

Chemistry 102L: General Chemistry Laboratory
Spring 2012 Saint Francis University

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Lab Section:	Tues/Wed (S319) 1:15--5:00	Mon(S319) 1:15–5:00
Web site:	http://faculty.francis.edu/sdillon	

**There is no required text for laboratory this semester. Labs will be posted on Blackboard prior to lab. It is the student's responsibility to prepare for lab.

****Preparing for lab does not mean 15 minutes before lab.****

MATERIALS:

A bound notebook, weekly student packets on Blackboard (BB), and safety goggles are required for all laboratory sessions. If all materials are not brought to each lab period then credit may not be earned. *Goggles are required for every lab. Failure to bring goggles to lab will result in a 2pt deduction from your lab report grade.* Approved safety goggles and your bound notebook may be purchased at the campus bookstore.

**Note: You may be asked to share lab drawers with another student in your section. Your drawers are locked after you leave the lab, however, please be sure your name is written on your goggle strap to avoid confusion.*

ATTENDANCE:

Completion of all labs is mandatory. If you miss a lab for any reason that lab must be made up within one week of the missed lab period with approval from your lab instructor

If you are unable to attend for reasons that present themselves the day that you are scheduled to attend lab; you must contact your instructor immediately via email and let them know the reason for the absence. The email should also indicate if you are able to make another section later in the week. Your instructor will get back to you ASAP to let you know if you are allowed to come to another section. **The best option for making up a missed lab is to attend one of the other sections conducted the same week.**

All missed labs require the completion of the Make Up Request Form (MURF) located on BB. The days and times of the other sections are listed on the MURF and on the syllabus. Once the MURF has been submitted to your instructor they will let you know if the request is approved. **Any assignments that were due the day you missed must be turned in ASAP to your instructor to avoid late penalties (penalties will follow the late policy listed below).**

If you are unable to attend one of the other sections then special arrangements must be made with your lab instructor the same week of the missed lab to schedule a the make-up lab date and time.

If you are absent for more than 3 days from classes and/or are sent home, you must notify your instructor upon your return to campus and provide your instructor with a medical excuse. You will be given 7 days upon your return to school to submit your work. Any work submitted after those 7 days will follow the late policy below.

If you know ahead of time that you will not be able to make your regularly scheduled lab: Complete the MURF and turn it in at least one week prior to the lab to be missed. **Assignments that are due the day you will miss should be turned in before the lab is missed.**

LABS NOT MADE UP WITHIN ONE WEEK WILL RESULT IN A ZERO UNLESS A MEDICAL EXCUSE IS PROVIDED!!

ACADEMIC HONESTY:

Honesty and respect are very important aspects of St. Francis University. Even though you are encouraged to work together in lab, this does not give you permission to copy one another's work. Copying word for word or changing one or more words from another person's work or published work is considered cheating/plagiarism. If you are caught cheating/plagiarizing, you will face penalties and may fail the entire class, not just lab. (Please consult student handbook on academic honesty).

Referencing sources: Any time you use material from either a lab packet, text, and/or the internet, you **MUST** cite the information properly throughout your report. The internet is not a "free source of information." Failure to reference materials properly will result in grade reduction and submission of a letter in your academic file.

If you have a documented disability that requires assistance, you should go to the Center for Academic Success (CAS) for coordination of your accommodations. CAS is located in room 102 of St. Francis Hall, and the phone number is 814-472-3176. Any requests for special needs or special accommodations should be made at the beginning of the semester or as soon as you become aware of your needs.

LAB GRADES:

For each lab completed this semester, you will receive three scores (quizzes, notebook, and lab reports). These scores will be added together to determine your grade for the experiment.

The notebook will be graded during every lab period. The Title, Objective, and Experimental Procedure for that day's experiment, and data charts (done before you get to lab!) as well as the Data, Observations and Calculations from the previous lab will be checked.

Your final lab grade will be forwarded to your course instructor. The lab grade constitutes 15% of your final course grade. You must receive a passing grade (70%) in the laboratory. If you do not achieve a passing grade, you will receive an "F" for the entire course. Any discrepancy on your lab reports should be discussed with your lab instructor within 24 hours after receiving graded reports.

TURNING IN WEEKLY ASSIGNMENTS:

If a lab report for the experiment conducted the previous week is due the following week, it is due prior to the pre-lab lecture (Before 1:15PM). Turn in all work to the podium at the front of the class. This means that you need to have your report in your hand when you enter the laboratory. Not being able to print is NOT an excuse. Any assignment turned in after lab begins will be considered 10% late. Any work turned in 24 hours after the assignment is due is considered 25% late, 48 hours after the assignment is due is 50% late. Any work not turned in after 72 hours after the assignment is due will not be accepted unless a doctor's excuse is submitted.

LABORATORY QUIZZES:

Each week when you enter the laboratory, you will be given a quiz worth 10 points. You will have 10 minutes to complete the quiz. Students who arrive to lab after the quiz has been passed out will not be given any additional time to complete the quiz.

