Chem 365/465
Proteomics
Dr. Ken Olsen
Spring 2017
Monday & Wednesday – 7:00- 8:15 pm
Cuneo 109

#	Day	Date	Topic	Reading
1	W	1/18	Protein Structure – background	pp. 108-110
2	M	1/23	Molecular graphics – VMD software	web refs
3	W	1/25	Introduction to Proteomics	1
4	M	1/30	Protein Separations	2
5	W	2/1	Protein Separations	2
6	M	2/6	Protein Identification	3
7	W	2/8	Protein Identification	3
8	M	2/13	Protein Quantitation	4
9	W	2/15	Homology Modeling	5
10	M	2/20	Homology Modeling	5
11	W	2/22	Model Verification	5
12	M	2/27	Homology Modeling Assignment	Handout
13	W	3/1	X-Ray Crystallography of Proteins	pp. 114-118
	M	3/6	Mid-term break – no class	
	W	3/8	Mid-term break – no class	
14	M	3/13	X-Ray Crystallography of Proteins	pp. 114-118
15	W	3/15	Structural Proteomics	6
16	M	3/20	Structural Proteomics	6
17	W	3/22	Mid-Term Examination	1-5
18	M	3/27	Molecular Mechanics	Handout
19	W	3/29	Energy Minimization	Handout
20	M	4/3	Molecular Dynamics	Handout
21	W	4/5	Molecular Dynamics Assignment	Handout
22	M	4/10	Interaction Proteomics	7
23	W	4/12	Interaction Proteomics	7
24	M	4/17	Protein Modifications	8
25	W	4/19	Protein Modifications	8
26	M	4/24	Protein Chips	9
27	W	4/26	Proteomics Applications	10
	M	5/1	Final Exam at 7 pm	

Grading: 25% Mid-Term, 5% VMD Graphics 10% Homology modeling project, 15% on MD project, 10% homework, 25% Final

For the homology modeling project, you must include analyses of your model using Verify 3D. It also most include 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.

The molecular dynamics assignment will include setting up the files to run an MD simulation and analyzing the data. The data will come from simulations already run in my laboratory because we will not have enough time to run them ourselves.

The final exam will include everything cover since the mid-term.

It should be obvious that all answers on examinations must arise from independent, honest efforts. Nothing less is acceptable at Loyola. Thus, any student found cheating on any test 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: *Principles of Proteomics* by R. M. Twyman, 2nd Edition, 2014, Garland Science

You should read the appropriate chapter **before** class. Please realize that I will not have time to lecture on every topic but will emphasize what I consider to be the most important topics. Obviously, these more important topics will be emphasized on examinations but you are responsible for all of the text and lecture material.

Contact: Dr. Ken Olsen
                 Flanner 409
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                 kolsen@luc.edu (e-mail is the best way to get in touch with me)

Office Hours: After class on MW evenings or by arrangement.

Blackboard: I plan to use the Sakai website (sakai.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.