CHM 2046L General Chemistry II Laboratory
Summer B 2016 Syllabus

Instructional team contact information—this is a multi-section coordinated course

Lab Section and Meeting Time: ___________________________________________

Your Lab TA name and contact information (will be shared during the first day of classes)

For routine communication please contact your section TA directly

Lab Section and Meeting Time: ___________________________________________

Laboratory Course Coordinator: Dr. Laura Anderson, landers6@usf.edu

Office Hours: T: 1:30-2:30 p.m. Bioscience Building-BSF 316 or by appointment.

Course description

This course is a continuation of your introduction to the science of Chemistry from the point of view of practicing chemists! Based on the premise that science should be taught as it is practiced the lab will be a place where you, along with your group members, will have an opportunity to get familiar and confident with chemistry methods by applying them to address practical questions. We hope you continue progressing on having such an experience from your first semester of general chemistry.

You will work on several projects throughout the semester in which you will plan, experiment and evaluate your own chemical procedures and results. Each of these projects revolves around main concepts, techniques, and activities relevant to chemistry in many areas of human activities\(^1\), such as: product quality control, prediction of chemical and physical behavior of substances, among others.


You will engage in activities in and out of the laboratory that aim to help you meet the learning goals of the chemistry laboratory:\(^2\)

Enhancing mastery of subject matter; developing scientific reasoning; understanding the complexity and ambiguity of empirical work; developing practical skills; understanding the nature of science; cultivating interest in science and interest in learning science; and developing teamwork abilities.


Make sure you read the documents IN YOUR LAB MANUAL or IN CANVAS for detailed descriptions of the lab activities and course objectives for the chemistry laboratory. These documents are created to help you succeed in this class; so take advantage of them!

Materials and supplies

1. Laboratory Manual: This contains all the experiment guidelines and other important information regarding the labs. The lab manual is available at the USF Bookstore only.
2. Laboratory Notebook: This is for you to take notes in the lab and it must have duplicate sheets. You may purchase this lab notebook from the USF Bookstore or from any other vendor.
3. Safety goggles of the chemical-splash goggle design are required. If you do not have splash-proof goggles, you will be asked to leave the lab.
4. Lab Attire: *Lab coats are required for this course* and you need to get a white basic protection lab coat with tight fitted wrists in order to continue with the course. See picture below for a sample.
5. **Recommended materials:** laptop and calculator. When possible bring a laptop to class. Many times you will be asked to look for information online and the more resources your group has the easier it will be to get the work done.

**Safety Rules**
The departmental safety rules, explained during the first meeting, must be followed when working in the laboratory. You will not be allowed to work in the laboratory if you violate any of the safety rules. The lab coat must be worn all the time while you are in the lab regardless of the activity you are performing, including during peer review, oral or poster presentations.

**NOTES:**
1. A copy of the *Laboratory Safety Rules* document is provided in the lab manual. You will be required to read and sign this document (*Student Laboratory Agreement*) and submit it to your TA no later than the second class meeting!
2. Students must watch a safety video online and take a mandatory safety quiz during the second day of classes. All students must score minimum 8/10 in the safety quiz in order to continue with the course.
3. After each lab session, students should place their lab coat in a plastic bag to minimize chemical exposure and avoid contamination of other persons or objects outside the lab.
4. Any laboratory accidents or near misses must be reported immediately to your TA. Other safety-related concerns can be addressed to your TA or to the USF Environmental, Health and Safety (EH&S) Office at: [http://usfweb2.usf.edu/eh&s/labsafety/LabIncident.html](http://usfweb2.usf.edu/eh&s/labsafety/LabIncident.html)

**Attendance**
CHM 2046L is scheduled for a 2-hour and 50 minute period twice a week. Students may attend laboratory only in the section for which they are registered. Proper written documentation (hard copy) must be provided to the TA no later than the following lab meeting in order to justify an absence. A single absence due to legally documented illness, death in the immediate family, call to active military duty, court-imposed legal obligations (e.g., jury duty and subpoenas), special requirements of other courses and university sponsored events (e.g., performances, games/meets, judging trips, field trips), and severe weather condition will be excused. Family and employment schedules, transportation issues, athletic training/practice schedules of students do not comprise a valid excuse and count as an unexcused absence. All USF students can visit the on campus student health services and obtain a doctor’s note in case of illness.

