of Reactions.***	**5**	**30**	**10**	**45**

TOTAL = 300

Each experiment in the lab manual includes grading forms that indicate how points will be awarded (out of 300). You should review these grading guidelines prior to performing each experiment. Note that the later labs (which incorporate skills and concepts from earlier labs) are weighted more heavily (receive more points) in grade determination (see course plan and schedule below).

GSI-Peer Point Points

Up to 50 points are awarded to reflect a student's effort and contributions to his/her team and the course. Points are NOT awarded based on points earned on the exams or team reports. Few students typically earn 100% of these points (or the equivalent of A+ for contributions and effort). A student who makes excellent contributions to his/her team and the course will typically earn approximately 90% of these points. GSI/Peer points are largely based on private feedback that is provided by teammates in the form of mid-semester and end of semester team evaluation forms as well as the observations of your lab instructor. Team evaluations forms are provided in the front section of this manual. The input of your teammates and GSI with regard to your efforts and contributions will be treated as private. GSI-Peer points will not be posted to your record till the term has ended and reflect the following criteria:

- Arrives on time to lab and discussion
- Follows safety rules
- Comes prepared to lab
- Contributes to team efforts during lab
- Puts effort into performing the different team roles (Manage, Technologist, etc.)
- Participates in preparing the team report
- Contributes to team efforts in preparing for discussion
- Contributes to discussion as a presenter
- Contributes to discussion as a listener and an active contributor

Discussion points
You and your teammates will give a PowerPoint presentation about five minutes in length. Discussion grading rubrics are provided within each experiment. Typically about l/3 of assigned points are assigned to 1) clarity of the slide visuals and the graphs used to display and relevant data patterns 2) the clarity and appropriateness of data analysis 3) the clarity of communication of the question and presented results.

Exam points and Final grade
There are two exams in the course. The first exam tests your understanding of the first three experiments and the second exam tests your understanding of experiments 4 – 6. The exams points (150 points) carry l/2 the weight of the lab and discussion points (300 points). Thus an A record with regard to exams alone does not ensure an A in the course. Likewise a record of A relative to lab and discussion points alone does not ensure an A in the course. Because the exams (and, indeed, the entire course) are cumulative, we will drop the first exam score and double the second exam score if you do better on the second exam and have taken the first exam. In the latter instance the first exam score is not removed from your record. Rather, the first exam score remains on your record but is not counted toward total points.

COMMON TEAM GRADING ISSUES

Manager fails to turn in team lab report on time
Team members lose10% of total possible pts per each 24 hrs late (as indicated above) regardless of reasons for late turn in. The manager alone cannot assume responsibility for a late report in lieu of teammates. It is the responsibility of the entire team to make sure reports are turned in on time

Late Team Report Penalties
Late reports lose credit as follows: 1 day late = -10% of possible total experiment points; each additional day late = -10% possible experiment points, up to the maximum points awarded for the report. (Note: 5 minutes late and 24 hours late both count as "1 day late").

Student does not perform lab but team report turned in
Student only earns points for a performed lab (or lab portion). A student cannot earn points awarded to his/her teammates on the team report if he/she did not perform the lab. The student will need to make-up any missed portions of the lab to earn the associated team awarded points.

Late Pre-lab Report Turn in
Pre-lab reports are turned in at the start of a new lab topic on an individual basis. If your pre-lab report is not completed before reporting to lab, you can only receive a maximum of 50% of total pre-lab points. You will be asked to stay outside the lab till the pre-lab is completed.

Late arrival of team member at discussion or lab
Late arrival at discussion can negatively impact on 50 GSI/peer points awarded at the end of course.

Absence of team manager from discussion
Team members must present answer to discussion question in the event of manager absence even if absent manager has the only set of presentation visuals etc. in his/her care. An absent team manager will receive discussion points awarded to team minus one point and the absence can negatively impact on 50 GSI/peer points awarded to the absent team manager at the end of the course.

If a manager misses a 2nd discussion presentation, he/she will be awarded zero points for discussion unless absence is due to an emergency (illness, compulsory attendance at Univ. event, family death…). In the event of proof of emergency the manager will receive points awarded to the team minus one point.

Absence of team member from discussion
The team member who is absent from one discussion will receive same points awarded to the team. The absence, however, will be noted and if appropriate may be reflected in the 50 GSI/peer points awarded for effort/contributions at end of term.

The team member who is absent from a 2nd discussion will receive zero points for discussion unless absence from discussion is due to an emergency (illness, compulsory attendance at Univ. sponsored event, family death…). In the event of proof of emergency (doctor's note…) the team member will receive same points as team.

