

CHE129 – Basic Chemical Concepts Laboratory
Syllabus and Guidelines* for Fall 2011

Course Web Page http://condor.depaul.edu/~qshelby/AY11_12/A11_CHE129/CHE129Default.html

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 Office Hours: MW 11:30 am – 1:30 pm in McGowan South 307

Lab Time and Location Fridays 2:40 pm – 5:40 pm in McGowan South 305

Textbook and Materials

Required for the laboratory:

- Hayden-McNeil Laboratory Notebook (spiral bound), ISBN 1-930882-74-2 (available at the bookstore)
- Lab Manuals, Prelab Instructions, Lab Report Rubrics (downloadable from the CONTENT tab after login at <https://d2l.depaul.edu/>)
- Goggles, Sellstrom Safety (Product # SF88210), Superior Industrial Supply Co. (available at the bookstore)
- Non-graphing, non-programmable calculators. Suggested models include:
 - TI-30X family of calculators (available at the bookstore)
 - CASIO fx-260solar or CASIO fx-250HC

Recommended for the laboratory:

- Apron – Yellow Hycar 27x36 w/Eyes & Tie (Product # CH536HY), Superior Industrial Supply Co. (available at the bookstore)

Course Overview and Objectives

CHE 129 laboratory is a required component for the lecture course CHE 128. The laboratory experiments you will perform will reinforce material presented in lecture and allow you to explore lecture topics in more detail. Specific learning objectives for each experiment can be found in the laboratory manual. You will be assessed based on your level of preparedness, accuracy, laboratory technique, data analysis, and overall understanding of the experiments. Your results, analysis, and understanding will be presented in laboratory reports. At completion of this lab course, you will be able to:

1. Perform chemical calculations and follow written procedures
2. Understand and safely conduct experimental operations
3. Collect and analyze experimental data
4. Communicate chemical concepts through lab reports

The laboratory is a critical component of your education as a scientist. Because of the importance of the laboratory, you will be required to pass the laboratory portion of the class with a score of C- or better in order to pass the course. In addition, if you have two or more laboratory absences for invalid reasons, you will fail the course.

Online Safety Training

DePaul University Laboratory Safety Training is mandatory before you will be allowed to participate in lab. You must complete the lab safety training once an academic year, and the Safety Office has developed an online-version of the safety training that is found at

<https://www.itd.depaul.edu/auth/login.asp?prevURL=/InstructionBuilder/>

You will need to use your Campus Connection ID and password to log in. You must complete this training by 2:00 PM on Friday, September 16, 2011 in order to be allowed to conduct the experiments for the course. On the first day of lab, you must submit a print-out that documents your passing grade for the safety training

Attendance

Attendance is required at each laboratory session. You will automatically *fail* the course if you have two or more absences from lab. *Make up labs will not be given.* If you miss lab for reasons that are deemed acceptable by the Dean of Students or that are due to athletic competitions (documentation must be presented at the beginning of the course) then you will be excused from the associated laboratory experiment; and the average score of the remaining laboratory scores will be entered as the score for the excused lab score. Only two of the laboratory experiments can be excused.

The lab period will begin and end promptly. You will need to budget your time carefully to complete experiments in the time allotted. You will not be given extra time to complete the experiment if you arrive late, and you may lose points on your laboratory report or receive other sanctions as determined by the laboratory instructor.

Preparation for Lab

A careful reading of the laboratory procedure is required before performing an experiment. The lab procedure can be downloaded from the CONTENT tab after login at <https://d2l.depaul.edu/>. You should have a clear understanding of the theory behind the experiment, the reaction(s) that will be studied, and any data analysis and/or calculations that must be completed. In order to ensure that you are prepared for the laboratory experiment, you will be asked to both complete a pre-laboratory assignment and to prepare your lab notebook.

Pre-laboratory Assignments

In order to gain entrance to the lab, you must submit a *completed pre-laboratory assignment* (your admissions ticket) to your lab instructor or TA. The pre-lab assignments can be downloaded from the CONTENT tab after login at <https://d2l.depaul.edu/>. In general, these assignments are designed to help you think about the chemical principles behind the experiment and to expose you in advance to the types of calculations that are a part of that day's experiment.

Laboratory Notebook

Before the lab period begins, the experimental procedure must be recorded in the lab notebook, which is a spiral bound notebook that may be obtained from the bookstore. Make sure that you write your name on your notebook and supply any other pertinent contact information that can be used to return the notebook to you in case it is lost.

