



# CHM4413L: Biophysical Laboratory

for UF Chemistry Majors  
 Sections 7F03 (T), 7555 (W)  
 Summer 2016 (May 09 – August 5)  
 (2 Credit Hours)

Course Website: <https://ufl.instructure.com/courses/326138>

Course Materials and “Manual”: All course materials will be available through our secure course website, listed above, which is a Canvas LMS site hosted by Instructure. There is no printed textbook or lab manual.

### Instructors: Gail Fanucci

Contact info: Please email professor Fanucci at [gefanucci@gmail.com](mailto:gefanucci@gmail.com). For some odd reason the canvas app will not effectively work on her smart phone. You may text message me in an emergency situation: 352 219 5201. Do not text me after 10 pm at night or before 7 am in the morning. Do not expect a quick response over the weekend.

### Teaching Assistants (Contact through Canvas Messaging)

### Weekly “Lectures”

We all meet together Thursday period 1 in LEI 207 for background information, discussion of the lab activities, and expectations for assignments. Attendance is MANDATORY. You will check a sign-in sheet upon entry. It pains me to do this for a 4xxx level class but too much information is given during these meetings regarding the laboratory reports and expectations that it is not fair to your TAs or me when you miss lecture and then ask for extra office hours to go over what was discussed in a lecture period. **Attendance will be graded.** (see below)

### Lab Sessions

Each section is assigned a specific afternoon meeting time in LEI248. Be prepared for these and contact your instructors well in advance of any anticipated absence so alternative schedule can be accommodated. For some weeks your group may be assigned a specific time of arrival.

### 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. We will also be using optical and IR lasers which require specific radiation safety procedures. For more information about lab safety see the course website and consult your lab instructor.

### Ethics

We expect department and conduct appropriate of research professionals of students in this course. This includes the complete understanding of academic integrity, plagiarism, and data fabrication.

### Groups

Each lab section will divided into three groups of (nominally) three people. You will work together as a team in lab, but pre-lab quizzes and the abbreviated reports will be submitted individually. All other assignments will be submitted as a

### SUMMER SEMESTER 2016

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

team.

### Lab Notebook and Data Plotting.

Every good Chemist has a lab notebook by their side. It is a journal, evidence of discovery, a historical record, and a valuable tool. You will keep a proper lab notebook in this course. Your notebook will be graded and checked upon leaving each lab period. You should come to lab prepared with all Tables and notes within the lab notebook. Even when working in a group each student should have complete data notes within their own lab notebook. You also should have at least one person in your group come with a laptop that has sufficient software to plot data before you leave the laboratory session. It is your responsibility to repeat data measurements in cases where things have gone awry. Many assignments are to show your pre-processed data or preliminary graphs BEFORE leaving the laboratory period. The "check" of the notebook will be "acceptable" or "unacceptable". **An acceptable gives a grade of 100. An Unacceptable gives a grade of 50. Grades for notebooks will be averaged at the end of the semester. You will be allowed to drop one unacceptable grade.**

### Course Grade Computation

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

Prelab Quizzes (5)	8%
In-Class Quizzes (4)	8%
Post Lab Questions & Assessment (8)	14%
Abstract Assignment (2)	5%
Data Processing (11) (drop 1)	15%
Notebook (8) (drop 1)	10%
Attendance (13) (drop three)	10%
Video Reports (2)	15%
Full Report (1)	15%
Total	100%

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

88%	A
83%	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: <http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>

### Getting Help

For quickest response, you might find posting questions to the Canvas Discussion Board might be a good choice. Messaging the Instructor, or even a classmate also works.

For Username/Password issues, such as difficulties logging into any Gatorlink-authenticated site at UF, (including our course website), please contact the UF Help Desk at:

[helpdesk@ufl.edu](mailto:helpdesk@ufl.edu)

(352) 392-HELP - select option 2

### Quality of Life

Resources are available at <http://www.distance.ufl.edu/getting-help> such as:

[Counseling and Wellness resources](#)

[Disability Resources](#)

[Online Library Help Desk](#)

[Dean of Students Office](#)

Excused absences are allowed in accordance with UF policy. For other reasons please consult with your instructor in advance.