Incomplete discussion abstract
For full credit the abstract includes: 1) problem recorded 2) what the team determined with regard to the question with one specific example from the data. 3) what the results mean. If 1) is missing – 25% of possible points. If 2) is missing or incomplete = - 50% pts. If 3) is missing – 25% pts.

Late discussion abstract
The grace deadline for abstract submissions is the same as indicated below for team reports.
If an abstract is submitted late 50% of possible points will be deducted. An abstract submitted after discussion, will receive zero points.

EXAMS Winter 2012

Dates and Time
Tuesday March 13, from 6:15 – 7:45 pm and Tuesday, April 17, from 6:15 – 7:45 pm

Exam Rules
- Students are only allowed a pencil, eraser, photo ID, and NONPROGRAMMABLE calculator at their desk. No programmable calculators will be permitted during the exam.
- Do not bring valuables since you will be asked to leave jackets and books at back of room.
- Calculations must be shown to receive credit for numerical answers. No credit will be given for numerical answers only.
- Students will only be allowed to leave the exam room at designated times (30 minute intervals)

Exam Conflict?
Courses OR required university events meeting at the same time are legal conflicts. Any other form of conflict is not a legal conflict.

Alternate Exams
- Alternate exams are only given on the same day as the regularly scheduled exam and only BEFORE the regular exam.
- Available for students with legal conflicts or special needs (large print exams, extended time, quiet room, etc).
- Special need students need to submit an approval form from the Office of Student Disabilities
- If a student has an unexpected emergency (e.g. death in the family) during the time of the regular exam and shows proof of the emergency, he/she will be offered a late alternate exam. In this instance the alternate exam will be different than the regular exam taken by his/her peers.
- Proof of emergency (funeral notice, doctor's note) must be furnished.

Submission of Extended Time Form
Submit your form to the course coordinator (Nancy Kerner; nkerner@umich.edu) at least TWO WEEKS prior to the scheduled exam. ADDITIONAL information must be provided on the form:
- Your e-mail unique name
- Your lab/dis section
- The name of your GSI
- Your schedule for the day of the exam

Signing up for an alternate exam:
E-mail nkerner@umich.edu with a cc to his/her GSI at least TWO WEEKS prior to the scheduled exam and indicate:
- Your home lab/dis section and GSI
- The nature of the legal conflict and or special need (e.g. time and half extended time…)
- Your schedule for the day of the exam between 8am and 6pm.

LAB REPORT INFORMATION

Report Turn in directions

	When?	Team vs. Individual?	Where?	Comments
Pre lab report	Due at start of new experiment	Individual	Hand to GSI upon entering lab	
Team lab report	Due at the start of the next dis/lab session post completion of an experiment	Team – One copy per team	Hand to GSI upon entering lab	- Don't forget to print the class data before leaving lab - ALWAYS use SPECIFICexamples from the data to support answers!
Discussion	Presentation: Typically one week after experiment completed.	Team	In discussion room/lab first hour of the week after the experiment completion	Give abstract for assigned question to GSI as indicated (lab or on-line)

LAB CHECKOUT PROCEDURE for early Drops

When a student drops Chemistry 125/126, he/she must checkout of lab. Failure to checkout will results in a charge (about $30) and credit withheld. The student needs to checkout of lab ASAP. The procedure described below must be adhered to

1. Student reports to the Atrium level chemstand window and indicate he/she has dropped the course and wish to checkout.
2. Student provides Chemstand personnel with his/her name, lab drawer number, and lab section and room.
3. Chemstand personnel will provide the student with an appropriate drawer equipment checklist card and a white shortage slip.
4. Student returns to lab to <u>inspect and clean all equipment</u> in drawer
5. Students lists all equipment that is missing or broken on the white shortage slip
6. GSI inspects the lab drawer and signs white shortage slip to acknowledge that checkout is completed or the missing or broken equipment has been replaced.
7. Student returns to Chemstand window to:
    a. hand in GSI signed shortage slip if all equipment is present <u>OR</u>
    b. retrieve all shortage equipment and return it to drawer
        i. upon returning equipment to drawer, GSI initials the shortage slip again
8. GSI makes sure that drawer is locked
9. Upon completed lab checkout the Chemstand personnel will:
    a. complete green receipt in ink and give it to student for their record
    b. note on the student's information card that they have checked out, so they don't get billed

