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
(i) Textbook – Lehninger Principles of Biochemistry by David L. Nelson and Michael M.
1-4292-3414-6
(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 6th – Chapter 1 – Foundations of Biochemistry  
June 7th and June 9th – Chapter 2 & 3 – Structure of Water; Amino Acids, Peptides and Proteins  
June 13th – Chapter 4 – The 3-D Structure of Proteins  
June 14th and June 16th – Chapter 5 – Protein Function (Hemoglobin and Allosteric Regulation)

**Midterm Examination 1 – June 20th (Monday), 2016**

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

**Midterm Examination 2 – July 7th (Tuesday), 2015**

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

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

**Midterm Examination 3 – July 26th (Tuesday), 2016**

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

**FINAL EXAMINATION – August 15th (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)