

Course Syllabus
Biochemistry Lab/CHEM 4121
Fall 2019

Instructor:	Lori Isom	Office Hours:	
Office:	201D, Laney-Manion		M,W, F 10:00-11:00am
Phone:	450-5794		
Email:	lorii@uca.edu		
Class Time:	M or W 1:00 - 5:00	Room 302 Laney-Manion Hall	

Course Description and Objectives:

This course is designed to be an overview of important biochemical techniques and concepts. The majority of this course will involve computational analysis of crystallographic structures, and literature analysis. The course will also help to develop important data presentation and lecture skills relevant to the graduating scientist.

Prerequisites:

Each student is required to have an **e-mail address, access to the internet, and Google Classroom/Docs/Slides and access to a windows-based computer onto which you have permission to download a program. Students are responsible for checking Google Classroom.** Class announcements and assignments will be given and submitted via Google Classroom. Each student must also have access to a PC computer to run the computational software. A flash drive will also be useful.

The prerequisite course for this class is successful completion of Chem 3411 (and thus Chemistry 1450, 1451, 2410) and Chem 4320 as a pre- or corequisite. Although it is not required, it is strongly recommended that students complete Chem 4320 before taking this course.

Class Attendance

Class attendance is required. Those students who attend class regularly are the most likely to succeed in this course. Each lab missed without an excuse validated by the instructor will result in a point penalty and the lecture total will be reduced accordingly. Any student who is absent from class for 2 class meetings may be dropped from the course with a W.

Make-up Policy

Make-up labs will be allowed **only** under rare circumstances. If you must miss a lab for an unavoidable, significant and validated reason, contact me by email or in person **BEFORE** the time of the scheduled lab.

Course Assignments (each category could include some or all assignments described below)

A) Structure Safari and Protein Presentation

The analysis of macromolecular biochemical structures involves many aspects of biochemical research that are computationally based. Groups of students will be assigned a

protein whose structure they will analyze throughout the semester. This project will **require** access to a windows-based computer, downloading the programs RasMol and access to Microsoft Excel, Powerpoint and Word. The proteins assigned to the class will be both analyzed individually and presented as a group. Each student will be responsible for the literature (including quizzes), analysis, and slide prep for their assigned protein. Each group will have to work with other groups to construct the relationship between the proteins for the final presentation.

All students will be required to complete assignments on time and should prepare for potential, unavoidable issues involving online resources (such as websites and databases unavailable, software not running properly on your specific computer) by allowing time for the issues to resolve and/or to check out a departmental laptop (for use in Laney-Manion Hall only).

Topics covered include:

X-ray Crystallographic Experiment and Data
Structural and Literature Databases
Structural Coordinate Visualization
Protein Structural Investigation Introduction
Structural Detail: Relating Experimental Data to Literature
Comparing Structures: PDB Structural Tools
Comprehensive Protein Structure Analysis

B) House (or other approved medical show) Presentations

During the semester, two groups work together to select an episode of House that we will view. Both groups decide on which biochemistry aspects of the show they will choose to present. Students must have access to the episode of House they wish to show the class either on DVD or through some online service (currently available free through Amazon Prime).

Each member of the group will be responsible for presenting sufficient information of appropriate depth and each student will be graded independently on their contribution to the presentation as well as the presentation as a whole.

Class Communications

Students are required to obtain all information missed from class absences from their peers. It is a very good idea to have a classmate record a lecture that you know you will miss. Once notes and/or lecture recording(s) have been obtained and reviewed, students should come to my office during office hours to clarify any confusion about the missed material.

If a texting app service is used for the class, class announcements may be sent out by Google Classroom (primary), email, and/or text. Students should check their UCA email account regularly for class information/reminders.

I will check my UCA email regularly during working hours during the regular semester when the University is open, ~8am-5pm, M-F. I cannot respond to inquiries that require in depth explanations or instruction. Students should come to my office hours for such information. Students should not expect instant (especially last minute) or continuous access via email.

Course Evaluations

Student evaluations of a course and its professor are a crucial element in helping faculty achieve excellence in the classroom and the institution in demonstrating that students are gaining knowledge. Students may evaluate courses they are taking starting on the Monday of the twelfth week of instruction through the end of finals week by logging in to myUCA and clicking on the Evals button on the top right or following the link provided in the email announcing the evaluations sent by UCA.

I appreciate and take very seriously student comments concerning my courses. To encourage evaluation completion, a small number of bonus points may be offered if your course evaluation is completed and confirmation provided within the designated timeframe. Evaluations may be completed any time in the timeframe stated above but to be eligible for the bonus points, students must adhere to the instructions provided including completion timeframe and confirmation.