Schedule Chemistry 125/126
Winter 2012

#	Experiment Topics	Dates Pre-Lab Lecture	Dates Laboratory *Discussion**	Pre-lab Reading Pages	Lab Points
	Check-in **Safety Scavenger Hunt** **Team Task Exercise** **Periodic Table Scavenger Hunt**	1/10 (200 sect) 1/12 (100 sect)	**1/12-1/13** (200 sect) **1/13&1/17**(100 sect)	1 –21 230 -243	
1	**Precipitation and Water Purity** 1. What is the Precipitate? 2A. Is Precipitation Predictable? 2B. Can I Identify it? And (instructor assigned) 3. Water Purity & Conc. Studies. or 4. Solvent Polarity and Precipitation.	1/17 (200 sect) 1/19 (100 sect)	**1/19-1/20**(200 sect) **1/20&1/24**(100 sect) *1/26-1/27 (200s)** *1/27 & 1/31 (100s)**	22-53 190-191 208-211	35
2	**Solution Color** 1. Preparation and Color of Salt Solutions. 2. Wavelength Color 3. Solution Color and Light Interaction. 4. Concentration and Light Absorption 5. What is the sample concentration?.	1/24 (200 sect) 1/26 (100 sect) and 1/31 (200 sect) 2/2 (100 sect)	**1/26-1/27** (200 sect) **1/27&1/31**(100 sect) and **2/2-2/3** (200 sect) **2/3&2/7** (100 sect) *2/9-2/10 (200s)** *2/10&2/14 (100s)**	54-79 192-199	50
3	**Redox: Transferring Electrons** 1. Reactivity of Metals. 2. Reactivity of Halogens & Halides. 3. Analysis of redox reactions.	2/7 (200 sect) 2/9 (100 sect) and 2/14 (200 sect) 2/16 (100sect) no lectures 2/21 and 2/23	**2/9-2/10**(200 sect) **2/10&2/14**(100 sect) and **2/16-2/17** (200sect) **2/17 and 2/21**(100sect)* ***3/8-3/9 (200s)**** ***3/9 & 3/13 (100s)**** *U vacation (2/25-3/5) No100labs, 2/24 & 2/28 & 3/2, No 200labs, 2/23 & 2/24 & 3/1 & 3/2	80-110 212-218	55
	Hourly I Tuesday, March 13 Optional Reviews: Sat., March 10, 11 am – 1pm; Mon., March 12, 6:30-8:30 pm Rooms TBA (and on CTools)		**6:15 - 7:45 pm**	**Rooms TBA**	

Chemistry 125/126 Winter 2012 (page 2)

#	Experiment Topics	Dates Pre-Lab Lecture	Dates Laboratory *Discussion**	Pre-lab Reading Pages	Lab Points
4	**Acids, Bases and Salts** 1. Structure and acid-base properties. 2. Conjugate acid-base pairs. 3. Neutralization and Indicators. 4. Quantitative Studies of Neutralization. 5. Identification of an unknown acid.	3/6 (200 sect) 3/8 (100 sect) and 3/13 (200 sect) 3/15(100 sect)	**3/8-3/9 (**200 sect**)** **3/9 &3/13(**100sect) and **3/15-3/16** (200 sect) **3/16&3/20**(100 sect) *3/22-3/23(200s)* *3/23&3/27 (100s)*	111-139 199-202 219-222	55
5	**Lewis acids & bases** 1. Acidity of cations & the Periodic Table 2. Complexation Reactions 3. Solubility Equilibria and Complexation 4. Investigations of a Reaction.	3/20 (200 sect) 3/22 (100 sect) and 3/27 (200 sect) 3/29 (100 sect)	**3/22-3/23** (200 sect) **3/23&3/27**(100 sect) and **3/29-3/30** (200 sect) **3/30&4//3**(100 sect) *4/5-4/6 (200s)** *4/6 &4/10 (100s)**	140-171 223-226	60
6	**Analysis of Reactions**	4/3(200 sect) 4/5 (100 sect)	**4/5-4/6**(200sect) **4/6&4/10** (100sect) *4/12-4/13 (200s)* *4/13&4/17 (100s)*	172-181	45
	Checkout		**4/12-4/13** (200 sect) **4/13&4/17**(100 sect)		300

Hourly II Tuesday, April 17 **6:15-7:45 pm** **Rooms** **TBA**

Hourly II optional Reviews:

1800 chemistry:

E4: 4/12 ; E5: 4/14

Mon., April 16, 6:30-8:30pm, Room TBA

LAB ABSENCE AND MAKE-UPS

Since the course is cumulative it is important that you not miss a lab. If you miss a lab it is preferable to make-up the lab with your home GSI. Most GSIs teach two lab sections. Arrangements for one make-up in your home GSIs other section may be made directly with your GSI. If such an arrangement is not possible, you will need to arrange for a make-up by e-mailing chem125makeups@umich.edu and provide the information indicated on the following pages.