Due to the nature of the course, any additional excused absence due to the reasons above will be addressed on individual basis by the Lab Coordinator to determine the possibility of a makeup lab. More than two excused absences will significantly impact the lab performance and the student will be required to contact the Lab Coordinator directly to consult about incomplete grades (see policy below), medical withdrawal, or attendance accommodations for students with disabilities or student athletes.

Unexcused absences due to tardiness, failure to adhere to safety rules, leaving the lab earlier without your TA’s approval, or to reasons not outlined above will be determined as follows:

- First unexcused absence will result in zero credit for the day’s activity plus a 25% reduction for the project’s overall grade.
- Second unexcused absence will result in zero credit for the day’s activity plus a 50% reduction for the project’s overall grade.
- More than two unexcused absences will result in a failing grade regardless of the reason.

In any case, it is the student’s responsibility to catch up with any missed work and submit other assignments on time.

**Tardiness:** excessive tardiness will not be accepted. It is mandatory to be on time and ready to work when your laboratory begins. Your instructor will take attendance as soon as your class period starts. Moreover, it is necessary for students to be present and participate in class work in the entirety of the class duration. Any students arriving more than 15 minutes late will be counted absent (unexcused) and will be turned away from the lab.
Detailed description of student activities and evaluation

Project preparation and pre-lab planning

Pre-lab planning: Student groups are provided with a summary of each project either in your laboratory manual or through pdf and media files on Canvas. Using the guiding questions given for each project as your guide, the ‘lab tool box’ on Canvas, and your textbook and other sources you consider useful you must prepare a detailed research plan prior to working in each upcoming session. These guiding questions are essential to your planning and preparation for each lab. Make sure your plan includes safety precautions and important details of the techniques. A pre-lab plan must be prepared individually and turned in at the beginning of the lab period (submit a carbon copy). Then, during the planning time (usually 30-45 min at the end of each lab period) your group will go over the individual plans and elaborate a single plan (one per group) to be submitted and graded by the TA. All group members will receive the same score. If you do not submit your individual pre-lab plan at the beginning of the class you will receive a 50% reduction from the pre-lab points earned by the group. Group collaboration prior and during class will be essential. Note that project preparation work will precede all laboratory sessions and time will be allocated to allow more group planning at the latest part of the lab session and prior to leaving the lab in anticipation of the next session (see detailed Laboratory Schedule last pages). Students must stay in the lab and work as a group to utilize this class time. Leaving the lab earlier without TA’s approval will automatically count as an unexcused absence regardless of the time spent in the lab that day. Note that even though this is an outcome of much group effort students will receive an individual evaluation from their instructor per project.

Online pre-lab quiz: Each project will have an online quiz assignment available through Canvas (see detailed Laboratory Schedule for due dates).

In class

Experimental work: The majority of your time in the lab will be spent engaged in hands-on experimental work. During this time, you will carry out your plans to meet the objectives of the specific projects.

Laboratory notebook: Proper notebook keeping, detailed record of amounts used, pre and post lab planning, observations, data tables and processing, useful group discussion points, must be recorded in your laboratory notebook. Your Instructor will provide guidance in good notebook practices and carbon copies of all work will be collected at the end of each lab session.

Student Performance Evaluation: At the end of each project, you will assess the performance and contributions of each member of your group. They will do likewise for you. These evaluations will only be shared between you and your instructor and will be evaluated by your instructor after completion.

Lab Reports

You will be instructed by your TA about specific guidelines, expectations and guidance to good writing and presenting practices in the sciences. Even though collaborative group work and data sharing is strongly encouraged and is essential in each lab activity, each student must produce their own initial and final report for which they will be graded individually. The only lab report sections allowed to be shared among the group members are the results and methodologies. All reports must be typed and are due as indicated in the schedule below. Specific details and resources may be provided to all students via Canvas to support learning how to write effective reports.

Initial Report: You will have the opportunity to obtain feedback on your initial lab report by two or more of your peers outside your group selected by the instructor in a ‘blind’ peer review process. Peer reviewing may occur during class and/or online through a peer review system. Submission of initial (draft) lab reports will be done through the My Reviewers website. Details about the peer review process, including rubrics and grade distribution (15 pts) will be shared in class or through Canvas.

