



CHM4413L: Biophysical Laboratory

for UF Chemistry Majors
 Sections 7F03 (W), 7555 (R)
 Summer 2017 (May 08 – August 04)
 (2 Credit Hours)

Course Website: <https://ufl.instructure.com/courses/339711>

Course Materials: All course materials will be available through the secure course website, listed above, which is a Canvas LMS site hosted by Instructure. If material is to be printed from the site, be aware that the latest updates and corrections might be missed.

Instructor: PJ Brucat

Contact info: Use the Canvas Messaging tool only
 Office Hours: posted or by appointment
 (see below for details)

Teaching Assistants:

Maria (Pilar) Buteler Jiawei Huang
 John Tokarski Yunlu Zhang
 Yue Hu

Attendance

Attendance is mandatory. If you expect to be absent from any lab or lecture session, contact your instructor at least one week prior to the scheduled meeting. Absences will be administered in accord with [UF policy](#).

Weekly "Lectures"

We all meet together Tuesdays period 4 in **JHH 221** for essential background information, discussion of the lab activities, expectations for assignments, and an occasional unannounced quiz.

Lab Sessions

Each section is assigned a specific afternoon meeting time, usually occurring in LE1248. Some data analysis and database activities will be held in a more traditional classroom, and some will occur in the Science Library. Locations will be posted in course announcements and weekly Mission Statements. It is the responsibility of all students to be completely prepared for all lab sessions.

Lab Safety

You are expected to have and use all proper safety equipment and procedures when in the laboratory. This includes, but is not limited to, eye protection and appropriate clothing/skin covering. For more information about lab safety see the course website or consult the the teaching staff.

Ethics

Department and conduct appropriate of research professionals of students in this course is expected. This includes the complete understanding of academic integrity, plagiarism, and data fabrication, and the honorable navigation of those issues.

SUMMER SEMESTER 2017

	S	M	T	W	T	F	S	
May						Registration 5	6	
		---Drop/Add---						
	7	8	9	10	11	12	13	
	14	15	16	17	18	19	20	
	21	22	23	24	25	26	27	
28	Holiday 29	30	31					
June					1	2	3	
	4	5	6	7	8	9	10	
	11	12	13	14	15	16	17	
	18	Grades Due 19	Deg Cert. 20	Summer Break		21	22	Registration 23
	25	-----Drop/Add-----					26	27
July							1	
	2	3	Holiday 4	5	6	7	8	
	9	10	11	12	13	14	15	
	16	17	18	19	20	21	22	
	23	24	25	26	27	28	29	
30	31							
Aug.			1	2	3	4	Comment 5	
	6	7	8	9	10	11	12	
	13	14	15	16	17	18	19	
						Registration		

Groups and Teamwork

Students will work in small groups. Some assignments will be submitted as a group. Working as a team is an important aspect of the scientific endeavor and the skills and challenges of teamwork are to be mastered this term. Groups will initially be assigned at random. Groups will be given a designation code which will serve as the group identifier. Groups will have exclusive access to a collaboration page on Canvas that allows for file sharing and intra-group communication. Groups will be rearranged during the term at the discretion of the instructors. If irreconcilable differences develop within a group, contact your instructors for advice and/or remediation.

Course Communications

All course communications are to occur within the Canvas environment using Announcement, Discussion, or Messaging tools. All Canvas account profiles must be configured for immediate automatic notification of announcements and course communications via the individual's preferred communication/email method. Do this now. Responsibility for accessing and responding to electronic course communication in a timely fashion is that of the student. All communications with instructional staff and assignment submissions should **include the student's section number and group designation**.

Meeting with Brucat

Brucat is (almost) always available for "office hours" with students of this course, by request. A request consists of a message through the Canvas messaging tool ("Conversations") with **three distinct times** you find convenient for your schedule to have a meeting. The response, usually within a few hours, will be a choice of one of the options with a meeting place and a confirmation request. This is a painless procedure for optimizing personal access to this instructor. Use it liberally. Brucat will also occasionally post times and places for "walk-in" student conferences on the Canvas calendar when the need for such meetings is anticipated.

Lab Notebook

Every good Chemist has a lab notebook by their side. It is a journal, evidence of discovery, a historical record, and a valuable tool. A proper lab notebook is required in every activity of this course, including library and data processing activities. Notebooks will be checked and graded at the beginning and end of each lab period. Every student is expected to keep an individual notebook, even when working in a group. Notebooks will be assessed every lab session as "acceptable" (100%), "unacceptable" (50%), or "missing" grade (-10%). The lowest positive score will be dropped from the term's notebook grade calculation.

