

CHEM 2045L – General Chemistry 1 Laboratory (1 credit)

Room JHH-110, at Joseph Hernandez Hall

Spring 2018

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| Teaching Assistant | to be assigned during first laboratory meeting |
| Course Coordinator | Dr. Simon E. Lopez, Sisler 329B (352) 392-9700, simonlopez@chem.ufl.edu Please use email if you need to arrange an appointment |
| Lab Manager & Evening Lab Manager: | Donna Turner & Candace Biggerstaff. Contact: Room JHH-110 at the Joseph Hernandez Hall Building or through: lss.at.ufl.edu (Canvas). |
| Websites | Please see Canvas site (http://lss.at.ufl.edu) |
| Co-/Pre-Requisites | Detailed information and credit suitability can be found in the UF Undergraduate Catalog. |

GENERAL INFORMATION OF THE COURSE:

CHM 2045L meets once a week in room JHH-110 at the Joseph Hernandez Hall Building. The general objectives of this course are to introduce you to common laboratory techniques and equipment used in a General Chemistry Laboratory, to help you gain understanding and proficiency in their use, to help you explore the process of doing experimental chemistry, and to illustrate representative examples of the useful and important topics you are learning in CHM 2045 lectures.

**...LABS BEGIN THE WEEK OF JANUARY 15TH: TUESDAY, JANUARY 16TH
(ATTEND YOUR REGULAR SESSION)...**

FIRST DAY OF LAB – CHECKING IN:

On the first day of lab, you must have the following items with you to check into the lab:

- Lab Notebook (See Lab-Notebook on Canvas). Our standard recommendation is a Composition Notebook.
- You will have access to the Canvas site of the course through the General Chemistry Lab computer available at your work station, however, you should bring also (recommended) printed material where you can read the Procedure available in Canvas for the corresponding Lab.
- A USB thumb drive. For some Labs (not the first), you will be generating data. To take it home with you for manipulation and analysis a thumb drive will be necessary.
- UF Chemistry Department approved eye protection. UVEX S 2500-S2530 plastic safety glasses (available at UF bookstore or Florida Bookstore) or full safety goggles *must* be used as these can cover prescription glasses. Avoid the use of contact lenses in the Lab.
- Proper Attire.
- Towel and sponge (for clean up).
- Non erasable Ink pen. All entries in the Lab Notebook must be made in indelible ink. No pencil writing will be allowed.

You must be wearing department approved safety glasses or goggles and be properly attired to be admitted to the laboratory at all times, even on the first day of lab. Please check the Canvas site (see General information and Safety modules inside Canvas) for information on attire and details about the types of eye protection approved for use in this lab. Anyone without the necessary materials (listed above), the proper safety glasses, or who is inappropriately attired will not be allowed in the lab.

**Please read through the policy information in this syllabus before coming to the first lab
and refer to it to answer your questions throughout the semester.**

Prior to attending the first (and each subsequent) lab period, you must familiarize yourself with the lab background and procedure and complete the Pre-Lab quiz. You should also make relevant notes and tables in your lab notebook and print a copy of the procedure if needed – **paper/print copies of the manual are not provided.**

On the first day of lab, you will be assigned to a lab bay, meet your TA, and be assigned to your laboratory workstation.

Read and complete the Safety Contract before the Introductory Lab and Lab 1 (see the Canvas site).

At the beginning of the session, your TA will use a transportation car to deliver all the lab material, supplies and equipment you will use during the lab session. You must clean and dry all those employed materials, and equipment before you leave the lab and return them back to the transportation car or to the place where you find them arriving using the same order where they were placed originally, ask your TA for any detail. Be careful when you manage all the equipment and glassware. If any glassware is broken during the lab session, communicate it immediately to your TA. Costs for all the broken and damaged material during the semester will be charged to the whole class, so please be conscious.

SAFETY

You are responsible for reviewing the safety information provided in Canvas. All of the activities worth credit for the course will be locked in Canvas until you satisfactorily **complete the Safety Contract** (must be completed on the Canvas site by 11:59pm on January 15th, no extensions).

LOGISTICS / CLEANLINESS

You will work within a small group to complete the laboratory activities. You should check your group's glassware for cleanliness before beginning the lab. Your group must wash the glassware/equipment and your workstation before leaving. You may not sign the attendance sheet until your TA has checked your station. If any glassware is broken during the lab session, communicate this immediately to your TA.

GRADING

Your grade will be determined by your experimental work done while in the laboratory - the data, observations and calculations that you record in your lab notebook, combined with your grades on quizzes (safety, syllabus, pre-lab and post-lab).