Final Report: You will be required to submit an electronic copy of each final lab report to Canvas (via Turnitin) and to My Reviewers in order to receive full credit. If you miss to submit the final report to one of
these online sites your lab report will be graded on a partial point basis (35 max. out of 50 pts). Lab reports must be submitted by the deadline (see Schedule).

**Oral Presentations and Posters**

These presentations will be completed per group; however, each student will receive individual evaluation by the instructor and peers. Presentation resources may be shared through Canvas to aid all students in preparing to present their work.

**Late submission for any assignment will not be allowed!**

**Student Evaluation**

**Important note:** to earn full number of points per project outlined below each student must come prepared every class in accordance to the project handout and actively participate in all prelab planning, data collection and post planning as well as remain for the entirety of the lab. Oral and poster presentations and lab report grades will reflect total individual effort and it is determined by your TA who will evaluate your pre-laboratory preparation, effort and participation in class and your final report or oral presentation for all weeks allocated per project. **It is a holistic grade!**

**Project grading outline**

<table>
<thead>
<tr>
<th></th>
<th><strong>Project 1 Calorimetry</strong></th>
<th><strong>Project 2 Water Analysis</strong></th>
<th><strong>Project 3 Kidney Stones</strong></th>
<th><strong>Project 4 Equilibrium</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Safety Quiz</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lab Safety Compliance</td>
<td>-</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Pre-Lab Quiz</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Notebook</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Student Performance Evaluation</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Initial Lab Report Peer Review</td>
<td>15</td>
<td>15</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Final Lab Report</td>
<td>50</td>
<td>50</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Oral or Poster Preparation/Presentation</td>
<td>-</td>
<td>20/30=50 (Poster)</td>
<td>20/30=50 (Oral)</td>
<td></td>
</tr>
<tr>
<td>Oral or Poster Presentation Peer Review</td>
<td>-</td>
<td>15</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Total Points</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Percentage to final grade</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
</tr>
</tbody>
</table>

The overall course percentage and final letter grade will be determined by the total points earned per student divided by the total points possible as follows:

- **A+** ≥ 96
- **A** ≥ 92
- **A-** ≥ 90
- **B+** ≥ 87
- **B** ≥ 83
- **B-** ≥ 80
- **C+** ≥ 75
- **C** ≥ 72
- **C-** ≥ 69
- **D+** ≥ 66
- **D** ≥ 63
- **D-** ≥ 60
- **F** ≤ 54

Grades will be posted in Canvas for students after the completion of all parts of each project.

**Incomplete:** The grade of “I” will be given only under exceptional circumstances, such as an extended illness, which MUST be certified by a practicing physician. To receive an incomplete the student must have a passing grade on all completed work up to that point and only if the student is missing a small part of the course. Thus, students who are projected to fail the course cannot receive an incomplete and are advised to drop the course before the appropriate deadline to receive a W. To remove an incomplete grade from the student's records, all requirements must be completed within one academic semester; otherwise the “I” will automatically be replaced with an “IF.” Be advised that an incomplete contract MUST be discussed with the laboratory coordinator (Dr. Anderson) prior to obtaining an incomplete grade otherwise the student will receive an “F” regardless of the circumstances.

**S/U policy:** No S or U grades will be given for this course.
**Academic Dishonesty:** will be handled as described in the student handbook. A description of the University grading policies and academic policies can be found in the following link: [http://www.ugs.usf.edu/pdf/cat0910/08acapol.pdf](http://www.ugs.usf.edu/pdf/cat0910/08acapol.pdf) (pages 47-77).

**Religious Observances:** Any student who anticipates the necessity of being absent from lab due to the observation of a major religious observance must provide notice of the date(s) to the teaching assistant, in writing, at least two (2) weeks in advance ([http://www.ugs.usf.edu/policy/ReligiousDays.pdf](http://www.ugs.usf.edu/policy/ReligiousDays.pdf)).

**Disabilities:** Any student with a disability is encouraged to meet with the lab instructor privately as soon as reasonably possible. Accommodations are active from the date of request forward so it is to a student's advantage to make requests early in the semester. Each student must bring a current Memorandum of Accommodations from the Office of Students with Disabilities Services (SDS), which is prerequisite for receiving accommodations. All course documents would be available in alternate format if requested in the student’s Memorandum of Accommodations. Course Coordinator will consult with SDS as needed regarding attendance accommodations or any other specific accommodations ([http://www.usf.edu/student-affairs/student-disabilities-services/](http://www.usf.edu/student-affairs/student-disabilities-services/)).