Your notes from studying the lab manual should be detailed enough so that you can complete the lab without using the lab manual. The instructor or TA will spot-check your notebook before you enter the lab. *No laboratory manuals/procedural print-outs will be allowed in the lab.* It is recommended that you set up the necessary data tables in your notebook ahead of time so that you are prepared to record everything you will need to complete the calculations for the lab. This will greatly increase the efficiency of the laboratory experiment. Arriving late and/or unprepared will negatively impact your laboratory evaluations. *The instructor has the authority to ask unprepared students to leave the lab, leading to an unexcused absence and a grade of zero for that lab experiment.*

The instructor or TA will spot-check your notebook before you enter the lab. *No laboratory manuals/procedural print-outs will be allowed in the lab.* You will not be allowed in lab until your notebook is properly prepared with the following.

- Date of the experiment
- Title of the experiment and reference for it
- Purpose of the experiment
- The procedure for the experiment (**not** a word-for-word copy of the lab manual contents, but your notes that will allow you to complete the experiment)

All data recorded in the laboratory notebook must be recorded in black or dark-blue ink only. Notes taken in pencil, particularly if they are overwritten in pen, will reduce the laboratory notebook score. You will be making a carbon copy of your data. Make sure your carbon copies are clear and legible. Press hard and use the inside flap of the notebook to protect other sheets. **NEATNESS COUNTS!** The TAs and instructors will verify your data and calculations. If the instructors cannot read your data sheets because of bad penmanship, organization, or other neatness factors, your report grade may suffer.

If a mistake is made, make a neat line through the word or words so they remain legible. Scrap paper notes will be confiscated and not returned. Make sure that the instructor or TA signs your notebook at the end of each lab period, and you must submit the related notebook carbon copies of your data. This does not mean that the instructor or TA has approved your method of taking data. Original pages (blue) should never be torn from the notebook. The notebook should retain an intact sequence of numbered blue pages. Copy pages (yellow) will be submitted to the instructor or TA at the end of each lab. Carbon copies will not be accepted after you leave the laboratory for the day. Please be aware that your laboratory notebook is subject to inspection to verify and authenticate your experimental observations.

At the end of lab, your notebook pages must contain any and all pieces of information needed to obtain final results for the experiment. Such information includes, but is not limited to:

- The name of your laboratory partner, if applicable
- A detailed list of procedural changes

- Clearly written data with *proper significant figures* and *units*, in tabular form
- Clearly written calculations with proper significant figures and units

The burden is on you to make sure you have all of the data that is necessary to write a successful laboratory report. Trying the calculations before leaving lab will help make sure that you have all of the necessary data.

General Laboratory Guidelines, Rules and Etiquette

1. If you are pregnant, you must obtain a letter from your obstetrician that states that it is all right for you to conduct experiments during the quarter; and you must submit this letter to your lab instructor.
2. Safety glasses/goggles must be worn at all times in the lab. Contact lenses are prohibited; wear prescription glasses instead.
3. Open-toed shoes, shorts, and excessively loose or flowing clothes are forbidden in lab. You must adhere to the lab attire rules posted on the door to McGowan 331.
4. Long hair must be tied back.
5. Gloves must be worn when handling chemicals. Always wash your hands after each lab, even if you wore gloves the whole time.
6. Assume that chemicals are dangerous unless you know otherwise.
7. Learn the location of emergency equipment.
8. Dispose of waste in appropriately labeled containers only.
9. Work only with clean equipment and glassware (dry) on a clean bench top, and clean up after yourself.
10. Carefully handle and measure appropriate quantities of the reagents needed in the experiment.
11. Use the right chemicals – pay attention to the names of the chemicals that you plan to use. You could cause a serious accident if you mix the wrong chemicals.
12. Never return excess chemicals to the stock bottle.
13. Save all of your solutions and solids until you have successfully completed the experiment.
14. If you don't know or are unsure about any aspect of your experiment, ask the instructor or the TA.
15. Report all personal injuries to the instructor who will assess the wound and summon professional help if necessary.
16. Smoking, eating, drinking, gum chewing, and applying cosmetics in the lab are prohibited.
17. Never use your mouth to pipette a liquid; use a pipette bulb.
18. Manage your time wisely so that you don't rush or take short cuts.
19. Record all data in ink in your laboratory notebook while you work! Do not write data, even temporarily, on scraps or other pieces of paper. Make sure your data is complete. Make sure to record the date or the unknown number, if any.
20. Be prepared for the experiment before you arrive to the lab.
21. Clean up after yourself. Clean your part of the laboratory bench at the end of your stay in the lab. Points will be taken off the lab report grade if the balance room or the laboratory is left untidy.
22. In order to minimize distractions in the lab, please turn off the sound on cell phones and pagers. The instructor reserves the right to ask you to leave the room if you interrupt the class. No computer use/texting is allowed during lab times unless otherwise directed by the instructor.

