Biochemistry I (Chemistry 371/650) – Fall 2017
(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 101
Professor Sanjai Kumar, Ph.D.
Email: Sanjai.Kumar@qc.cuny.edu
Office Hours: Tuesday and Thursday between 10 - 11 AM in Remsen 117C or 256 (Lab)

Course Structure:


(ii) 2 Midterms (30% Each) & a Final Cumulative Examination (40%)

General Guidelines:
You must appear in all four 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. All course-related announcements will be posted on Blackboard. The use of cell phones is NOT permitted during the class and during the periods of examination. Use of only a scientific calculator is permitted during the examination. If you need extra help with the course, please do not hesitate to ask me. Please note that the Final Examination is CUMULATIVE.

**Only Applicable to Chem 650 Students: As part of this course, you are required to write a mini research review article (4-6 pages (excluding References), 1.5 spacing, font size 11), and submit it electronically (Email: Sanjai.Kumar@qc.cuny.edu) on or before December 10, 2017 (NO late submission will be accepted). The topic of your review is “Cysteine Cathepsins in Cell Signaling”. You can research about this topic on Pubmed (https://www.ncbi.nlm.nih.gov/pubmed/). Please contact me if you have any questions about this. This report will constitute 5% of your total overall grade. [Caution: Be aware of plagiarism]

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

Aug. 29th – Chapter 1 – Foundations of Biochemistry
Aug. 31st and Sept. 5th – Chapter 2 & 3 – Structure of Water; Amino Acids, Peptides and Proteins
Sept. 7th – Chapter 4 – The 3-D Structure of Proteins
Sept 12th and Sept. 14th – Chapter 5 – Protein Function (Hemoglobin and Allosteric Regulation)

Midterm Examination 1 – September 19th (Tuesday), 2017
Sept. 26th and Sept 28th - Chapter 6 – Enzyme Catalysis and Enzyme Kinetics
Oct. 3rd – Chapter 7 – Carbohydrates and Glycobiology
Oct. 5th and Oct. 10th – Chapter 10 and 11 – Lipids; Biological Membrane and Transport
Oct. 12th – Chapter 12 – Signal Transduction
Oct. 17th – Chapter 13 – Bioenergetics and Introduction to Metabolism
Oct. 19th, Oct. 24th, Oct. 26th, Oct. 31st – Chapter 14th and Chapter 15th – Glycolysis, Gluconeogenesis, and the Pentose Phosphate Pathways; Glycogen Metabolism

Midterm Examination 2 – November 7th (Tuesday), 2017

Nov. 2nd and Nov. 9th - Chapter 16th - The Citric Acid Cycle
Nov. 14th and Nov. 16th – Chapter 17 – Fatty Acid Catabolism
Nov. 28th – Chapter 18 – Amino Acid Oxidation & The Production of Urea
Nov. 30th and Dec. 5th – Chapter 19 – Oxidative Phosphorylation
Dec. 7th and Dec 12th – Chapter 23 - Integration of Metabolism; Final Thoughts and Review

THE FINAL CUMULATIVE EXAMINATION – To Be Announced

Recommended Reading Assignment:

(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)