Academic Dishonesty

The penalties for cheating (ie. representing someone else's work as your own) are SEVERE!! Penalties include, but are not limited to, assigning an "F" for the work and/or the course to expulsion from the University. Obtaining assistance from other students on work assigned as "student work only" is cheating and will be prosecuted.

Photographing and/or keeping copies of quizzes is prohibited and violates the academic dishonesty policy.

The University of Central Arkansas affirms its commitment to academic integrity and expects all members of the university community to accept shared responsibility for maintaining academic integrity. Students in this course are subject to the provisions of the University's Academic Integrity Policy, approved by the Board of Trustees as Board Policy No. 709 on February 10, 2010, and published in the Student Handbook. Penalties for academic misconduct in this course may include a failing grade on an assignment, a failing grade in the course, or any other course-related sanction the instructor determines to be appropriate. Continued enrollment in this course affirms a student's acceptance of this university policy.

Electronic Devices

Electronic devices not allowed in the student's possession during quizzes. Any student wishing to bring one of these devices to class during testing may be required to leave the device on the desk at the front of the classroom at their own risk. The student is solely responsible for the safety of their devices if they choose to bring them into the classroom. Calculators are allowed only during those quizzes requiring them. Calculators may be allowed during some quizzes. This is solely at the instructor's discretion.

Possession of electronic devices is permitted during regular lectures, labs and reviews, however these devices should be silenced prior to class to minimize the potential disruption of the lecture or other class activities. The use of cell phones during quizzes is strictly prohibited.

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Grading

The following is a *tentative description of the assessment/assignments included in this class*. Specific numbers may be changed if deemed necessary. Most assignments will be submitted through Google Classroom.

Late work will not be accepted except at the discretion of the instructor.

The following grading scale and assessments may be altered at any time by the instructor as seen fit and appropriate for a given class, including lowering grade threshold cutoffs. The scale reflects a maximum and will not be increased. For instance, a student whose average at the end of the semester is 90% is guaranteed an A. This threshold will not be raised, it may however be lowered at the instructor's discretion.

Boom/Pass/Fail (sounds like a Black-eyed Peas song...no?) Scale

Some assignments will be graded on what I call the Boom/Pass/Fail scale. Students earning a passing grade will have completed the assignment thoroughly and correctly. Students earning a Boom grade will have gone far above and beyond what would be expected on the assignment. Students earning a Fail grade would not have completed the assignment satisfactorily to earn a passing grade. Passing grades contribute qualitatively to any participation credit applied in the course but they do not affect a student's numerical grade. A Boom grade also contributes to any participation credit but also includes a small point bonus, which add to a student's total points in the course. A Fail grade negatively affects any participation credit and also may result in the reduction of a student's overall points in the course by 0-2 points.

Optional quizzes and miscellaneous assignments are included at the discretion of the instructor and therefore a range of potential points is listed. If assigned, the points will be included in grade calculation and are not optional.

In addition to classroom participation and content, students will be required to watch and will be responsible for all information contained in any custom videos prepared and assigned by the instructor. The information contained will likely be included on quizzes and other assignments.

If a project/assignment requires the selection and approval of a topic, such selection and approval must be obtained in a timely manner. Delay past the announced deadline will result in the assignment of a 0 grade for the project.

If a student decides to drop a class, this decision is solely the responsibility of the student and should be made understanding the grade calculation methods explained and the instructor's right to adjust these when grades are assigned.

Grading

The following is a tentative description of the assignments included in this class. Specific numbers may be changed if deemed necessary.

Structure Safari and Protein Presentation	200 points
House Presentation	100 points
In-class Practical Assessment	0-100 points
Quizzes and Participation	0-100 points
Other Assignments	0-50 points
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Total	300-500 points

Tentative Scale (subject to change):

A = 92% +

B = 85 – 91%

C = 75 – 84%

D = 65 – 74%

F = < 64%

Important Dates

Friday, November 8th is the last day to drop with a W.

Drop policy

The last day to drop with a “W” is November 8th. If a student drops on or before this date, a “W” is assigned regardless of the student’s grade in the course. The only possible grades assigned after Nov 8th are A-F letter grades and these obviously will impact your grade point average.

Students not attending class for whatever reason for more than four class periods may be dropped from the course (before Nov 8th) by the instructor, at the instructor's discretion.

Disability Disclosure

The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need an accommodation under this Act due to a disability, contact the UCA Disability Resource Center at 450-3613.

Students enrolled in this course who have a medically validated reason and a letter from DSS will be required to take assessments in a location determined by the instructor that provides for the allowances stated from DSS. Any other requests, not specifically provided for in the accommodation letter from DSS, will be considered and up to the sole discretion of the instructor.