In-Lab Data Analysis

The laboratory session will be used not just for taking data, but for plotting these data and performing as much analysis as possible before shutting down the equipment and leaving the lab. A painful mistake is made by failing to examine the data carefully as it is acquired. It is too late to realize this mistake when an assignment is being written and good data for it is simply not there. The instructional staff will assist you in the interpretation and visualization of your data, along with helping with the assignment to be submitted, *before* you leave the lab. It is intended that a minimum of extra-lab time be spent on the writing of lab reports and assignments.

Course Objectives

This course seeks to provide essential instruction allowing the successful student to:

- Create a publication-quality scientific titles and abstracts
- Analyze and present experimental data graphically, cogently and succinctly
- Keep a professional scientific notebook
- Perform reliable and accurate measurements
- Critically evaluate experimental parameters and optimize conditions for successful experimental results
- Interpret and expand scientific protocols and experimental design
- Design definitive experimental tests of scientific hypotheses

Laboratory Activity Topics (See Canvas website for scheduling details)

Measurement: Accuracy, Precision, Error, and the Micropipette
Graphing Data: Professional Style and Format
Library Databases: This isn't your Daddy's Google Search
Electronic Structure of Molecules: Quantum Mechanics and Spectroscopy
Transport Phenomena: The Permeability of a Membrane
Phase Equilibria: The Eutectic Behavior of Drug Mixtures
Enzyme Kinetics: Binding, turnover and Inhibition in the Metabolism of Lactose.
Fluorescence versus Absorption: Sensitivity vs Ubiquity
Nonradiative Energy Transfer: When is Quenching not Dissipative?
NMR and Protein Folding: A Model System

Course Grade Computation

Your course letter grade will be derived from a simple calculation: the weighted average of your performance in:

In-Class (Lecture) Quizzes	15%
Pre-lab Quizzes	10%
Authoring Titles & Abstracts	20%
Data Processing and Visualization	20%
Experimental Design	20%
Laboratory Notebook	10%
<u>Post-Lab Feedback</u>	<u>5%</u>
Total	100%

Your course grade will be determined from your total course performance percentage as follows:

85%	A
80%	A-
75%	B+
70%	B
65%	B-
60%	C+
55%	C
50%	D
< 50%	E

All grades will be posted in the Canvas GradeBook, as available.

UF's Grading Policy: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Late submission policy

Life happens. Sometimes one cannot meet the challenges of meeting deadlines. If you anticipate that you (as an individual or as a group) cannot meet an assignment deadline, communicate that to all your Instructors (message "All Teachers" and "All Teaching Assistants") prior to the scheduled assignment deadline with your name, your group designation, your TA's name, your section number, and a projected late completion date for the submission. Typically a late penalty of 10% per day past the scheduled assignment due date (whole or partial) will be assessed, but this is negotiable. **Without prior notification, late submissions will be scored as missing** (i.e. given a grade of zero). If the proposed late submission (revised) deadline is missed, the assignment will also be scored as missing. Group assignments must have the unanimous consent of all members to request late submission. Use late submission requests sparingly.

Regrade Requests / Grade Challenge

Everyone makes mistakes. No one, however, should suffer from a mistake that can be corrected. Therefore, if you feel that a particular assignment has been misgraded by your instructors, you have the right to challenge that grade. One challenge per person. One challenge per group. If the result of the grade challenge results in a grade less than or equal to that originally scored, the challenge is lost, and no more remain. If the challenge was valid, however, the request is granted without penalty of challenge count. One challenge per individual and one per unique group is granted per term.

Resubmission Requests / The “Do Over”

When in life to you get a “do over”? Well, in CHM4413L one does, after a fashion. Every individual and group has the option of resubmitting an assignment that just wasn't up to their standards, but under certain conditions:

- The resubmission request must be sent to all Instructors and TAs by Canvas messaging within 24 hours of the grade post.
- The resubmission request will contain a deadline for resubmission, not to exceed 1 week from the grade posting, the student's name, group designation, section number, TA, etc.
- The resubmission will be graded as an original submission. However, if all the issues commented on in the original grading are not addressed the assignment will be graded as missing.
- If the resubmission is not received by the proposed deadline the assignment will be graded as missing
- If the resubmission is acceptable, the score for the assignment will be the arithmetic mean of the original score and the resubmitted score
- A resubmission may not be combined with a late submission or a regrade request.

Login Issues

For Username/Password issues, such as difficulties logging into any Gatorlink-authenticated site at UF, (including our Canvas), please contact the UF Help Desk at: helpdesk@ufl.edu (352) 392-HELP - select option

University Policy on Accommodating Students with Disabilities

Students requesting accommodation for disabilities must first register with the Dean of Students Office (<https://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 the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

University Policy on Academic Misconduct

Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>

We, the members of the University of Florida Community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity

Disclaimer

Note: All aspects of course operations, including grading, course policy and policy execution, are subject to change at any time at the sole discretion of the course instructor.

---- Brucat 2017 ----