Grades will be determined from the following factors:

Labs 1-10: 90% (10 Labs, 9 % each lab):

- Each Lab (1-7, 9-10) evaluation contains: Pre-Lab quiz (2%) + Lab Notebook (5%) + Post-Lab quiz (2%).
For Lab #8 (Lambert-Beer & Chemical Kinetics), you should complete a section called "To do before Lab #8" (0.5 %) + Pre-Lab quiz (1.5%) + Lab Notebook (5%) + Post-Lab quiz (2%).

Introduction Lab quiz 2%

Safety quiz 4%

Syllabus quiz 4%

Total: 100%

Grade scale (note: there is no rounding to your score in Canvas):

| Letter | A | A- | B+ | B | B- | C+ | C | D+ | D | D- | E |
|--------|------|------|------|------|------|------|------|------|------|------|--------|
| Cutoff | 90.0 | 87.0 | 84.0 | 77.0 | 73.0 | 70.0 | 62.0 | 59.0 | 56.0 | 50.0 | < 50.0 |

UF policies for assigning grade points can be found on the Registrar's website.

Explanation of Grade Breakdown:

- The **Labs (1-10)** grade consists on the combination of your evaluated Pre and Post-Lab quizzes, and the Lab-Notebook for each Lab session (see also penalties for late submission of Lab Notebooks below). Follow the indications given for each lab session in the Canvas site of the course, and check the point values for the items to be evaluated in the corresponding lab. The only exemption is Lab #8, were you should complete a section called "To do before Lab #8" (0.5 %) and for this only lab, your pre-lab quiz = 1.5 %.

- Online **Introduction Lab quiz** will consist on the evaluation on your knowledge about basic information received during the Introduction Lab session. No make-ups will be available for this particular lab session, attendance is obligatory. This **Introduction Lab quiz**, will be available **on the Canvas site** immediately after the lab session ends and will be locked next week-day at 11:59 pm.
- Online **Safety quiz** will consist on the evaluation on your knowledge about the safety regulations required to work in the Lab. You can find and read the information (watch also the safety video) about the safety regulations in the Canvas site of the course (check: CHM2045L General Information > Safety and CHM2045L Safety). **Note: The online safety quiz must be completed on the Canvas site by 11:59 pm on Jan 15th. No extensions.**
- Online **Syllabus quiz** will consist on the evaluation on your knowledge about the Syllabus of the course. Read careful all the details contained in the syllabus to be prepared for this quiz. **Note: The online Syllabus quiz must be completed on the Canvas site by 11:59 pm on Jan 15th. No extensions.**

REGRADES: LAB NOTEBOOK

The lab notebook is graded during lab period (in some cases, depending on the time extension of the lab, your TA will grade your Lab-Notebook later but before your next session). Communicate any lab notebook grade disputes to your TA during the lab period and your TA will address your concerns at that time and make any necessary corrections during the lab period. If your TA finds it necessary to re-grade your lab notebook, he/she will correct the grade on your notebook and on his/her grade sheet immediately. A rubric for each Lab Notebook grading will be available only *in person* during your TA's CLC office hours (upon request). Rubrics are prepared by Dr. Simon E. Lopez.

REGRADES: PRE- AND POST-LAB QUIZZES

Please contact Dr. Simon E. Lopez through Canvas with the question of interest. Be specific – quiz title, question title or number, and quiz attempt, to facilitate the process.

All re-grade decisions are final.

LATE PENALTIES

You are expected to attend lab during your scheduled lab period, and leave the lab when your lab period ends. Everyone in this course is given the same amount of time to complete these experiments. If you are well prepared, you should have no problem finishing the experiments within the allotted time. **You may not stay late or come in during another lab section to do your experiments.**

You will find a schedule at the end of this syllabus that shows this semester's experiments, along with the due dates for assignments. Any student who is late leaving the lab or turning in an assignment will have the following penalties assessed:

Late leaving the lab loss of 1 point on Lab-Notebook grade for that experiment.

Late penalties for Lab-Notebook submission-uploading: You must upload your lab Notebook in Canvas using the uploading system + indications provided, not later than 11:59 pm of the immediate next week-day of your lab session (this means the due date).

After the due date, penalties will be the following:

48h later the due date (or any period of time in between): -2.5 pt.

After 48h later the due date: 0 pt. (no credit will be given-*no exceptions*)

ATTENDANCE, MISSING LAB, AND DROPPING THE COURSE

Attendance in the General Chemistry lab is critical for this course. Each laboratory period, you will learn techniques and concepts that will continue to be important throughout the semester. It is essential that you be present and prepared for lab each time that it convenes.