Emergency Procedures Summary

An Emergency Procedures Summary (EPS) for the building in which this class is held will be discussed during the first week of this course. EPS documents for most buildings on campus are available at <http://uca.edu/mysafety/bep/>. Every student should be familiar with emergency procedures for any campus building in which he/she spends time for classes or other purposes.

Title IX Disclosure:

If a student discloses an act of sexual harassment, discrimination, assault, or other sexual misconduct to a faculty member (as it relates to "student-on-student" or "employee-on-student"), the faculty member cannot maintain complete confidentiality and is required to report the act and may be required to reveal the names of the parties involved. Any allegations made by a student may or may not trigger an investigation. Each situation differs, and the obligation to conduct an investigation will depend on the specific set of circumstances. The determination to conduct an investigation will be made by the Title IX Coordinator. For further information, please visit: <https://uca.edu/titleix>. **Disclosure of sexual misconduct by a third party who is not a student and/or employee is also required if the misconduct occurs when the third party is a participant in a university-sponsored program, event, or activity.*

Student Handbook Policies

You should familiarize yourself with the policies listed in the most recent UCA student handbook (available on UCA website), especially those related to academics and the sexual harassment policy.

Stuff I shouldn't have to say.... But do.

- 1) I cannot discuss grades by phone or email. I do not make appointments by phone.
- 2) If you do not have another class during my office hours or another pressing and valid reason, you cannot make an appointment to meet with me outside of my office hours. Just so you know... not wanting to get up early enough to come to my office hours is not a valid reason.

3) I will not discuss grades during the last week of the semester. The end of the semester is not the time to be concerned about your grade in the course, unless there are sufficient extenuating circumstances (I determine what those are... and just wanting to know isn't a good reason), I will not make appointments or meet with students dropping by to discuss their grade in the course

4) Students will not be allowed to select the color of the paper, the font, or font size of the exams or other assessment/assignment materials regardless of whether other instructors have provided such accommodation in the past for the student without a validated DSS accommodation requiring the requested action

5) Late work will almost certainly not be accepted because of some unexpected computational or mechanical failure. Be responsible enough to get the assignment in on the time/date it is due. Procrastination is directly correlated with the excuses given above. Don't do it.

6) If you choose to drop the course, the decision is yours. No one else's. I reserve the right to adjust grades/assignments as I deem warranted for a given class after you make your decision.

7) If you miss class, I will not provide make up lecture for you on the material. If you have to miss class, you should try to have someone record lecture for you and get at least two people's notes over the material you missed. You should use these to get up to speed as quickly as possible once you return... After you have done these things, please come to me if you have specific questions about the material you missed.

8) You must submit assignments in the manner requested and follow all directions concerning those assignments/exams or you may lose significant points. Unless specifically stated, assignments/projects **cannot** be emailed electronically and even those allowing electronic submission will most likely require a hard copy to be submitted as well.

9) If you don't follow directions and select a topic/drug in a timely manner (ranging from 1-2 weeks before assignment/presentation is due, depending on the assignment), one will not be assigned to you and you will forfeit points for the resulting/related assignment. Except under extenuating circumstances, topics will not be approved via email.

10) If you need to miss a class, it is your responsibility to obtain the missed information and you will forfeit any assignments and their corresponding points collected during that absence. I will not explain what you missed during class by email. The best method for obtaining information if you have to miss class is to have someone record lecture and take notes for you. You should never rely on one person's notes, however, since different people include different information in notes.

Tentative Class Schedule

all dates and content are subject to change!

Date	Lab
Aug 26 (M) or Aug 28 (W)	Introduction/Sign up
Sept 2 nd (M) or Sept 4 th (W)	No Lab (Labor Day)
Sept 9 th (M) or Sept 11 th (W)	Protein and Database Introduction
Sept 16 th (M) or Sept 18 th (W)	House Presentations (groups 1&2)
Sept 23 rd (M) or Sept 25 th (W)	Protein Analysis, session 1
Sept 30 th (M) or Oct 2 nd (W)	House Presentations (groups 3&4)
Oct 7 th (M) or Oct 9 th (W)	Rasmol Assessment
Oct 14 th (M) or Oct 16 th (W)	TBA (Fall Break)
Oct 21 st (M) or Oct 23 rd (W)	Protein Analysis, session 2
Oct 28 th (M) or Oct 30 th (W)	Structure Safari and Protein Presentation (group 1)
Nov 4 th (M) or Nov 6 th (W)	Structure Safari and Protein Presentation (group 2)
Nov 11 th (M) or Nov 13 th (W)	Structure Safari and Protein Presentation (group 3)
Nov 18 th (M) or Nov 20 th (W)	Structure Safari and Protein Presentation (group 4)
Nov 25 th (M) or Nov 27 th (W)	TBA (Thanksgiving week)
Dec 2 nd (M) or Dec 4 th (W)	No Lab