**Disclosures:** USF has a commitment to the safety and well-being of our students. Please be aware that instructors must report incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence that come to their attention. We are required to report such incidents in order for the Office of Student Rights and Responsibilities or the Office of Diversity, Inclusion, and Equal Opportunity to investigate the incident or situation as a possible violation of the USF Sexual Misconduct/Sexual Harassment Policy, and provide assistance to the student making the disclosure. If you disclose in class or to the Teaching Assistant or Coordinator personally, we must report the disclosure and will assist you in accessing available resources.

The Center for Victim Advocacy and Violence Prevention, the Counseling Center and Student Health Services are confidential resources where you can talk about such situations and receive assistance without the incident being reported. Useful links:

- [http://www.sa.usf.edu/ADVOCACY](http://www.sa.usf.edu/ADVOCACY)

**University-wide Emergency Procedures:** In the event of an emergency, it may be necessary for USF to suspend normal operations. During this time, USF may opt to continue delivery of instruction through methods that include but are not limited to Canvas, Skype, and email messaging and/or an alternate schedule. It is the responsibility of each student to monitor the Canvas site for each of their classes for course-specific communication, as well as check the main USF, College, and Department websites, emails, and messages for important general information.

Hurricane season is here. Please click on the following link for more details:


**Laboratory Schedule:** A detailed laboratory schedule is shown below. Please pay close attention to the assignments due in and out of class.

**Important Note:** Any change to the schedule or course policy will be announced in class or through Canvas. The Lab Coordinator reserves the right to adjust any of the policies as necessary to address extreme circumstances for individual cases.
### Laboratory Schedule Summer B 2016 - Monday and Wednesday Labs

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Week of</th>
<th>In-Class</th>
<th>Assignment Due</th>
</tr>
</thead>
</table>
| **Project 1** Calorimetry | June 27th | - Check-In, Group Activity, Safety Rules  
- Team Planning Week 1-Project 1 | - Watch lab safety video at home |
| | June 29th | - In-class Lab Safety Quiz  
- Wet-Chemistry Week 1-Project 1  
- Team Planning Week 2-Project 1 | - Online pre-lab quiz for Project 1  
- In-class Lab Safety Quiz  
- Submit individual pre-lab plan for Week 2 - Project 1 |
| | July 4th | Independence Day  
No Labs on Monday ONLY! | |
| **Project 2** Analysis of Florida Well Water and USF’s Water Supply | July 6th | - Wet-Chemistry Week 2-Project 1  
- Planning Initial Lab Report for Project 1 | |
| | July 11th | - In-class Peer Review of Initial Lab Report for Project 1  
- Team Planning Week 1-Project 2 | - Submit initial lab report Project 1 online to the My Reviewers system  
- Submit student performance evaluation form for Project 1  
- Submit individual pre-lab plan for Week 1-Project 2 |
| | July 13th | - Wet-chemistry Week 1-Project 2  
- Team Planning Week 2-Project 2 | - Online pre-lab quiz for Project 2  
- Submit individual pre-lab plan for Week 2-Project 2 |
| | July 18th | - Wet-chemistry Week 2-Project 2  
- Team Planning Week 1-Project 3 | - Submit individual pre-lab plan for Week 1-Project 3  
- Submit final report for Project 1 online (via Turnitin in Canvas and to My Reviewers)  
- Plan Lab Report for Project 2 at home |
| **Project 3** Kidney Stones | July 20th | - Wet-chemistry Week 1-Project 3  
- Team Planning Weeks 2 and 3-Project 3 | - Online pre-lab quiz for Project 3  
- Submit initial lab report Project 2 online to the My Reviewers system and do peer review at home by July 22nd midnight  
- Submit individual pre-lab plan for Weeks 2 and 3-Project 3  
- Submit student performance evaluation form for Project 2 |
| | July 25th | - Wet-chemistry Weeks 2 and 3-Project 3  
- Team Planning Poster Sections for Project 3 | - Submit final report for Project 2 online (via Turnitin in Canvas and to My Reviewers) |
| | July 27th | - Poster Presentation for Project 3  
- Team Planning Weeks 1 and 2-Project 4 | - Submit individual pre-lab plan for Weeks 1 and 2-Project 4  
- Submit student performance evaluation form for Project 3 |
| **Project 4** Equilibrium | August 1st | - Wet-chemistry Weeks 1 and 2-Project 4  
- Team Planning Oral Presentation for Project 4 | - Online pre-lab quiz for Project 4 |
| | August 3rd | - Oral Presentation for Project 4 | - Submit student performance evaluation form for Project 4 |

