

Chemistry 362 & 465
Current Concepts in Biochemistry
Dr. M. A. Ballicora
Fall 2009, Tuesdays and Thursdays 8:30-9:45am FH-105

Lecture Schedule:

#	Date	Topic
1	Tu 8/25	Introduction and Review of Protein Structure
2	Th 8/27	Examples of Protein Structures and Visualization
3	Tu 9/1	Protein Structure and Function
4	Th 9/3	Homology Modeling
5	Tu 9/8	Homology Modeling 1st topic due (title: the day before)
6	Th 9/10	Homology Modeling
7	Tu 9/15	Protein Structure and Function - <i>student presentations & discussion</i>
8	Th 9/16	Protein Structure and Function - <i>student presentations & discussion</i>
9	Tu 9/22	Protein Structure and Function - <i>student presentations & discussion</i> . 2nd topic (title day before)
10	Th 9/24	Protein Structure and Function - <i>student presentations & discussion</i>
11	Tu 9/29	Homology Modeling - <i>student presentations & discussion</i>
12	Th 10/1	Homology Modeling - <i>student presentations & discussion</i>
	Tu 10/6	Mid-Term Break
13	Th 10/8	Exam 1
14	Tu 10/13	Conformational Changes & Allosteric Control – 3rd topic due (title: the day before)
15	Th 10/15	Conformational Changes & Allosteric Control
16	Tu 10/20	Conformational Changes - <i>student presentations & discussion</i>
17	Th 10/22	Conformational Changes - <i>student presentations & discussion</i>
18	Tu 10/27	Conformational Changes - <i>student presentations & discussion</i>
19	Th 10/28	Conformational Changes - <i>student presentations & discussion</i>
20	Tu 11/3	Glycosyltransferases – 4th topic due (title: the day before)
21	Th 11/5	Glycosyltransferases
22	Tu 11/10	Glycosyltransferases - <i>student presentations</i>
23	Th 11/12	Glycosyltransferases - <i>student presentations</i>
24	Tu 11/17	Glycosyltransferases - <i>student presentations</i> 5th topic due (title: the day before)
25	Th 11/19	Protein Folding
26	Tu 11/24	Protein Folding
	Th 11/26	Thanksgiving
27	Tu 12/1	Protein Folding - <i>student presentations & discussion</i>
28	Th 12/3	Protein Folding - <i>student presentations & discussion</i>
	Sat 12/12	Final Examination – 9am to 11am

Major Themes:

The major themes in this course will be the relationship of protein structure to function and control of biochemical activities. We will examine several currently important areas of biochemical research. The structure of the course will involve introductory lectures by Dr. Ballicora for each area followed by student presentations and discussion. Learning how to communicate scientific results will be a central part of the course.

Homology Modeling:

One section of the course will involve molecular modeling of protein structure. Dr. Ballicora will present the basic concepts in the lecture section. You will be expected to create a homology model of a protein and/or turn in several views done of a PC graphics program.

Presentations:

Each student will present twice during the semester. Each presentation will be approximately 10 min long, followed by questions and answers. The speakers will provide Dr. Ballicora with abstracts of their reference on the days indicated by "topic due" in the list of lectures given above. **They should send their name and the full reference to their paper by 4 pm on the day *BEFORE* the topic is due and provide him a copy of the paper on the day it is due.** Note: in case of two or more people picking the same paper, the person with the earliest e-mail will present it and the others will need to find a new paper. Since you will need to have found 3 papers on the topic (see below) you should be ready to pick another one of your papers if necessary. **The emphasis of the selected papers must be molecular structure and function rather than cells and organisms.** A handout and a copy of the main literature reference for each presentation must be given to Dr. Ballicora during the class period before the presentation.