23. If you fail to adhere to the safety rules you will not be allowed in lab. Your behavior that is deemed by the instructor to be unsafe to yourself or to others will result in your dismissal from that week's experiment. You will not be allowed to finish the lab at a later time.

Laboratory Reports

Writing laboratory reports will allow you with the opportunity to enhance your technical writing and data analysis skills. In order to make laboratory report writing easier, it is highly recommended that you complete all calculations before leaving the laboratory. Furthermore, it is in your best interest to begin writing the lab report as soon as possible after completing the experiment, when the details are still fresh in your mind. Starting early will give you time to ask questions about the experiment before the report is due and ensure that you turn in a polished report. The quality of writing in your report, as well as grammatical correctness, will contribute to your grade. Your lab instructor or tutors from the Writing Center may help you to review/discuss your drafts, correct grammar, etc.

Each week a specific grading scheme (rubric) for that week's lab will be posted on the course webpage. You should *use the rubric to prepare your report* because your instructor will use it to grade your report. It is to your advantage to print out the grading scheme before writing your report, to make sure that you include all of the necessary elements. The rubrics can be downloaded from the CONTENT tab after login at <https://d2l.depaul.edu/>. You are required to download and print this grading scheme and use it as the cover sheet for your report.

You are welcome to visit the Writing Center to discuss your assignments for this course or any others. You may schedule appointments (30 or 50 minutes) on an as-needed or weekly basis, scheduling up to 3 hours worth of appointments per week. Online services include Feedback-by-Email and IM conferencing (with or without a webcam). All writing center services are *free*.

They will not do your work for you, but they can help you focus and develop your ideas, review your drafts, and polish your writing. They can answer questions about grammar, mechanics, different kinds of writing styles, and documentation formats. Obviously, the tutors won't necessarily be familiar with every class or subject, but they are able to provide valuable help from the perspective of an interested and careful reader as well as a serious and experienced student-writer.

Late Policy

No late work will be accepted. Laboratory reports are typically due one week after the completion of an experiment. They must be submitted to the laboratory instructor upon entry to the laboratory session unless otherwise indicated. *Electronic copies of reports will not be graded.* In instances of valid absences from lab, the student must make every effort to deliver the previous week's report on time. If it is impossible to deliver a hard copy of the report on time, an electronic version should be sent to the instructor before the start of the lab. A hard copy must then be delivered as soon as possible to the laboratory instructor (or placed in the instructor's mailbox in the chemistry department office), and it must match the electronic version, otherwise it will not be graded. The hard copy of the report must be received before the next laboratory period.

Laboratory Resources

The lab instructor and teaching assistant both have office hours during which they can answer questions regarding pre-laboratory assignments, calculations from a lab, the writing of lab reports, etc. The writing of lab reports may be a new experience for you. If you have questions regarding formatting, organization, etc., you should refer first to the posted rubric for the lab. If you still have questions, you should contact the lab instructor or the teaching assistant. With enough notice, they may be able to look over a rough draft of your report and make suggestions.

In addition, the Center for Writing has tutors familiar with writing lab reports that can help you revise a rough draft. You are welcome to visit the Writing Center to discuss your assignments for this course or any others. You may schedule appointments (30 or 50 minutes) on an as-needed or weekly basis, scheduling up to 3 hours worth of appointments per week. Online services include Feedback-by-Email and IM conferencing (with or without a webcam). All writing center services are *free*. They will not do your work for you, but they can help you focus and develop your ideas, review your drafts, and polish your writing. They can answer questions about grammar, mechanics, different kinds of writing styles, and documentation formats. Obviously, the tutors won't necessarily be familiar with every class or subject, but they are able to provide valuable help from the perspective of an interested and careful reader as well as a serious and experienced student-writer. In all cases, it is important to schedule an appointment several days before your report is due. Quick Links & Locations for writing help are:

- To schedule an appointment at the Center's LPC and Loop locations: <http://condor.depaul.edu/~writing/html/sched/WCOnline.html>
- To schedule Real-time conversations with IM and/or webcam: <http://condor.depaul.edu/~writing/html/sched/im.htm>
- To request Feedback by Email: <http://condor.depaul.edu/~writing/html/sched/email.html>
- Loop Campus Office: 1620 Lewis Center, 312.362.6726
- Lincoln Park Office: 250 McGaw, 773.325.4272
- For more information, visit: <http://www.depaul.edu/writing/>

Evaluation

There are eight laboratory exercises, where each exercise has a pre-lab assignment, a written report, and a laboratory category (preparedness, goggle use, etc.), which together are worth 40 points according to its associated lab rubric. Only your highest seven scores will be used when computing your total score in the class, and the following equation will be used to calculate your grade at the end of the quarter:

$$\text{Grade Percentage} = 100 * (\text{SUM of 7 Lab Exercises}) / 280$$

After the first day that graded lab exercises have been returned during class, you have one week to appeal possible grading errors *in person with report in hand*. There are no make-ups for missed labs. Keep in mind that if you have *two or more laboratory absences you will fail the course*. Any issue not explicitly discussed here will be handled at the discretion of the laboratory instructor.