Make-Ups

There are several points regarding make-ups that you need to understand:

1. Only one lab make-up is allowed. You must, however, makeup the missed lab to earn points. If you miss more than one laboratory you will need to speak with the course coordinator for permission to stay in the course. Most students in this situation are asked to drop the course.
2. You will receive a zero for a missed laboratory (or portion of a laboratory) that is not made up.
3. You have two weeks to make up a missed lab. It is best to do your make-up during the same week that the experiment is still being conducted so you can perform the experiment with a team.
4. The only experiment that may be performed as a makeup post April 5th is E6 (the final experiment). There are NO make-ups allowed at all during check (April 12 - 17). If you miss the last lab prior to check out, it will only be possible to schedule a make-up during your next enrolled term.
5. University safety regulations restrict the available space for make-ups. We cannot guarantee that you will be able to make-up a particular laboratory.
6. You are expected to report to the make-up laboratory at the appointed time. If you do not appear within a reasonable time (15 minutes), your spot may be given to another student.
7. Whenever possible schedule a make-up during the same week as the missed lab. You will not suffer as much since the same experiment is performed in all sections in a given week. This will allow you the benefit of discussing the experiment with peers rather than working in isolation.
8. Before reporting to a make-up laboratory, you need to report to the Chemical Dispensing Stands. You will be given papers for the supervising GSI to fill out.

Permission and credit for make-up

If you miss a lab or know you will miss a lab and need to arrange a make-up and you cannot makeup the lab in your home GSIs other section, e-mail chem125makeups@umich.edu and provide the information indicated on the next page in the make-up form. You will be contacted via email as to when and where to report to your makeup lab. Bring the completed make-up form to the Chemical Dispensing Stands before reporting to the make-up laboratory. The stand will retain this form and provide you with a form for the supervising GSI to fill out. This process officially indicates that you are performing a make-up and allows you to receive credit for the make-up.

LAB Check-out and breakage procedure

1) All students must check in and check out of lab. Failure to check-out will result in a charge (about $30) and credit withheld.
2) Excess breakage charges must be paid at the Chemistry Stands.
3) See lab checkout procedure for early drops above.

Laboratory Makeup
Chemistry 125/126
Winter 2012

Important Information

- Each laboratory room is limited to 24 students. This means that during some parts of the term it may not be possible to schedule makeup laboratories during your open times. You must therefore be flexible when scheduling a make-up.
- Labs are held:
  8 am – 11 am on Tuesdays
  11am – 2 pm on Tuesdays, Thursdays, and Fridays
  2 pm – 5 pm on Tuesdays, Thursdays, and Fridays
- No makeup labs will be scheduled during check-out (post April 12).
- Only experiment 6 may be performed as a makeup post April 5
- You will receive a zero for a missed laboratory that is not made up.
- You are only permitted to make-up one laboratory! You must contact the course coordinator if you miss a second laboratory.

To makeup a lab, follow these instructions **exactly**:

1. Email the following address: chem125makeups@umich.edu
2. In your email, include:
   - Your full name
   - Which lab you are making up
   - Your regular GSI's name, email address, and section number
   - All dates and **times within the next two weeks** you are available for a makeup.
3. You will be contacted via email as to when and where to report to your makeup lab. **You must bring the completed form on page 250 with you when you report to makeup your lab**. This is your "ticket" to make-up the lab.
4. **Failure to report for makeup within 15 minutes at the start of lab may result in your makeup appointment being canceled. Don't be late!**

CHEM 125/126 Laboratory Makeup Approval Sheet

PRESENT THIS FORM TO YOUR MAKEUP INSTRUCTOR

Student should fill out the following information in this box:

Name: _____

ID number _____

Original Section Number _____

Original Class Meeting time _____

Original GSI _____

Date of laboratory that was missed: _____

Exp. being made up (Exp. number): _____

Student fills out the following with the information from the authorization email received in reply to the makeup request.

Number of section you're assigned to for makeup _____

Date and Time of makeup section_____

Name of makeup GSI:_____

GSI Authorization:

This student is authorized to make up one laboratory.

Signed: _____

Printed name:_____

Date: _____

Present this completed form to the instructor supervising the makeup.