In preparation for quizzes: Each experiment completed this semester will include a background/introduction section. This section of the lab introduces the main ideas/topics that the lab is focused on. Some introductions may even be assigned reading from your lecture text. All of the experiments also contain either a practice quiz or a list of possible quiz questions. Reading the background and doing the practice questions should adequately prepare you for the in class quiz. **Even if the topic of the lab has not been covered in class you have enough info in the intro/background/pre-lab exercises to complete the quiz.**

NOTEBOOK:

Scientific work can be no better than the records, which are kept of it. Each student is required to keep a bound notebook. **ALL OBSERVATIONS, DATA, AND CALCULATIONS SHOULD BE RECORDED INTO YOUR NOTEBOOK WHILE CONDUCTING LAB; NOT AFTER LAB!**

Think of your notebook as your data collection center and you are working on a patent for a new multi-million dollar product. The production of your new product relies on what you record in your notebook.

General notebook rules:

- Record your notes in blue or black ball-point ink (not pencil).
- Errors in entries should be corrected by placing a single line through the error and then initialing the correction. Wite-out is not permitted in the notebook
- Each page should be numbered at the top right hand corner with a circle around the number
 - This should be started on the 4th page of the NB
- Please only use the front of each page as work can be duplicated onto the next page.
- Your work should be dated. Neatness is desirable, but it is less important than having a notebook that is accurate and complete.

Initial Notebook Setup: (Will be check and graded during the 2nd lab period!!)

1st Page of the NB: (not labeled as pg 1)

- Should have “Table of Contents” on the top line
- Should have heading for Experiment #, Experiment Title, Date Completed, Pages on the second line

2nd Page of the NB: (not labeled as pg 2)

- Should have “Preface” on the top line
- Skip a line and write a preface for your NB
 - A preface is a paragraph that explains what the NB will be used for and should answer the following questions: What class? What type of information will be recorded?
How does this class relate to your major?

3rd Page of the NB: (not labeled as pg 3)

- Should have “Table of Abbreviations” on the top line
- This page will be used to explain any abbreviations that you use in your NB
- Ex: & = and or HPLC = High Pressure Liquid Chromatography

4th Page of the NB: (label as pg. 1 in the top right hand corner with a circle around the number)

This where you will begin entering info for the experiment conducted during the 2nd lab period.

- You should list the experiment title on the very top line.
 - You should record the date the experiment is completed and the first and last name(s) of your lab partners (spelled correctly) that you are working with for that day.
- You should then write the Objective of the laboratory
 - The objectives of the lab are the various tasks/calculations/procedures that should be understood upon completion of the lab.
 - Each section of the lab (in the book/student packet) has an objective listed
- You should then write a summary of the Experimental Procedure.
 - The procedure should outline what you are to do in lab in detail where it could be reproduced without the lab manual **BUT MUST BE IN YOUR OWN WORDS!**
 - It should be separated into sections like the full procedure in the book
- After the procedure is the Data Section. This is where you will record data charts in preparation for collecting data, observations, and measurements made during the lab period.

*****Objective, Experimental Procedure, and Data Charts that will be filled in during lab for each experiment must be completed in the notebook BEFORE entering the lab the day that particular experiment is to be completed*****

Lab Reports: This semester you will generate three different types of lab reports.

On the Fly Reports (80pts): Will be generated as you conduct the experiment and are due by the end of the lab period. As you perform the lab procedure you will record data and observations directly into your NB. Upon completion of each section of the lab you will then transfer the collected data into a Word document on your laptop. Each section will also have some accompanying questions that will need to be answered as part of the report. These questions are termed “Q questions” and can be found in the student packet. The Q questions will be anything from calculations to short answer discussion questions about the experiment. You are not required to answer the Q questions in your NB but are encouraged to use the NB as a rough draft for your answers or calculation attempts.

On most labs of this type you will be working with partners to perform the procedure and collect data. This means that certain portions of the report that you each generate will be very similar (data tables / calculations). Other portions of the report, such as answers to certain Q questions, should be written in your own words. This does not mean that you are not allowed to work together and discuss the questions, but it does mean that you should come up with your own words to convey the answer to the question. Please have your name / partners name / experiment title / date at the start of your report.

*****On the Fly Reports will be completed in the laboratory; not in the hallway or ROCK room*****

Short Reports (80pts): Will be generated after the completion of the lab. During the lab period you will record all data and observations directly into your NB. Once you have completed the lab you will then use the “Report Sheet” to complete your lab report. The report sheet is located in your student packet and serves as a guide to writing your lab report. It will tell you what information to include and where to include it. It will also have questions that you will need to answer as part of a discussion of the experiment that you conducted.