Grading Policy

At the end of the quarter, individual grades will be set according to the total grade percentage scale:

Grade	Percentage
A	92.5 – 100
A-	89.5 – 92.4
B+	86.5 – 89.4
B	82.5 – 86.4
B-	79.5 – 82.4
C+	76.5 – 79.4
C	72.5 – 76.4
C-	69.5 – 72.4
D+	66.5 – 69.4
D	59.5 – 66.4
F	Below 59.5

Incomplete Grades

Grades of Incomplete are granted only in cases of medical emergency or other highly unusual emergency situations. If such a situation should occur and you wish to request an incomplete grade, please inform the instructor as soon as possible. Please note that University guidelines require that you must be earning a passing grade and that you should have completed most of the course at the time of your request. Incompletes revert to an F if they are not resolved within one quarter.

Academic Integrity

Academic dishonesty and plagiarism are not tolerated at DePaul. You are expected to submit the results that you actually obtained on your own, and to do otherwise would be a violation of the university's academic integrity policy. Violations of the Academic Integrity Policy will be treated on an individual basis, with the sanction imposed ranging from a zero on the assignment to receiving an F in the course. Additional disciplinary actions by university officials may also be taken. You should read and become familiar with the DePaul University Academic Integrity Policy (<http://academicintegrity.depaul.edu/AcademicIntegrityPolicy.pdf>). Cheating, fabrication of data and plagiarism will be handled according to the procedures outlined in the Student and Faculty Handbooks. Copied work of any kind will not be tolerated. Submission of identical work will be given a zero on the assignment and all parties involved will be referred to the Associate Vice President for Academic Affairs and the Dean of the Student's home college.

It is acceptable for you to paraphrase information from a source, however, several of you are doing so incorrectly. Paraphrasing is not copying a sentence and changing a word or two; this is plagiarism. In general, when you paraphrase you should read a paragraph, close your book, and write what you just read in your own words. It would be better for you to not write a section of your report and have points deducted than for you to paraphrase or cite a reference incorrectly and get reported to the Office of Academic Integrity. Please visit the FAQs webpage

(<http://academicintegrity.depaul.edu/FAQ/ForStudents/index.html>) for helpful information about proper citation and paraphrasing of another's work.

Student Services

If you need (or think you may need) accommodations and services for a physical disability, a learning disability or attention deficit disorder, then you are encouraged to contact the PLS Program and/or the Office for Students with Disabilities (Student Center, Suite 370, Phone: 773-325-1677, TTY 773-325-7296) as soon as possible to benefit from their services. Because of the PLS program's confidentiality policy, you must inform your instructor of your participation in the program in order to receive accommodations in the course.

If you develop health or personal issues that interfere with your academic performance, you are strongly encouraged to contact the Dean of Students Office (<http://studentaffairs.depaul.edu/dos/index.html>) and one of their staff members will advocate for you regarding accommodations for missed laboratory experiments.

Building Evacuation Plan

Although we rarely need to evacuate McGowan South, an accident may occur that would require us to do so. If your lab section must evacuate the building during your laboratory period, please use the east stairs (on the left side of the main elevators) to exit the building. Our meeting location will be in front of the parking lot, which is across Belden Avenue from the McGowan South building. Please go to this specific location so that your laboratory instructor and TA will know that you made it out of the building safely.

Tentative Laboratory Schedule for CHE129

For an electronic copy of the syllabus and for links to laboratory material, please refer to the lab web site: http://condor.depaul.edu/~qshelby/AY11_12/A11_CHE129/CHE129Default.html

DATE	EXPERIMENT	Lab Report (Due 2:40 pm)
September 9	No Lab	
September 16	1 – Measurements and Lab Check In	
September 23	2 – Density	Report 1 Due
September 30	3 – Use of Volumetric Glassware: Floating Egg Problem	Report 2 Due
October 7	4 – Avogadro's Number	Report 3 Due
October 14	5 – Stoichiometry of a Reaction	Report 4 Due
October 21	6 – Precipitation Stoichiometry	Report 5 Due
October 28	7 – Lewis Dot Structures and Molecular Models	Report 6 Due
November 4	8 – Heating Curve of Water and Lab Check Out	Report 7 Due
November 11	No Lab	Report 8 Due

*This syllabus provides procedural details and a tentative outline of the material in the course. In this document, "you" refers to CHE129 students. Any situation not covered in this document will be handled at the discretion of the instructor.