

Brooklyn College of the City University of New York
Department of Chemistry
Spring 2019 Syllabus – Professor Davenport
Chemistry 4581 ET6 (29193) / Chemistry 7581G ET6 (29207)
Biochemistry II: Intermediary Metabolism
(3 credits; 3 hours)

Course Goals and Learning Objectives. The goal of this course is to provide students with an introduction to intermediary biochemical metabolism. Specifically students will become proficient in the fundamental key metabolic pathways for carbohydrates, lipids and selected amino acids, along with associated metabolic disorders. Students are also introduced to biochemical methodologies used for elucidation of metabolic pathways including basic metabolomic approaches for screening altered cellular states.

Recommended Texts:

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

Biochemistry, 8th 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). The 5th edition (2002) is freely searchable from the NCBI/NIH Bookshelf: (<https://www.ncbi.nlm.nih.gov/books/NBK21154/?depth=10>).

Supplementary Materials:

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.

Note: For exam preparation, biochemistry multiple choice practice questions are freely available from on-line test banks. Using your web browser, type in: "biochemistry multiple choice questions".

Attendance:

Chemistry 4581 and 7581G 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: LDvnpport@brooklyn.cuny.edu
Tel: 718-951-5000 (ext. 2825)

Office Hours (344NE):

Tuesday: 1:30pm – 3:00pm
Wednesday: 5:30pm – 7:00pm
And by appointment (please email first).

Examination Dates 2019 (Chem. 4581 and 7581G students):

(Lecture exams are non-cumulative). **Please bring your BC/CUNY ID card to the exams.**

First Lecture Examination:

Tuesday, March 5th.

Second Lecture Examination:

Tuesday, April 9th.

Final Lecture Examination:

Tuesday, May 21st (6:00pm – 8:00pm)

Term Paper (Chem. 7581 students ONLY):

Due (electronically) before midnight on May 7th.

Schedule of Lectures (2019):

Class meets weekly (6:30pm – 9:00pm) in 1127N.
Tuesdays: January 29th - May 14th.

No Classes: Tuesday, February 12th & Monday, February 18th.

Spring Recess: April 19th – April 28th, inclusive.

Important Dates (2019):

Friday, January 25th: Weekday classes begin.

Sunday, January 31st: Last day to add a course.

Thursday, February 14th: Last day to drop a course without a "W" grade.

Friday, March 22nd: Chemistry Department Make-Up Final Examination Day for Fall 18 chem. courses.

Monday, April 1st: Last day to withdraw from a course with a "W" (non-penalty) grade.

Monday, April 8th: Last day for students to resolve outstanding Fall 2018 incomplete (INC) grades.

Lecture Topics:

Topic 1: Metabolism: Basic Logic and Design; Introduction to Metabolomics.

Chapter 12(Mathews)/15(Stryer).

Topic 2: Glycogen Metabolism

Chapter 13(M)/21(S).

Topic 3: Glycolysis

Chapter 13(M)/16(S).

Topic 4: Pentose Phosphate Pathway

Chapter 13(M)/20(S).

Topic 5: Gluconeogenesis: Chapter 13(M)/16(S).

Topic 6: Citric Acid and Glyoxylate Cycles:

Chapter 14(M)/17(S).

Topic 7: Oxidative Phosphorylation:

Chapter 15(M)/18(S).

Topic 8: Photosynthetic Electron Transport and Phosphorylation: Chapter 16(M)/19(S).

Topic 9: Fatty Acid Metabolism:

Chapter 17(M)/22(S).

Topic 10: Membrane Lipids & Cholesterol

Metabolism: Chapter 19 (pp.794-803)(M) /Chapter 26 (S)(pp. 767-788).

Topic 11: Protein & Amino Acid Turnover/Urea Cycle: Chapter 20(M)/23(S).

Grade Breakdown:

Chem. 4581: Final grades are calculated as an average of three (non-cumulative) lecture examinations.

The grade breakdown is as follows:

33% first lecture exam grade

34% second lecture exam grade

33% final lecture exam grade

Exams will be based on lecture material and may have: true/false; multiple-choice; and matching column-type questions to test your factual knowledge and understanding of concepts. Additionally case studies will be used and may also provide the basis for examination questions. 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; official documentation is required) the first or second lecture exam score will count as the missed lecture exam grade. You will not receive a grade for the course if you miss two lecture exams or the final lecture exam. No "extra-credit projects" will be accepted. Letter grades for the course are determined using a curve if required. The class average (typically ~70%) usually establishes a "C" grade.

Chem. 7581G: Final grades are calculated as an average of three (non-cumulative) lecture examinations plus a term paper (due electronically by midnight on **Tuesday, May 7th, 2018**).

The grade breakdown is as follows:

25% first lecture exam grade

25% second lecture exam grade

25% final lecture exam grade

25% term paper

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

Exams will be based on lecture material and may have: true/false; multiple choice; and matching column-type questions to test your factual knowledge and understanding of concepts. Additionally case studies will be used and may also provide the basis for examination questions. 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; official documentation is required) the first or second lecture exam score will count as the missed lecture exam grade. You will not receive a grade for the course if you miss two lecture exams or the final lecture exam. No "extra-credit projects" will be accepted. Letter grades for the course are determined using a curve if required.

INC Grades:

If a student misses the final lecture examination due to a documented emergency, you **MUST** notify the lecturer **within 24-hours** of the final examination if you wish to receive an INC grade. **This assumes that all other course requirements have been satisfied and that you are intending to take a makeup final examination.** In the absence of student consultation with the instructor, you will be assigned a zero (0) on the final exam and this grade will be included in determination of the overall course grade. If you receive an INC grade you will need to contact your lecturer (or the Chemistry Office, 359NE) at the beginning of the semester following the course in order to determine the scheduled absentee makeup final exam date (**March 22nd, 2019** for missed chemistry final exams from fall 2018). You only have one semester following the course to makeup the final exam.

Please note that the INC grade lapses to an FIN grade if you do not complete a makeup final examination by the deadline set by the University.

Honors (H) Credit: Please discuss the option with Professor Davenport if you are planning to take this class for honors credit. An "Honors Credit in Departmental Courses" form, available from the Registrar's Office, must be completed and signed before the end of the fifth week of semester. 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 honors research article through the Assignments folder in Blackboard by March 12th, before midnight. After this date, you may **not** take this class for Honors.

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) 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 2018-2019 Brooklyn College Bulletin for a complete listing of academic regulations of the College: (<http://www.brooklyn.cuny.edu/web/about/administration/enrollment/registrar/bulletins.php>).

Student Bereavement Policy: Students who experience the death of a loved one must contact the Division of Student Affairs, 2113 Boylan Hall, if they wish to implement either the Standard Bereavement Procedure or the Leave of Absence Bereavement Procedure: (<http://www.brooklyn.cuny.edu/web/about/initiatives/policies/bereavement.php>).

Non-Attendance Due to Religious Beliefs: The state law regarding non-attendance because of **religious beliefs** shall be followed as given in the 2018-2019 Brooklyn College Bulletin, Undergraduate Programs: (<http://www.brooklyn.cuny.edu/web/about/administration/enrollment/registrar/bulletins.php>).