All short reports should be typed and must contain the following:

Title Page:

- Title of experiment
- Your Name / Your Lab Partner(s) name(s)—must be spelled correctly
- Chem 102 Laboratory and day and time you have lab (Monday 1:15–5:00)
- Date lab report is due / Lab Instructors Name—must be spelled correctly

Results: Observations, Data, Calculations

- Include specific data / calculations required on the report sheet (experiment specific)
- Must show sample calculations (only one of each type)
- Tables / Graphs / Figures should have meaningful titles and labels

Discussion: Interpreting what the data means

- Include the answers to questions on the report sheet with well written complete sentences
 - Answers should be given in a way that allows the reader (me) to understand what you are talking about (not just yes/no answers)
 - Proof of answers should be referenced from the collected data

Conclusion: Summarizing the objectives and stating major findings

- You should state if the objective was accomplished.
 - Use specific data to support or refute the objective.
- Include answers to any questions from the report sheet

All short reports will be generated on an individual basis. Certain parts of the report will be similar to your lab partners (data / calculations) but all answers to discussion and conclusion questions should be in your own words!

Formal Reports (150pts): For two of the experiments that we do this semester you will generate a formal report. This type of report is most similar to what professionals in the field would generate based on their research/experiments. It is the format that is required for submission of findings to all major academic journals. It is very similar to the short report format, but with a few additional sections. For this type of report you will also be given a report sheet to follow.

All formal reports must contain the following:

Title Page: exactly the same as for the short report

Introduction: Provides background information about the experiment that was conducted

- Provides the importance of the investigation
- Provides the reader with information necessary to understand the investigation
- Clearly defines the objectives of the experiment and how they were investigated
 - What was done and why was it done
- Similar to the introduction/background that is given in the lab text

Experimental Procedure: This is what you DID in lab.

- Information should have enough detail that another person could duplicate the lab.
- Should be in past tense and should include all sections that you actually completed in lab

Results: exactly the same as for the short report

Discussion: exactly the same as for the short report

Conclusion: exactly the same as for the short report

GRAMMAR AND SPELLING:

Before submitting, all lab reports (partial or formal) should be proofread. Spell Check is often insufficient, so please review your work prior to handing in. Pronouns (such as I, WE, SHE, HE, THEY, THEM, or THEIR) or names should not be used in the lab report or in lab notebooks.

Keep in mind you are writing in scientific style.

Instead of stating: *“I massed 2.3 g of salt and put it in the beaker and Zach put in about 20 mL of water.”*, the sentence should state: *“A balance was used to weigh out 2.33 g of sodium chloride. The sodium chloride was then placed in a 100mL beaker containing 19.9 mL of water.”*, or *“Sodium chloride (2.33g) was dissolved in 19.9 mL of water.”*

USE OF SUBSCRIPTS AND SUPERSSCRIPTS:

The use of superscripts and subscripts are to be denoted properly. An example of proper use of a subscript would be H_2SO_4 , not $H2SO4$. Proper use of superscripts and subscripts are required in all lab reports. Failure to use proper super or sub scripts will result in point deduction.

PROTECTING YOUR WORK:

It is highly suggested that you never send electronic copies (email attachments) of your reports to other students. It is very easy for someone to cut and paste your work as their own if they have your lab report file. Remember that both parties, the sender/author and the receiver/copier, are equally responsible in this situation and could potentially both receive a zero for the report!

LABORATORY PRACTICAL (150pts):

The General Chemistry 102 Laboratory Instructors have tentatively scheduled a laboratory practical for the week of 4/16/12. Student attendance is required.

Student participation, preparation, and lab grades will be taken into consideration in determining if the practical is given

LABORATORY PERIODS and COMPRESSED SCHEDULE

In the event that there would be a snow delay, the Compressed time will apply to labs.

Day	Location	Reg. Time	Instructor	Compressed Time
Monday	S319	1:15–5:00	Paul Johns	1:45–5:00
Tuesday	S319	1:15–5:00	Mrs. Susan Dillon	1:45--5:00
Wednesday	S319	1:15–5:00	Mrs. Susan Dillon	1:45–5:00

LAB REPORT SCHEDULE

****This is a flexible schedule and may need to be amended throughout the semester****

Week Of	Experiment Title	Experiment Location	Type of Lab Report	Lab Report Due (week of)
1/9/12	Syllabus/Safety/Check-In Molecular Modeling Revisited	Student Packet	On the Fly	—
1/16/12	Introduction to Green Chemistry	BB	On the Fly	—
1/23/12	Paper & Liquid Chromatography	BB	Short	1/30/12
1/30/12	Gas Chromatography	BB	Formal	2/6/12
2/6/12	Colligative Properties: Molecular Weight by Freezing Pt Depression	BB	Short	2/13/12
2/13/12	Flex Week			
2/20/12	Kinetic Blues: Rate Laws/Activation Energy	BB	Short	2/27/12
2/27/12	Equilibrium Constant	BB	Short	3/12/12
3/5/12	Spring Break: No Labs			
3/12/12	Acid/Base Reactions	BB	Short	3/19/12
3/19/12	Properties of Buffers	BB	Formal	3/26/12
3/26/12	Thermodynamics	BB	On the Fly	—
4/2/12	Electrochemistry M & T labs only	BB	On the Fly	—
4/9/12	Electrochemistry Wednesday lab only	BB	On the Fly	—
4/16/12	Check Out and Practical (Optional) Attendance Required			