Your TA will take careful attendance each lab period while circulating during the lab period and grading notebooks. You must sign your name on the attendance sheet during each lab period – *this is your responsibility*, not the TA's. If you aren't sure whether or not you've signed the attendance sheet, check with your TA and do so before leaving.

If you are not in attendance you will receive a score of 0 for your Lab Notebook for that period, as well as for all assignments pertaining to the lab exercise, with the exception of the Pre-Lab Quiz, for which attendance is not required. If you do not attend lab but complete the other assignments for the lab exercise, your TA will replace any erroneous grades with a grade

of 0 after reviewing the attendance records. **The signed attendance sheet is the official attendance record – make sure you sign each lab period!**

Students who must miss lab due to extreme circumstances beyond their control may submit a request for **make-up** within 7 days (this means if you miss a Tuesday lab, you must submit your request by next Monday (max.) contacting Dr. Lopez during his office hours (personally), of the missed lab period. Please understand that personal issues with scheduling conflicts such as volunteering, work, non-emergency dentist or doctor appointments, extracurricular activities, or travel, do not justify an excused absence. To have a request considered for approval, you must (1) provide a completed request form, available in the Canvas site – and bring the filled form to your coordinator (Dr. Simon E. Lopez) to his office (during office hours, personally); and (2) request an excuse note from the Dean of Students Office. We have the Dean of Students Office verify excused absences for us. They do so in a confidential manner, and simply inform instructors that an excused absence due to health reasons or family emergency has occurred. See the Dean of Students Office website for details. After 1 week, the absence will be considered unexcused.

Emailed requests to “preview” excused absences will be ignored; it should be very clear what constitutes an excused absence. If you know in advance that you will need to miss a lab session, please submit your request as early as you can, even in advance to Dr. Simon E. Lopez (bring the requested filled forms in person, during his office hours). Requirements for class attendance and make-ups in this course are consistent with university policies that can be found in the [Undergraduate Catalog](#).

Any student who missed **more than three** lab sessions (excluding religious observances), whether excused or unexcused, will receive a grade of E in the course. The first excused absence for a student will be rescheduled during make-up week at the end of term during your regular lab period.

If you decide to drop the course before the end of the term, please arrange to check out of your lab workstation **BEFORE** you drop the class. Check with the stockroom manager for a good time to check out.

LABORATORY NOTEBOOK/SUMMARIES

Before you come to lab, carefully read through the assigned experiment, complete your Pre-Lab quiz and prepare your Lab-Notebook according to the information provided in the Canvas site (see CHM2045L General Information > Lab Notebook) Be sure to consider the following items when preparing your notebook:

- Your Lab-Notebook should be unique for the course. Despite there is no specific brand for your Lab-Notebook, bring a Composition Notebook.
- The Lab-notebook must be pre-numbered (each page in the top corner right or left)
- The notebook must be kept in non-erasable, waterproof ink (preferably ballpoint)
- All errors must be crossed out with a single line – no scribbles or white-out!
- Do not skip or tear out pages – cross out with an X if the entire page is incorrect
- Experiments must have titles and include the dates that they are performed
- Include the names of your teammates (if applicable)
- Accuracy and truth are more important than neatness
- All entries must be made while the experiment is conducted.

CELL PHONES, CALCULATORS, AND OTHER ELECTRONIC DEVICES

Cell phones, tablets and laptops are not permitted for use in the laboratory (only exemptions are emergencies, in the case of cell phones). Access to Canvas inside the General Chemistry Lab (Joseph Hernandez Hall 110) will be provided through the General Chemistry Labs computers located at your workstation. You can also bring printed pages of the procedure to be employed in the lab. ***NO PRINTED MATERIAL WILL BE GIVEN TO YOU IN THE LAB, IT IS YOUR RESPONSIBILITY TO BRING YOUR MATERIAL PRINTED IF YOU DECIDED TO.***

i-Pods, MP3 players, and any other personal electronic devices are also not permitted for use in the laboratory.

All cell phones and other devices must be silenced and stored in the lab entryway.

If you must make an emergency call during the lab period, please take your phone into the hallway outside of the lab.

You will need to use a calculator many times during this course. You should bring a calculator with you to class.

UF POLICIES:

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES:

Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking exams. Accommodations are not retroactive, therefore, students should contact the

office as soon as possible in the term for which they are seeking accommodations. The student is responsible for scheduling the exam dates with the DRC.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT:

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida. The following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php>.”

FEEDBACK:

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu>.

CHM 2045L Course/TA Evaluation: Usually, the Evaluation will be conducted at the start of Lab Session 10. All students are to participate.