*Any changes to the schedule will be announced in class or through Canvas.*
<table>
<thead>
<tr>
<th>Project Name</th>
<th>Week of</th>
<th>In-Class</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project 1</strong></td>
<td>June 28th</td>
<td>- Check-In, Group Activity, Safety Rules</td>
<td>- Watch lab safety video at home</td>
</tr>
<tr>
<td>Calorimetry</td>
<td>June 30th</td>
<td>- In-class Lab Safety Quiz</td>
<td>- Online pre-lab quiz for Project 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Wet-Chemistry Week 1-Project 1</td>
<td>- In-class Lab Safety Quiz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Team Planning Week 2-Project 1</td>
<td>- Submit individual pre-lab plan for Week 2</td>
</tr>
<tr>
<td></td>
<td>July 5th</td>
<td>- Wet-Chemistry Week 2-Project 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Planning Initial Lab Report for Project 1</td>
<td></td>
</tr>
<tr>
<td><strong>Project 2</strong></td>
<td>July 7th</td>
<td>- In-class Peer Review of Initial Lab Report</td>
<td>- Submit initial lab report Project 1 online to the My Reviewers system</td>
</tr>
<tr>
<td>Analysis of Florida</td>
<td></td>
<td>for Project 1</td>
<td>- Submit student performance evaluation form for Project 1</td>
</tr>
<tr>
<td>Well Water and USF's</td>
<td></td>
<td>- Team Planning Week 1-Project 2</td>
<td>- Submit individual pre-lab plan for Week 1</td>
</tr>
<tr>
<td>Water Supply</td>
<td>July 12th</td>
<td>- Wet-chemistry Week 1-Project 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Team Planning Week 2-Project 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>July 14th</td>
<td>- Wet-chemistry Week 2-Project 2</td>
<td>- Submit individual pre-lab plan for Week 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Team Planning Week 1-Project 3</td>
<td>- Submit final report for Project 1 online (via Turnitin in Canvas and my Reviewers)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Plan Lab Report for Project 2 at home</td>
</tr>
<tr>
<td><strong>Project 3</strong></td>
<td>July 19th</td>
<td>- Wet-chemistry Week 1-Project 3</td>
<td>- Online pre-lab quiz for Project 3</td>
</tr>
<tr>
<td>Kidney Stones</td>
<td></td>
<td>- Team Planning Weeks 2 and 3-Project 3</td>
<td>- Submit student performance evaluation form for Project 2</td>
</tr>
<tr>
<td></td>
<td>July 21st</td>
<td>- Wet-chemistry Weeks 2 and 3-Project 3</td>
<td>- Submit individual pre-lab plan for Weeks 2 and 3-Project 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Team Planning Poster Sections for Project 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>July 26th</td>
<td>Poster Presentation for Project 3</td>
<td>- Submit final report for Project 2 online (via Turnitin in Canvas and my Reviewers)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Team Planning Week 1-Project 4</td>
<td>- Submit individual pre-lab plan for Week 1-Project 4</td>
</tr>
<tr>
<td></td>
<td>July 28th</td>
<td>- Wet-chemistry Week 1-Project 4</td>
<td>- Submit student performance evaluation form for Project 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Team Planning Week 2-Project 4</td>
<td></td>
</tr>
<tr>
<td><strong>Project 4</strong></td>
<td>August 2nd</td>
<td>- Wet-chemistry Week 2-Project 4</td>
<td>- Oral Presentation for Project 4</td>
</tr>
<tr>
<td>Equilibrium</td>
<td>August 4th</td>
<td></td>
<td>- Submit student performance evaluation form for Project 4</td>
</tr>
<tr>
<td></td>
<td>August 5th</td>
<td>[August 5th is the last day of classes]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Final grades are due August 9th</td>
<td></td>
</tr>
</tbody>
</table>

*Any changes to the schedule will be announced in class or through Canvas.*