

**Brooklyn College of the City University of New York**  
**Department of Chemistry**  
**Spring 2018 Syllabus – Professor Davenport**  
**Chemistry 4571 EMW6 (32206) / Chemistry 7571G EMW6 (32221)**  
**Biochemistry I: Introductory Biochemistry**  
**(3 credits; 3 hours)**

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**Course Goals and Learning Objectives.** The goal of this course is to provide students with the fundamentals of introductory biochemistry. Students will become proficient in the structure/function properties of biological macromolecules. Lectures will focus on: the properties of water; amino acids; proteins; enzymes; nucleic acids; lipids and membranes; carbohydrates; with an introduction to carbohydrate metabolism and oxidative phosphorylation. Students will also be introduced to biochemical methodologies used for purification of complex biomolecules and the elucidation of their structures.

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**Required Text:**

Biochemistry, 4<sup>th</sup> edition, C.K. Mathews, K.E. van Holde, D.R. Appling and S.J. Anthony-Cahill. Pearson, 2013 (ISBN: 978-0-13-800464-4).

**Recommended Text:**

Biochemistry, 8<sup>th</sup> edition, J.M. Berg, J.L. Tymoczko, G.J. Gatto, Jr. and L. Stryer. W.H. Freeman and Co., New York, 2015 (ISBN: 1-46-412610-0).

**Supplementary Material:**

Practice problems taken from: Biochemical Calculations, 2<sup>nd</sup> edition, I.H. Segel (John Wiley & Sons) will be posted on Blackboard.

**Note:** Lecture notes are posted using Blackboard. Please ensure that you have access to this class through Blackboard, and check that the posted email address is the one that you access regularly.

**Attendance:**

Chemistry 4571 and 7571G are not on-line courses and to do well, attendance in lectures is highly recommended. Attendance will be recorded, but not graded.

**Instructor Contact Information:**

Professor Lesley Davenport  
Email: [LDvnport@brooklyn.cuny.edu](mailto:LDvnport@brooklyn.cuny.edu)  
Tel: 718-951-5000 (ext. 2825)

**Office Hours (344NE):**

Monday: 2:00pm – 3:00pm  
Tuesday: 2:00pm – 3:00pm  
Wednesday: 8:00pm – 9:00pm  
And by appointment (please email first).

**Examination Dates (Chem. 4571 and 7571G students):**

First Lecture Examination:

Monday, March 5<sup>th</sup>, 2018 (6:30pm – 7:45pm)

Second Lecture Examination:

Wednesday, April 18<sup>th</sup>, 2018 (6:30pm – 7:45pm)

Final Lecture Examination:

Wednesday, May 23<sup>rd</sup>, 2018 (6:00pm – 8:00pm)

**Term Paper (Chem. 7571 students ONLY):**

Due (electronically) before midnight on May 7<sup>th</sup>, 2018.

**Schedule of Lectures:**

Class meets weekly (6:30pm – 7:45pm) in 1127N.  
January 29<sup>th</sup> - May 16<sup>th</sup>, 2018.

Makeup Class: Tuesday, February 20<sup>th</sup>, 2018.

No Classes: Mondays: February 12<sup>th</sup>, February 19<sup>th</sup>, 2018.

Spring Recess: March 30<sup>th</sup> – April 8<sup>th</sup>, inclusive.

**Important Dates (2018):**

Friday, February 2: Last day to add a course

Sunday, February 16: Last day to drop a course without a “W” grade.

Monday, April 16: Last day to withdraw from a course with a “W” (non-penalty) grade.

Friday, April 20: Last day to resolve Fall 2017 incomplete (INC) grades.

### **Lecture Topics:**

#### **Topic 1: Introduction to Biochemistry**

Chapter 1 (M): Scope of Biochemistry  
Chapter 2 (M): The Matrix of Life  
Chapter 3 (M): The Energetics of Life

#### **Topic 2: Amino Acids, Proteins and Enzymes**

Chapter 5: Introduction to Proteins  
Chapter 6: The 3D-Structures of Proteins  
Chapter 7: Protein Function and Evolution  
Chapter 11: Enzymes: Biological Catalysts