GENERAL EDUCATION

This course satisfies the General Education requirement in the Physical Sciences.

PHYSICAL SCIENCE GENERAL EDUCATION PROGRAM OBJECTIVES:

Physical science courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the physical sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern physical systems. Students will formulate empirically-testable hypotheses derived from the study of physical processes, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.

These objectives are accomplished through participation in the course lectures and discussion sections, and individual work done on homework assignments and assessments.

GENERAL EDUCATION STUDENT LEARNING OUTCOMES:

| Area | Institutional Definition | Institutional SLO |
|--------------------------|---|---|
| CONTENT | Content is knowledge of the concepts, principles, terminology and methodologies used within the discipline. | Students demonstrate competence in the terminology, concepts, methodologies and theories used within the discipline. |
| COMMUNICATION | Communication is the development and expression of ideas in written and oral forms. | Students communicate knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to the discipline. |
| CRITICAL THINKING | Critical thinking is characterized by the comprehensive analysis of issues, ideas, and evidence before accepting or formulating an opinion or conclusion. | Students analyze information carefully and logically from multiple perspectives, using discipline specific methods, and develop reasoned solutions to problems. |

Naturally, all three areas of learning outcomes will be assessed in all categories of graded assignment administered in CHM2045L.

Makeups additional information:

During M: 4/16/18 - R: 4/19/18 , students missing one Lab session for excusable cause from Lab 1 thru Lab 10 can make up the Lab session during regular Lab time. Students needing more than one makeup may schedule such contacting Dr. Simon E. Lopez, after they follow-up all the instructions given previously for make-ups in this Syllabus.

Out-of-class help for Gen. Chem students:

Will be provided on a regular daily basis in the **Chemistry Learning Center (CLC)** which is **JHH 105**. (*Do not eat, drink, or socialize in the CLC*). All General Chemistry TAs conduct their office periods in CLC. So, note your TA's office periods, and, if you need out-of-class help but cannot contact your TA, you may request help from any CHM2045L TA who is on duty in the CLC. A help-schedule will be posted on Canvas and help will generally be available throughout the week. *But do check the help-schedule.*

Final Note:

*Please report the name of any **CHM2045L** TA absent from scheduled CLC duty to Dr Lopez, complaints/conflicts/questions on grades, etc. If you experience issues with CHM 2045L (ex: questions on grading) which you cannot resolve with your TA, in person see Dr. Lopez at Sisler 329. and do not wait until the end of the term to resolve an ongoing problem!*

Disclaimer

This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.

-See the course schedule on next page-

University of Florida
CHM 2045L, General Chemistry
Lab 1, Spring 2018
Course Schedule

Lab Coordinator: Dr. Simon E. Lopez, 329 Sisler

Hall (Office). E-mail: simonlopez@chem.ufl.edu

E-Learning (Canvas): <https://lss.at.ufl.edu/> (will be updated regularly)

Text: CHM 2045L General Chemistry Laboratory (See Canvas)

Lab location: JHH-110, Joseph Hernandez Hall.

Office Hours: M (12:30 – 2:30 p.m.), W (12:30 – 2:30 p.m.), and R (12:30 – 2:30 p.m.) in 329 Sisler Hall.

| Week of: | Lab Number | Content | Important Notes |
|------------------------|----------------------|---|---|
| Jan 15 th | Introduction | Check-in + Introduction | Attendance obligatory Monday students will do a make-up of this first session on Jan 22 nd (M). |
| Jan 22 nd | 1 | Measurement & Density | Monday students will do make-up for first session (Introduction) this week. Monday students will do make-up for Lab 1 on March 26 th (M). |
| Jan 29 th | 2 | Basic Stoichiometry & Introduction to Green Chemistry | - |
| Feb 5 th | 3 | Limiting Reactant & Precipitation Lab | - |
| Feb 12 th | 4 | Redox Stoichiometry | - |
| Feb 19 th | 5 | Gases | - |
| Feb 26 th | 6 | Thermochemistry – Coffee Cup | - |
| March 12 th | 7 | Introduction to Chemical Kinetics | - |
| March 19 th | 8 | Lambert-Beer & Chemical Kinetics | - |
| March 26 th | No Labs for T-R | Monday students will do make-up for Lab #1 | - |
| Apr 2 nd | 9 | Molecular Structure & Geometry | - |
| Apr 9 th | 10 | Solutions – Colligative properties | - |
| Apr 16 th | <i>Make-ups week</i> | M,T,W,R | - |

Holidays (No classes): January 15th (Dr. Martin Luther King, Jr.' day), March 3rd -10th (Spring Break).