

**Syllabus**  
**Proteomics and Structural Proteomics**  
**386/365/465 Fall 2011**  
**Dr. Dali Liu**

**Tuesday & Thursday – 5:45- 7:00 pm LSB 315**

#	Day	Date	Topic
1	Tu	8/30	<i>Genomics to Proteomics</i>
2	Th	9/1	<i>Protein Chemistry Review</i>
3	Tu	9/6	<i>Protein Separations</i>
4	Th	9/8	<i>Protein Identification</i>
5	Tu	9/13	<i>Protein Quantitation</i>
6	Th	9/15	<i>Proteomics and the analysis of Protein Sequences</i>
7	Tu	9/20	<i>Mass Spec principles</i>
8	Th	9/22	<i>Mass Spec in proteomics</i>
9	Tu	9/27	<i>Mass Spec in proteomics</i>
10	Th	9/29	<i>X-ray Crystallography</i>
11	Tu	10/4	<i>X-ray Crystallography</i>
12	Th	10/6	<i>Mid-Term Examination (Exclude X-ray Crystallography)</i>
	<b>Tu</b>	<b>10/11</b>	<b><i>Mid-Term Break – no class</i></b>
13	Th	10/13	<i>Structural Biology. Using Chimera or Pymol</i>
14	Tu	10/18	Homology Modeling (Dr. Ballicora)
15	Th	10/20	Homology Modeling (Dr. Ballicora)
16	Tu	10/25	Homology Modeling (Dr. Ballicora)
17	Th	10/27	Protein Dynamics
18	Tu	11/1	Principles of Molecular Dynamics Simulation
19	Th	11/3	Interaction Proteomics
20	Tu	11/8	Interaction Proteomics
21	Th	11/10	Protein Chips and Functional Proteomics.
22	Tu	11/15	Proteomics Applications & System Biology.
23	Th	11/17	Student Presentations
24	Tu	11/22	Student Presentations
	<b>Th</b>	<b>11/24</b>	<b><i>Thanksgiving Break – no class</i></b>
25	Tu	11/29	Student Presentations
26	Th	12/1	Student Presentations
27	Tu	12/6	Student Presentations
28	Th	12/8	Student Presentations
29	Tu	12/13	<b>No Class</b>
30	Th	12/15	Final Exam

**Grading: 30% Mid-Term, 10% Homology modeling project, 10% homework, 20% Student Presentation, 30% Final**

**Grade Table**

Letter	Range (%)
A	95 or more
A-	90-94
B+	85-89
B	80-84
B-	75-79
C+	70-74
C	65-69
C-	60--65
D+	55-59
D	50-54
F	Below 50

\*Curve may be applied at instructor's discretion.

For the homology-modeling project, you must include analyses of your model. It also most includes at least two diagrams showing the model structure by itself and the structure compared to the template(s). You need to demonstrate where the model differs from the template structure.

For the student presentation, you need to select a recent research paper involving proteomics as defined by the topics covered in this course. You need to submit a list of 5 potential papers to me no later than Tuesday, 11/9, in order of your preference to present them. The instructor will make sure that there are no duplications. You need to send me a pdf of your paper and copy of your powerpoint presentation a week before you are to present. The presentation schedule will be arranged in early October. The presentations must be 13 – 15 minutes long. The grading will be done by both your classmates (50%) and the instructor (50%) in 3 categories, knowledge, clarity and presentation.

The final exam will include everything cover since the mid-term, including the student presentations.

**It should be obvious that all answers on examinations must arise from independent, honest efforts. Any student found cheating will receive an automatic “0” for that examination and his (her) name will be brought to the attention of the Chair of the Department and the Dean of the College, who will decide if further disciplinary action is necessary.**

**Text Books:**

Principles of Proteomics by R. M. Twyman, 2004, Taylor and Francis

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Introducing Proteomics: From concepts to sample separation, mass spectrometry and data analysis, Josip Lovric

Two textbooks will be used as optional material. You can have either; they are going to help you and good for future studies on your own. The instructor will extract contents from both of them in the class.

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**Office Hours:** 2:30-4:00 Tu Th or by appointment.

**Blackboard:** I plan to use the Blackboard website ([blackboard.luc.edu](http://blackboard.luc.edu)) for all class notes and announcements. Please see the attached handout for instructions on how to use this site. **It is essential that you access the site regularly to do well in this class.**