#### **Topic 3: Nucleic Acids**

Chapter 4: Nucleic Acids  
Chapter 25: Replication  
(pp 1036-1041; 1045-1050)  
Chapter 26: Repair (pp 1077-1092)  
Chapter 27: Transcription (pp 1125-1143)  
Chapter 28: Translation (pp 1173-1190)

#### **Topic 4: Lipids and Membranes**

Chapter 10: Lipids, Membranes and Cellular Transport

#### **Topic 5: Carbohydrates & Introductory Metabolism**

Chapter 9: Carbohydrates  
Chapter 13: Carbohydrate Metabolism  
(pp 520-525)  
Chapter 14: Citric Acid Cycle (pp 592-598)  
Chapter 15: Oxidative Phosphorylation  
(pp. 625-628; 643-646)

### **Grade Breakdown:**

**Chem. 4571:** Final grades are calculated as an average of two midterm exams and a final lecture examination.

The grade breakdown is as follows:

**33%** first lecture exam grade

**33%** second lecture exam grade

**34%** final lecture exam grade

Exams will be based on lecture material and will include: true/false; multiple choice; and matching column type questions to test your factual knowledge and understanding of concepts. Please note that there are NO makeup exams. Unjustified absences on midterm exams will be assigned a grade of zero (0). For justified absences (e.g. unavoidable issues; doctor's note), your semester average will be based on the grades from your other two exams. Please note that you will not receive a grade for the course if you miss two mid-term lecture exams or the final lecture exam. No "extra-credit projects" will be accepted.

**Chem. 7571G:** Final grades are calculated as an average of two midterm exams and a (non-cumulative) final lecture examination plus a term paper (due electronically by midnight on **Monday, May 7<sup>th</sup>, 2018**).

The grade breakdown is as follows:

**25%** first lecture exam grade

**25%** second lecture exam grade

**25%** final lecture exam grade (cumulative)

**25%** term paper

Please upload a copy of your selected term paper by midnight on Monday, March 12<sup>th</sup> using the Assignments folder found in Blackboard.

Exams will be based on lecture material and include: true/false; multiple choice; and matching column type questions to test your factual knowledge and understanding of concepts. Please note that there are NO makeup exams. Unjustified absences on midterm exams will be assigned a grade of zero (0). For justified absences (e.g. unavoidable issues; doctor's note), the semester average will be based on the other two exams. Please note that you will not receive a grade for the course if you miss two mid-term lecture exams or the final lecture exam. No "extra-credit projects" will be accepted.

**Honors (H) Credit:** Please discuss the option with Professor Davenport if you are planning to take this class for honors credit. A letter grade of B or better in the course is required in order to receive Honors credit for this course. Please upload a copy of your selected research paper by midnight on Monday, March 12<sup>th</sup> using the Assignments folder found in Blackboard.

### **Accommodations for Students with**

**Disabilities:** In order to receive disability-related academic accommodations, students must first be registered with the Center for Student Disability Services. Students who have a documented disability or suspect they may have a disability are invited to set up an appointment with the Director of the Center for Student Disability Services, Ms. Valerie Stewart-Lovell ([vstewart@brooklyn.cuny.edu](mailto:vstewart@brooklyn.cuny.edu)) at 718-951-5538 in Room 138 Roosevelt Hall. If you have already registered with the Center for Student Disability Services, please provide your professor with the course accommodation form and discuss your specific accommodation with him/her.

**Academic Integrity:** The faculty and administration of Brooklyn College support an environment free from cheating and plagiarism. Each student is responsible for being aware of what constitutes cheating and plagiarism and for avoiding both. The complete text of the CUNY Academic Integrity Policy and the Brooklyn College procedure for implementing that policy can be found at this site: <http://www.brooklyn.cuny.edu/bc/policies>. If a faculty

member suspects a violation of academic integrity and, upon investigation, confirms that violation, or if the student admits the violation, the faculty member MUST report the violation. All students should read carefully and thoroughly the 2017-2018 Brooklyn College Bulletin:

(<http://www.brooklyn.cuny.edu/web/about/administration/enrollment/registrar/bulletins.php>) for a complete listing of academic regulations of the College.

The state law regarding non-attendance because of **religious beliefs** shall be followed as given in the 2017-2018 Brooklyn College Bulletin, Undergraduate Programs:

(<http://www.brooklyn.cuny.edu/web/about/administration/enrollment/registrar/bulletins.php>)