The day of your presentation you should provide an electronic copy of your presentation for posting on the class website and **have the slides installed 5 minutes before class start.** Alternatively, you can send an electronic copy the day before to Dr. Ballicora (before 8 PM). Please talk with Dr. Ballicora about what format you should submit. Presentation skills will also be taken into account at the time of grading (being on time is part of the presentation skills, do not be late). The instructor will provide appropriate advice on how to present scientific seminars.

Library Assignments:

All of the reading for this course will be from the original literature. Each student will submit a list of three recent (2003-2008) papers on each topic on the day of the first student presentation on that topic (and summaries, see below). Failure to follow this directive may cause a deduction. Your references should start with the authors' names, the title of the paper, the year it was published, the journal where it published, the volume number and the first and last page numbers. **This should be followed by a brief summary of each of these papers.** You should summarize the major conclusions of the paper citing at least one piece of evidence to support each conclusion. The summaries must be written in your own words. **The published abstract of the paper should be attached to summary.** There will be a point deduction if the summaries are late. Presenters can submit a summary of their presentation paper.

Discussion:

At the end of each session of student presentations, there will be time to discuss the subject. Your comments and questions may be based on how the three papers you read are related to the papers presented that day.

Grading:

Presentation 1 *	15%*
Presentation 2 *	25%*
Mid-term examination I	15%
Modeling assignment	10%
Participation & Discussion	5%
Summaries of papers	5%
Quizzes & other Assignments	5%
Final examination	20%

* The order of the presentations for the grading will not be based on the chronological order. Best presentation for each individual will have the higher grading. For instance, in the "362" class, if a student performed better in a presentation, that one will count as 25 % and the other 15%.

No make-up examinations will be given. In the event of a missed first examination due to a documented medical or family emergency, the score on the final examination, corrected by the ratio of the class averages on the two examinations, will determine the missed examination score. A similar procedure will be done for a missed final examination, always due to a documented medical or family emergency.

After the each round of student presentations, the presenters must make an appointment with Dr. Ballicora to discuss their presentation. We also may talk about your summaries and class discussion at that time.

Honors Students and Graduate students (CHEM465):

An extra assignment will be required. Honors students should see Dr. Ballicora as soon as possible to contract for this part of the course. The grading % of each item will slightly change to accommodate the extra assignment so the total will still be 100%. The student will be informed about the scale before the contract.

Expected behavior

Dishonest behavior such as cheating of any kind may cause to fail an assignment or examination. The second instance of dishonest behavior will constitute grounds to fail the course. Every single instance of dishonest behavior will be reported to the Chair and the Dean.

Cell phones or any other distracting devices are not allowed in class, particularly when other students are presenting. Please turn them off or this may cause a point deduction in the participation. In the exams, students are not allowed to use any sort of electronic device (cell phones, iPods, radios, calculators etc.) unless the instructor specifically authorizes them. Students are not allowed to enter or leave the classroom while a student is presenting. This is extremely distracting for your fellow classmate.

Website and Professor-Student Communication

The website will be on Blackboard System and the URL is <http://blackboard.luc.edu>
Students are responsible to check Blackboard regularly (once a day) as well as the Loyola email account (once a day) for updated information. The instructor will send messages to that account and Blackboard. Grades will be posted in Blackboard. In case that student needs it, there is help available about Blackboard at http://www.luc.edu/its/help_blackboard_doc.shtml
It is specifically recommended to check <http://www.luc.edu/its/pdfs/bbstudentqs.pdf>

Instructor:

Dr. Miguel A. Ballicora

FH-405

Phone: 508-3154

e-mail: mballic@luc.edu

Office hours:

Tuesday and Thursdays 10 am to 11:15 am or by appointment (e-mail or phone me – be sure that you get a confirmation)

Grading Scale (at the end of the course)

Percentage is rounded before determining the letter.

Letter	Range
A	95-100
A-	90-94
B+	85-89
B	80-84
B-	75-79
C+	70-74
C	65-69
C-	60-64
D+	55-59
D	50-54
F	49 and below