Plant Biochemistry

CHEM 387 – Fall 2017

Dr. Miguel A. Ballicora (Instructor)

Flanner Hall Room #105: Mondays & Wednesdays 4:15 pm – 5:30 pm

Major Themes

The major themes in this course will be about selected topics in Plant Biochemistry. We will discuss and learn about distinctive areas of biochemistry that are critical for the life of photosynthetic organisms. These are essential to sustain life as a whole in the planet, and the source for our energy and food needs. Main focus will be on metabolism and structure.

The structure of the course will involve lectures by the instructor, student presentations, and discussions. The topic schedule is tentative (see below), since it may slightly change to accommodate the interest generated by the discussions in class. It may also change if needed to accommodate seminars or unexpected situations.

Goals

A successful course will lead the student to gain knowledge of key metabolic paths in plants in order to appreciate the importance of the field in our world and their careers. In addition, the course is designed to develop student's skills to communicate scientific knowledge and how to find resources to answer scientific questions.

Website and Professor-Student Communication

The website will be on *Sakai* and the URL is http://sakai.luc.edu
Students are responsible to check *Sakai* regularly (once a day) as well as the Loyola email account (once a day) for updated information. The instructor will send messages to that e-mail account. Grades will be posted in *Sakai*.

Presentations

Each student will present twice during the semester. Each presentation will be approximately 12 min long, followed by questions and answers (~5 min). The speakers will provide the instructor with the abstract of their presentation on the days indicated later by the instructor. 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 one. Since you will need to have found 3 papers for each round of presentations you should be ready to pick another to present if necessary. There will be three rounds of presentations, so the student is expected to find a total of nine papers, read them, and summarize them.

The emphasis of the selected papers must be molecular structure (protein, lipids, carbohydrates, etc), function, and/or metabolism rather than cells, genetics, or organisms. There will be grade deductions if this is not respected. It is part of the grade choosing an appropriate paper. A handout and a copy of the main literature reference for each presentation must be given to the instructor 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 the instructor the day before (no later than 8 pm). Please talk to the instructor about it.

Participation

The instructor strongly encourages the students to participate in class and interact with other classmates. To facilitate the communication, a discussion forum will be set up in *Sakai*. Students can post questions, answers to other student questions, and anything related to the course.

Reading assignments

No textbook has been assigned for this course. Students are expected to read some papers they will be searching related to the topics. Three summaries will be written, which will be graded and shared with the rest of the class. The instructor will provide proper instructions about all this. Hand outs and web links may also be provided by the instructor.

Grading

Presentation 1	15%
Presentation 2	15%
Mid-term examination 1	15%
Mid-term examination 2	15%
Discussion & participation	5%
Summaries of papers	5%
Quizzes/Assignments	5%
Final examination	25%

The final score of the course will be, rounded, and the letter assigned according to the following table

Letter	Range
A	91-100
A-	85-90
B+	80-84
B	75-79
B-	70-74
C+	65-69
C	60-64
C-	55-59
D+	50-54
D	45-49
F	44 and below

There will be no make up examinations under any circumstance for exams. 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 There will be no make up examination for the final unless there is a **documented** family or medical emergency.

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. 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 (laptop computers, cell phones, iPods, radios, calculators etc.) unless the instructor specifically authorizes them.

Tentative schedule
In a separate sheet, there is the intended schedule for the lectures.

Instructor:
Miguel A. Ballicora
Flanner Hall 405
Phone: 508-3154
e-mail: mballic@luc.edu
Office hours: **Monday and Wednesdays, 1 pm to 2 pm.** *Special meeting hours* could be arranged by appointment (e-mail me – be sure that you get a confirmation)

CHEM 387, Tentative Schedule

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M	8/28	Introduction	1
W	8/30	Photosynthesis	2
M	9/4	LABOR DAY	-
W	9/6	Photosynthesis & CO2 fixation	3
M	9/11	Photosynthesis & CO2 fixation	4
W	9/13	Starch, sucrose, and carbohydrates	5
M	9/18	Starch, sucrose, and carbohydrates	6
W	9/20	Starch, sucrose, and carbohydrates	7
M	9/25	Student Presentations	8
W	9/27	Student Presentations	9
M	10/2	Student Presentations	10
W	10/4	Midterm Exam #1	11
M	10/9	FALL BREAK	-
W	10/11	Cell wall	12
M	10/16	Cell wall	13
W	10/18	N and S metabolism	14
M	10/23	N and S metabolism	15
W	10/25	Student Presentations	16
M	10/30	Student Presentations	17
W	11/1	Student Presentations	18
M	11/6	Discussion	19
W	11/8	Midterm Exam #2	20
M	11/13	Secondary Metabolism. Terpenes	21
W	11/15	Phenolic & Aromatic compounds	22
M	11/20	Alkaloids	23
W	11/22	Thanksgiving BREAK	-
M	11/27	Student Presentations	24
W	11/29	Student Presentations	25
M	12/4	Student Presentations	26
W	12/6	Discussion	27
M	12/11	FINAL EXAM	