Biochemistry I (Chemistry 371/650) – Summer 2016

Department of Chemistry & Biochemistry
Queens College – CUNY
65-30 Kissena Blvd.
Flushing, NY 11367

June 6 – August 15, 2016  10 weeks, 4 credits
(Pre-requisite: Grade of C or higher in CHEM 252.4, 252.1 and BIOL 105)

Lectures – Monday, Tuesday & Thursday (11AM – 12:30 PM); Razran 109
Instructors: Prof. Sanjai Kumar & Prof. Susan A. Rotenberg
Email: Sanjai.Kumar@qc.cuny.edu
Email: Susan.Rotenberg@qc.cuny.edu

Office Hours: Prof. Kumar (Mondays and Thursdays 1:30 PM – 2:15 PM), Remsen 117
Prof. Rotenberg (Mondays and Thursdays 1:30 – 2:15 PM), Remsen 117

Course Structure
(ii) 3 midterm exams & final exam (non-cumulative) - 25% each

General Guidelines
This course is standard first semester course in Biochemistry. It has two parts that will be taught by two instructors: Prof. Sanjai Kumar (Part I) and Prof. Susan A. Rotenberg (Part II).

You must take 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. The use of cell phones is NOT permitted during the class and during examinations.

It is strongly recommended that you study the ‘Reading Assignments’ listed in this syllabus. These assignments will help you to understand the lecture material with greater depth.

All course-related announcements will be posted on Blackboard (an on-line site). You must obtain a valid Queens College email id, so you may access these course materials.
Schedule of Classes and Examinations (subject to change):

**Part I: Proteins and Enzymes (June 6 – July 7)**

June 6<sup>th</sup> – Chapter 1 – Foundations of Biochemistry  
June 7<sup>th</sup> and June 9<sup>th</sup> – Chapter 2 & 3 – Structure of Water; Amino Acids, Peptides and Proteins  
June 13<sup>th</sup> – Chapter 4 – The 3-D Structure of Proteins  
June 14<sup>th</sup> and June 16<sup>th</sup> – Chapter 5 – Protein Function (Hemoglobin and Allosteric Regulation)

**Midterm Examination 1 – June 20<sup>th</sup> (Monday), 2016**

June 21<sup>st</sup> and June 23<sup>rd</sup> - Chapter 6 – Enzyme Catalysis and Enzyme Kinetics  
June 27<sup>th</sup> – Chapter 7 – Carbohydrates and Glycobiology  
June 28<sup>th</sup> and June 30<sup>th</sup> – Chapter 10 and 11 – Lipids; Biological Membrane and Transport  
July 5<sup>th</sup> – Chapter 12 – Signal Transduction and Review

**Midterm Examination 2 – July 7<sup>th</sup> (Tuesday), 2015**

**Part II: Metabolism (July 11 – August 15)**

July 11<sup>th</sup> – Chapter 13 – Bioenergetics and Introduction to Metabolism  
July 12<sup>th</sup>, July14<sup>th</sup>, July 18<sup>th</sup>, July 19<sup>th</sup> – Chapter 14<sup>th</sup> and Chapter 15<sup>th</sup> – Glycolysis, Gluconeogenesis, and the Pentose Phosphate Pathway; Glycogen Metabolism  
July 21<sup>st</sup> and July 25<sup>th</sup> - Chapter 16<sup>th</sup> - The Citric Acid Cycle

**Midterm Examination 3 – July 26<sup>th</sup> (Tuesday), 2016**

July 28<sup>th</sup> and Aug 1<sup>st</sup> – Chapter 17 – Fatty Acid Breakdown and Synthesis  
Aug. 2<sup>nd</sup> – Chapter 18 – Amino Acid Breakdown & The Urea Cycle  
Aug. 8<sup>th</sup> and Aug 9<sup>th</sup> – Chapter 19 – Oxidative Phosphorylation  
Aug. 11<sup>th</sup> – Chapter 23 - integration of metabolic pathways; Review

**FINAL EXAMINATION – August 15<sup>th</sup> (Monday)**

**Recommended 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)