**Laboratory Schedule** (Subject to change; See course website for latest information)

Week	Date	Module	Notes	Assignment	Due Date
1	May 9-13th	No Lab			
2	May 16-20th	Conjugated Dye	On-line Prelab Quiz*	Construct Table of Wavelengths and Calculate Variables <sup>¥</sup> Notebook <sup>£</sup>	Before Leaving the lab session
				Post Lab Questions <sup>†</sup>	June 2nd
3	May 23-27 <sup>th</sup> Room TBA	Data Discussion (100 total points) Title/Abstract/Tables/Plotting /Error MatLab Introduction and Exercises	Title and Abstract <sup>§</sup> (conjugated dye) due prior to lab	Graphs with Figure Captions for Conjugated Dye <sup>¥</sup>	Before Leaving the lab session
4	May 30-June 3	Fluorescence Set up Fluorescence Experiment	On-line Prelab Quiz*	Evaluate SNR of each set up. <sup>¥</sup> Notebook <sup>£</sup>	Before Leaving the lab session
5	June 6-10 <sup>th</sup>	Fluorescence Quenching Experiment		Two Graphs with Figure Captions for Data Analysis <sup>¥</sup> Notebook <sup>£</sup>	Before Leaving the lab session
				Post Lab Questions <sup>†</sup>	June 14/15 <sup>th</sup> prior to lab period
				Video Lab Report (150 points) See Guidelines on Canvas	June 28 <sup>th</sup> noon
6	June 13-17th	Phase Diagram (200 total points) (DSC or Microscope)	On-line Prelab Quiz*	Graph with Figure Caption <sup>¥</sup> Notebook <sup>£</sup>	Before Leaving the lab session
7	June 20-24 <sup>th</sup>	<b>Summer Break</b>			
8	June 27-July 1	Phase Diagram (DSC or Microscope)		Graph with Figure Caption <sup>¥</sup> Notebook <sup>£</sup>	Before Leaving the lab session
				-Title, Abstract <sup>§</sup> and - Post Lab Questions <sup>†</sup> - Final Data/Graph <sup>¥</sup>	July 5/6 <sup>th</sup> prior to lab periods
9	July 4-8 <sup>th</sup>	NMR Sample Preparation	On-line Prelab Quiz*	Experiment Description <sup>¥</sup> Notebook <sup>£</sup>	Before Leaving the lab session
10	July 11-15th	NMR Data Acquisition		Preliminary Data Analysis and Table <sup>¥</sup> Notebook <sup>£</sup>	Due end of lab period
				Graphing Assignment <sup>¥</sup>	Due July 21 <sup>st</sup>
				Full Lab Report	Due July 26 <sup>th</sup>

				(200 points) See Guidelines on Canvas	Noon
11	July 18-22 <sup>nd</sup>	Contact Lens	On-line Prelab Quiz*	Graphs with Figure Captions ‡ Notebook <sup>£</sup>	Before Leaving the lab session
				Video Lab Report (150 points) See Guidelines on Canvas	Due August 2 <sup>nd</sup>
12	July 25-29 <sup>th</sup>	Make up lab if needed			
13	Aug 1-5 <sup>th</sup>	No Lab			

<sup>§</sup> Each Title and Abstract Assignment is worth 50 points.

<sup>£</sup> Each Notebook will be graded acceptable (100 points) or unacceptable (50 points) or not done at all (zero points).

\*On-line Prelab quizzes will vary in points.

<sup>‡</sup> Each graphing assignment will be worth 50 points.

<sup>†</sup> Each post lab question set will be worth 50 points.

**Due Dates** are given or are relative to the day of your lab session.

**Report Details** will be given in the course website.

**Prelab Quizzes.** In any rotation, you are to perform the pre-lab quiz individually for the experiment your group will be doing that week. These quizzes will be due at midnight the day before your lab session.

## Lecture/Discussion Schedule

Week	Date	Topic	Assignment
1	12-May	Conjugated Dye Introduction/ Particle in a Box	
2	19-May	Plotting/Abstract/Tables/Figures/Errors –	ICQ
3	26-May	Fluorescence/Quenching	
4	2-Jun	Florescence Quenching/Activity Coefficients	
5	9-Jun	Phase Behavior and Instrumentation	ICQ
6	16-Jun	DSC and Microscope Background	
7	23-Jun	Summer Break	
8	30-Jun	Equilibrium and NMR Lecture	ICQ
9	7-Jul	Discussion of Video Reports	
10	14-Jul	Discussion of Written Reports	ICQ
11	21-Jul	Transport Lecture	
12	28-Jul	Q/A	
13	4-Aug	Q/A	

ICQ = in-class quiz

### 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 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 <http://www.dso.ufl.edu/students.php>.

***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 for this document

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