

Chemistry 4010/6010 Laboratory Syllabus Fall 2019

Instructor: Prof. Ning Fang **Email:** nfang@gsu.edu

Office: NSC 243 **Phone:** 404-413-5513

Office Hours: as needed, by appointment

Lab hours/location: Friday, 9am – 12:15pm, NSC-240

Text: Chem 4010/6010 Laboratory Manual; Course Lectures

Midpoint: October 15th (the last day to drop the class with a W)

Laboratory Attendance:

Students are expected to attend all laboratory sessions. State law requires that you sign-in and sign-out for each laboratory session that you attend. Pre-lab lecture starts at **9am** and takes 20-30 minutes. Students are required to **arrive on time**. Those who miss the lecture may not be allowed to perform the experiment that day.

Students need to follow GSU's **Laboratory and Safety Rules**. These will be presented by the Lab Coordinator on the first lab session.

- Safety glasses/goggles must always be worn in the lab.
- Appropriate lab attire is required.
- No food, drinks, gum, cell phone usage in the lab.

Make-up Labs:

Due to the limited space and number of instruments necessary to perform the experiments make-up labs are **not allowed**, unless you have a legitimate excuse for missing a lab. After obtaining an approval from the instructor the student must take the missed lab within one week of the scheduled lab date and before the final exams week. Students must make prior arrangements with the instructor who is going to provide the make-up lab.

Laboratory Notebooks:

A bound notebook (no spiral notebook or notepad) is required for the laboratory sessions. The notebook will contain 1) table of content, 2) prelab lectures notes, 3) experimental data records, observations and calculations. Also, three notebook reports will be included (see the Lab Schedule Table). The instructor will occasionally check your notebook. The complete laboratory notebook will be turned in for grading at the end of the semester.

The maximum grade for a completed notebook is **200 points** (notebook itself 50 pts + 3 notebook reports, 50 pts each).

Digital data must be saved offsite and be available upon demand by the instructor for full credit.

Laboratory Reports:

Four formal laboratory reports will be required throughout the semester. Criteria used in grading the Lab Reports are: (1) your understanding of the experiment as judged by your comments and answers to questions, (2) the quality of your data, (3) the completeness and accuracy of your data analysis (including error analysis), (4) the report's clarity, organization, and quality of presentation. Lab report format should follow ACS guidelines.

Laboratory reports are **100 points each** and must be turned in on the due dates (see the Lab Schedule). After grading, the Lab Report #1 will be returned to the students with the instructor's comments and suggestions. Students will be allowed to revise, re-write, and re-submit the said paper within one week. The re-written paper should be submitted together with earlier submitted version. Lab Reports #2-4 can be submitted only once; without an option to re-submit.

Students are required to write each paper independently, analyzing their own data and discussing accordingly. IT IS NOT PERMITTED TO USE OTHER PEOPLE'S DATA/DISCUSSION IN THE PAPER WITHOUT A REFERENCE. If this happens, it will be considered as plagiarism, and zero score will be given on this paper. Grammar check is required for the first submission of all papers.

Late Assignments:

Late assignments will be penalized 2 points each workday delay (max 10 pts per week). After 2 weeks from the due date lab reports will not be accepted, and student will receive 0 points on that report.

Lab Course Grading:

The maximum grade for this laboratory course is **600 points**: 400pts for the formal lab reports (4×100pts), 150 pts for the notebook reports (3×50pts), 50 pts for the notebook.

Department of Chemistry Policy Statement Regarding Student Integrity:

The Department of Chemistry follows the university policy on academic honesty published in the "Faculty Affairs handbook" and the "On Campus: The Undergraduate Co-Curricular Affairs handbook." Any suspected offenses may be referred to the Department Chair for appropriate action.

All tests taken must represent your individual, unaided efforts. To receive or offer information during an examination is cheating. The use of unauthorized supplementary materials during tests is also cheating.

All laboratory work performed during this course must reflect your individual effort. Only original data obtained by your own laboratory experimentation are permitted to be used, except when specifically authorized by your laboratory professor. Data from supplementary sources (handbooks, reference literature, etc.) must be clearly referenced (title, author, volume, page(s), etc.). Falsification or destruction of data constitutes cheating.

Schedule of Laboratory Sessions:

Day	Lab #	Exercise	Lab Report	Lab Report Submission
08/30	1	<i>Check-in</i>		
09/06	2	GC1 - Injection technique	NO Report	
09/13	3	GC2 - Qualitative analysis	Notebook report 1	
09/20	4	GC3 - Quantitative analysis	Report #1	1 st submission on Oct. 4 th , 2 nd submission on Oct 18 th
09/27	5	GC4 - Kovats retention index		
10/04	6	GC5 - HETP	Notebook report 2	
10/11	7	GC6 - Temperature programming	Report #2	Due on Nov 1 st
10/18	8	GC7 - Enthalpy		
10/25	9	GC8 - Similar boiling points		
11/01	10	Thin Layer Chromatography, TLC	Report #3	Due on Nov 8 th
11/08	11 A	HPLC1 - Analgesics (group A)	Report #4	Due on Nov 22 nd
11/15	11 B	HPLC1 - Analgesics (group B)		
11/22	12 A	HPLC2 - Gradient Elution (group A) <i>Check -out</i>	Notebook report 3	
11/29	-	Thanksgiving Break		
12/06	12 B	HPLC2 - Gradient Elution (group B) <i>Check-out</i>	Notebook report	Last day for submitting reports and notebooks is Dec 10.

** HPLC exercises need to be scheduled for smaller groups. Accordingly, the lab section will be divided into two groups (Group A and Group B). Sign-up sheets for the HPLC labs will be provided on the 10th lab session (Nov 1). Each subgroup will meet on a week on/week off schedule.