Biochemistry I (Chemistry 371/650) – Spring 2016

(Pre-requisite: Grade of C or Higher in CHEM 252.4, 252.1 and BIOL 105)
Department of Chemistry & Biochemistry
Queens College – CUNY
65-30 Kissena Blvd.
Flushing, NY 11367

Lectures – Tuesday & Thursday (12.10 – 2 PM); Remsen 017
Professor Sanjai Kumar, Ph.D.
Email: Sanjai.Kumar@qc.cuny.edu
Office Hours: Wednesday and Thursday between 2.15 PM – 3 PM in Remsen 117C or 256 (Lab)

Course Structure:

(i) Text – Lehninger Principles of Biochemistry by David L. Nelson and Michael M. Cox,
(ii) Two Midterms (30% Each) & a Final Examination (40%)

General Guidelines:

You must appear in all three class examinations. Please note that there will be NO makeup examination. In case of an emergency that you are unable to attend an examination, a legal valid proof of absence must be presented. In the event that you are unable to furnish a valid proof of absence within a reasonable time period, a zero grade will be assigned for the examination. It is strongly recommended that you study the ‘Reading Assignments’ listed in this syllabus. It is anticipated that the reading assignments will help you understand the lecture material more effectively.

You must obtain a valid Queens College email id, so you can access the course materials online, posted periodically on the Blackboard version 8.0. The use of cell phones is NOT permitted during the class and during the periods of examination. Use of a scientific calculator is permitted during the examination. If you need extra help with the course, please do not hesitate to ask me.

**Only Applicable to Chem 650 Students: As part of this course, you are required to write a mini research review article (4-6 pages, single spacing, font size 11), and submit it electronically (Email: Sanjai.Kumar@qc.cuny.edu) on or before May 10th, 2016 (NO late submission will be accepted). More information (e.g. topic) about this task will be provided by Prof. Kumar in the class.

Tentative Schedule of Classes and Examinations (Subject to modifications, when required):

Feb 2nd – Chapter 1 – Foundations of Biochemistry
Feb. 4th and Feb 11th – Chapter 2 & 3 – Structure of Water; Amino Acids, Peptides and Proteins
Feb. 16th – Chapter 4 – The 3-D Structure of Proteins
Feb. 18th and Feb. 23rd – Chapter 5 – Protein Function (Hemoglobin and Allosteric Regulation)
Midterm Examination 1 – March 1st (Tuesday), 2016

Feb. 25th and Mar. 3rd - Chapter 6 – Enzyme Catalysis and Enzyme Kinetics
Mar. 8th – Chapter 7 – Carbohydrates and Glycobiology
Mar. 10th and Mar. 15th – Chapter 10 and 11 – Lipids; Biological Membrane and Transport
Mar. 17th – Chapter 12 – Signal Transduction
Mar. 22nd – Chapter 13 – Bioenergetics and Introduction to Metabolism
Mar. 24th, Mar. 29th, Mar. 31st, April 5th – Chapter 14th and Chapter 15th – Glycolysis, Gluconeogenesis, and the Pentose Phosphate Pathways; Glycogen Metabolism

Midterm Examination 2 – April 12th (Tuesday), 2016

Apr. 7th and Apr. 14th – Chapter 16 – The Citric Acid Cycle
Apr. 19th and Apr. 21st – Chapter 17 – Fatty Acid Catabolism
May 3rd – Chapter 18 – Amino Acid Oxidation & The Production of Urea
May 5th and May 10th – Chapter 19 – Oxidative Phosphorylation
May 12th and May 17th – Chapter 23 - Integration of Metabolism; Final Thoughts and REVIEW

FINAL EXAMINATION – To be announced by the Registrar’s Office

Reading Assignments:

(From 6th Edition)

Chapter 1 (Page 2-35); Chapter 2 (47-69); Chapter 3 (75-104); Chapter 4 (115-149); Chapter 5; Chapter 6 (189-228); Chapter 7 (243-274); Chapter 10 (357-380); Chapter 11; Chapter 12 (433-438 and 484-488); Chapter 13; Chapter 14; Chapter 15 (612-626); Chapter 16; Chapter 17 (667-688); Chapter 18; Chapter 19 (731-762), Chapter 23 (929-961)

OR

(From 5th Edition)

Chapter 1 (Page 2-33); Chapter 2 (43-68); Chapter 3 (71-102); Chapter 4 (113-148); Chapter 5; Chapter 6 (184-227); Chapter 7 (235-263); Chapter 10 (343-357); Chapter 11; Chapter 12 (419-455 and 469-478); Chapter 13; Chapter 14; Chapter 15 (595-608); Chapter 16; Chapter 17 (647-668); Chapter 18; Chapter 19 (707-742); Chapter 23 (901-935)