

Chemistry 361/461
Survey in Biochemistry
Summer Session I 2012

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Class: 1-4 pm on MWTh in Dumbach 120

TENTATIVE SCHEDULE OF LECTURES AND QUIZZES

| # | Day | Date | Subject | Chapters | Lecture |
|----|----------|-------------|------------------------------------|-------------------|---------|
| 1 | M | 5/21 | Introduction | 1 | 1.1 |
| | | | Biomolecules | 1 | 1.2 |
| | | | Water & pH | 1 | 1.3 |
| 2 | Tu | 5/22 | Amino Acids, Peptides and Proteins | 2 | 2.1 |
| | | | Exploring Proteins | 3 | 2.3 |
| 3 | W | 5/23 | Exploring Proteins | 3 | 2.3 |
| | | | Flow of Genetic Information | 4 | 3.1 |
| 4 | Th | 5/24 | Genetic Code | 4 | 3.1 |
| | | | Exploring Genes | 5 | 5.1 |
| 5 | F | 5/25 | Discussion | 1 – 3 | |
| | | | Test 1 | 1 – 3 | |
| | M | 5/28 | Memorial Day – no class | | |
| 6 | Tu | 5/29 | Exploring Genes | 5 | 5.1 |
| | | | Hemoglobin | 7 | 6.1 |
| 7 | W | 5/30 | Enzymes: Basic Concepts & Kinetics | 8 | 6.2 |
| | | | Enzymes: Catalytic Strategies | 9 | 6.3 |
| 8 | Th | 5/31 | Regulation: Enzymes | 10 | 7.1 |
| | | | Carbohydrates | 11 | 8.1 |
| 9 | F | 6/1 | Discussion | 4, 5, 7-10 | |
| | | | Test 2 | 4, 5, 7-10 | |
| 10 | M | 6/4 | Lipids and Membranes | 12 | 9.1 |
| | | | Channels and Pumps | 13 | 9.2 |
| | | | Signal Transduction | 14 | 10.1 |
| 11 | Tu | 6/5 | Signal Transduction | 14 | 10.1 |
| | | | Metabolism and Bioenergetics | 15 | 11.1 |
| | | | Glycolysis and Gluconeogenesis | 16 | 11.2 |
| 12 | W | 6/6 | Glycolysis and Gluconeogenesis | 16 | 11.2 |
| | | | Citric Acid Cycle | 17 | 12.1 |
| 13 | Th | 6/7 | Oxidative Phosphorylation | 18 | 12.2 |
| | | | Pentose Phosphate Pathway | 20.3-20.4 | 13.1 |
| 14 | F | 6/8 | Discussion | 10 - 18 | |
| | | | Test 3 | 10-18 | |
| 15 | M | 6/11 | Glycogen Metabolism | 21 | 13.2 |

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|----|----|------|-----------------------------|--------------------------|------|
| | | | Fatty Acid Metabolism | 22 | 14.1 |
| 16 | Tu | 6/12 | Amino Acid Oxidation | 23 | 15.1 |
| | | | Amino Acid Biosynthesis | 24 | 15.2 |
| 17 | W | 6/13 | Biosynthesis of Nucleotides | 25 | 16.1 |
| | | | Lipid Biosynthesis | 26 | 16.2 |
| 18 | Th | 6/14 | Integration of Metabolism | 27 | 17.1 |
| | | | Discussion | 20 – 27 | |
| 19 | F | 6/15 | Final Examination | 20 – 27 plus 1-18 | |

Required Text: Berg, Tymoczko and Stryer, *Biochemistry*, 6th or 7th Ed. or Berg, Tymoczko and Stryer, *Biochemistry – A Short Course*, 1st or 2nd Ed. or any other good biochemistry text. The reading assignments are listed for the big Stryer text but you can look for the topics in any available text. If you are having problems please see me after class.

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, lecture and discussion material. **Use the lectures as a guide to what I think is important.**

Recommended Text: If you are using the longer version of Stryer's textbook and want the answers to the problems or just want additional problems to work, Gumpert, *et al.* (2006) *Student Companion to Accompany Biochemistry*, 6th Ed. If using 6th edition of the text. Deis, *et al.* (2011) 7th edition if using the 7th edition.

Office Hours: After class any afternoon. You can also make an appointment by e-mailing me if this is not a good time for you.

Grading Policy: There are 3 tests and a final examination during the course. There will be 100 points possible on each test and 200 on the final. The final examination will be 50% on new material and 50% on the material covered in Tests 1 to 3. If one of the regular examinations is the lowest score, it will be dropped and the final will count 200 points. If the final examination is the lowest score, then all five examinations will count 100 points each. Thus the course grade will be determined on the basis of 400 possible points. No make-up tests will be given. If you miss a test for any reason, then your final will automatically count 200 points. If you miss more than one test a make-up examination will be given at my discretion. Minimally, a written doctor's or judge's note and notification prior to the quiz (via phone or e-mail) will be needed for any missed quiz to be made up.

Note that the last day to withdraw from the course without getting a WF is Friday, June 10.

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 quiz 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.

- Blackboard:** I plan to use the Blackboard website (blackboard.luc.edu) for all class notes and announcements. Please ask me for a handout for instructions on how to use this site if you are not already familiar with it. It is essential that you access the site regularly to do well in this class.
- Help Sessions:** We will have a discussion section for the hour before each exam to answer last minute questions you have on the material. If there are a lot of questions, these discussions can go longer until everyone is satisfied that they understand the material. This is in addition to the regular office hours.
- Problem:** I will be posting problem sets followed by answers. I hope that these are a help in preparing for the examinations.
- Examinations:** The examinations will all be multiple choice questions.
- Chem 461:** Graduate students and undergraduates contracting this course for honors will also read Chapter 6 on Evolution and Bioinformatics and will do a homology modeling assignment.