Chemistry 362 and 465
Current Concepts in Biochemistry
Dr. M. A. Ballicora
Fall, 2010
Tuesdays and Thursdays 8:30-9:45am FH-105

Tentative Lecture Schedule:

#	Date	Topic
1	Tu 8/31	Introduction
2	Th 9/02	Protein Structure, Function and Visualization
3	Tu 9/07	Protein Structure, Function and Visualization
4	Th 9/09	Homology Modeling
5	Tu 9/14	Homology Modeling - **1st topic due**
6	Th 9/16	Homology Modeling
7	Tu 9/21	Protein Structure & Function - student presentations & discussion
8	Th 9/23	Protein Structure & Function - student presentations & discussion **2nd topic due**
9	Tu 9/28	Protein Structure and Function - student presentations & discussion
10	Th 9/30	Homology Modeling - student presentations & discussion
11	Tu 10/5	Homology Modeling - student presentations & discussion
12	Th 10/7	Exam 1
	Tu 10/12	Mid-Term Break
13	Th 10/14	Conformational Changes & Allosteric Control **3rd topic due**
14	Tu 10/19	Conformational Changes & Allosteric Control
15	Th 10/21	Conformational Changes - student presentations & discussion
16	Tu 10/26	Conformational Changes - student presentations & discussion
17	Th 10/28	Conformational Changes - student presentations & discussion
18	Tu 10/2	Conformational Changes - student presentations & discussion
19	Th 11/4	Glycosyltransferases **4th topic due**
20	Tu 11/9	Glycosyltransferases
21	Th 11/11	Glycosyltransferases- student presentations
22	Tu 11/16	Glycosyltransferases- student presentations
23	Th 11/18	Glycosyltransferases- student presentations
24	Tu 11/23	Special topic
	Th 11/25	Thanksgiving
25	Tu 11/31	Special topic
26	Th 11/02	student presentations & discussion
27	Tu 12/7	student presentations & discussion
28	Th 12/9	student presentations & discussion
	Sat 12/18	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. We will try to follow the schedule, but it may change if needed to accommodate seminars or unexpected situations.

Molecular 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 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 (5 min). The speakers will provide Dr. Ballicora with the abstracts of their main reference on the days indicated by "topic due" in the list of lectures given above. But, they should e-mail him their name and the full reference to their paper they want to present **by 4 pm the day *before* the topic is due**. Note: that 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, just 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 could send an electronic copy to Dr. Ballicora the day before (no late than 8 pm). Please talk with Dr. Ballicora about what format you should submit. Presentations will be graded on content, knowledge, and quality of the presentation (being on time is part of the presentation skills). The instructor will provide 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 3 recent (2005-2010) papers on each topic and summaries prepared by the student. 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. 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 will normally be based on how the three papers you read are related to the papers presented that day.

Grading:	**465**	**362**
Presentation 1 *	10%*	15%*
Presentation 2 *	10%*	25%*
Presentation 3 *	20%*	NA
Mid-term examination 1	15%	15%
Molecular modeling	10%	10%
Discussion	5%	5%
Summaries of papers	5%	5%
Quizzes and assignments	5%	5%
Final examination	20%	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%. Generally, students perform better in the second presentation, which will be the one that gets higher weight in the grading.

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

Graduate (CHEM 465) and Honors Students:
There will be one extra presentation for graduate (CHEM 465) and honors students.
Honors students should see Dr. Ballicora as soon as possible to contract for this part of the course.

Expected behavior
Dishonest behavior such as cheating may cause to fail an assignment or examination. 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 they are specifically authorized by the instructor.

Students are supposed to check blackboard.luc.edu regularly for updated information as well as the Loyola email account.

Instructor:
Dr. Miguel A. Ballicora
FH-405
Phone: 508-3154
e-mail: mballic@luc.edu
Office hours: Tuesday 10 am to 11:30 am or by appointment (e-mail or phone me – be sure that you get a confirmation)
Website:The website will be on Blackboard system. The URL is blackboard.luc.edu.