**Chemistry 4055 (Spring 2013)**

**Biochemistry I**

**11:30 am – 12:50 pm CN-142, Tuesday & Thursday**

**Arthur Tinoco, CN-224, Arthur.david.tinoco@gmail.com**

**Office Hours- 9-11 am, Tuesday & Wednesday**

**Website- http://chemistry4055-atinoco.weebly.com/**

**Facebook page- UPR RP Biochemistry I (Spring 2013)**

**Textbook:** Lehninger’s Principles of Biochemistry 6th edition

By: David L. Nelson and Michael M. Cox

|  |  |  |
| --- | --- | --- |
| **Date** | **Topic** | **Assignment Due** |
| Jan 10 | Introduction to the Course (Chapter 1) |  |
| Jan 15 | Chapter 2-Water |  |
| Jan 17 | Chapter 3(L1)- Amino acids, Peptides, and Proteins |  |
| Jan 22 | Chapter 3(L2) |  |
| Jan 24 | Chapter 4(L1)- The 3D Structure of Proteins |  |
| Jan 29 | Chapter 4(L2) | HW Ch 1-4(L1) |
| Jan 31 | Chapter 5(L1)- Protein Function |  |
| Feb 5 | Test 1 [Ch 1-4(L1)] |  |
| Feb 7 | Chapter 5(L2) |  |
| Feb 12 | Chapter 6(L1)- Enzymes |  |
| Feb 14 | Chapter 6(L2)-Enzyme Kinetics |  |
| Feb 19 | Chapter 6(L3)-Enzyme Inhibition |  |
| Feb 21 | Protein Mechanism;  Introduction to Paper Assignment |  |
| Feb 26 | Chapter 7(L1)- Carbohydrates and Glycobiology | HW Ch 4(L2)-6 and Protein Mechanism Lecture |
| Feb 28 | Chapter 7(L2) |  |
| Mar 5 | No class |  |
| Mar 7 | Chapter 8(L1)- Nucleotides and Nucleic Acids |  |
| Mar 12 | Test 2 [Ch 4(L2)-6, and Protein Mechanism] |  |
| Mar 14 | Chapter 8(L2) |  |
| Mar 19 | Chapter 9- DNA-Based Information Technologies |  |
| Mar 21 | Chapter 10(L1)-Lipids |  |
| Mar 26 | Chapter 10(L2) | HW Ch 7-9 |
| Mar 28 | No Class |  |
| Apr 2 | Chapter 11- Biological Membranes and Transport |  |
| Apr 4 | Test 3 [Ch 7,8,9] |  |
| Apr 9 | Chapter 14(L1)- Glycolysis and Gluconeogenesis |  |
| Apr 11 | Chapter 14(L2) | Paper Assignment |
| Apr 16 | Chapter 16(L1)- The Citric Acid Cycle | HW Ch 10, 11, 14 |
| Apr 18 | Chapter 16(L2) |  |
| Apr 23 | Test 4 [Ch 10, 11, 14] |  |
| Apr 25 | Chapter 19(L1)-Oxidative Phosphorylation |  |
| Apr 30 | Chapter 19(L2)/ Review |  |
| May 2 | No Class | HW Ch. 16 and 19  Due in my Office |
| May 7-14 To be announced. | Comprehensive Final |  |

**Requirements:**

1. Calculator- For all homework assignments and exams.

2. Access to UPR RP Journal search engines.

**Course Information:** The most current information for the course can be obtained from the class website. You will find there a copy of this syllabus, announcements, homework keys, exam keys, class powerpoint slides, and supplemental information. Please check this site frequently. Feel free to contact me at arthur.david.tinoco@gmail.com or if you have a general question then post it to the class Facebook page. For further help also feel free to contact Aideliz Nunez, the course TA (nunez.aideliz@live.com).

**Grading Policy**

**Homework.** Homework assignments will be posted on the website and due dates are posted on this syllabus. Together, graded homework assignments will constitute 25%.

**Exams.** Four exams will be given in class on the dates listed. Each exam will be multiple choice. Together, the exams will constitute 40% of your final grade.

**Paper Assignment.** You will have to submit a paper on a specific enzyme topic following protocols to be discussed on the date listed. The purpose of this paper is to expose you to journal search engines and to scientific writing in the form of research articles. There is a large selection of full-text biochemistry journals available on-line through the University’s webpage at http://atoz.ebsco.com/Titles/3734 but please note that papers from review journals or non-referenced journals will not be accepted. This assignment will constitute 15% of your final grade.

**Final Examination.** The 120-minute final examination is required, and comprehensive. It will be multiple choice and constitute 20% of your final grade.

**Grading Summary.** Listed below is the overall breakdown of the grading scheme for the course. I will use the numerical score obtained using this scheme to guide me in assigning your final grade. Your exact final grade will be assigned based on my evaluation of your understanding of the subject material. I will be most happy to discuss your standing in the class at any time.

Homework: 25%

Exams (4): 40%

Paper: 15%

Final: 20%

**Make-up Policy.** While attendance is not mandatory it is highly recommended as exams will be based on material specifically discussed in class. Notify me as soon as possible if you are unable to take an exam because of illness or other extraordinary circumstances.

**Note.** Students who receive **Vocational Rehabilitation** servicesneed to communicate with the professor at the start of the semester so that a plan can be devised to provide reasonable accommodation and assistive equipment in accordance with the recommendations of the “Oficina de Asuntos para Personas con Impedimento (OAPI) del Decanato de Estudiantes.” Also students with special needs that require additional assistance or accommodation need to communicate with the professor.

**Supplementary Material.** For additional information please refer to any research articles cited during lectures. Also the following textbooks can be very helpful.

Reginald H. Garrett and Charles M. Grisham *Biochemistry* 5th Edition.

Donald Voet, Judith G. Voet, and Charlotte W. Pratt. *Fundamentals of Biochemistry* 4th Edition.

Also a Spanish version of the 5th edition of Lehninger’s Principles of Biochemistry is available.