Brooklyn College of the City University of New York
Department of Chemistry
Spring 2020 Syllabus – Professor Davenport
Chemistry 7581G TR5 (36647)
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 7581G is not an 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
Tel: 718-951-5000 (ext. 2825)

Office Hours (344NE):
Tuesday: 6:30pm – 7:30pm
Thursday: 2:30pm – 3:30pm
Thursday: 6:30pm – 7:30pm
And by appointment (please email first).

Examination Dates 2020:
(Lecture exams are non-cumulative). **Please bring your BC/CUNY ID card to the exams.**
First Lecture Examination:
    Thursday February 27th.
Second Lecture Examination:
    Thursday, April 2nd.
Final Lecture Examination:
    Tuesday, May 19th (3:30pm – 5:30pm)

Term Paper:
Due (electronically) before midnight on May 7th.

Schedule of Lectures (2020):
Class meets weekly (5:05pm – 6:20pm) in 1127N.
Tuesday/Thursday: January 27th - May 22nd.

No Classes: Tuesday, April 7th.
Spring Recess: April 8th – April 16th, inclusive.

Important Dates (2020):
Friday, January 27th: Weekday classes begin.
Sunday, February 2nd: Last day to add a course.
Friday, February 7th: Last day to submit a P/F elective application.
Thursday, February 16th: Last day to drop a course without a "W" grade.
Wednesday, April 1st: Last day to withdraw from a course with a "W" (non-penalty) grade.
Monday, April 6th: Last day for students to resolve outstanding Fall 2019 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. 7581G: Final grades are calculated as an average of three (non-cumulative) lecture examinations plus a term paper (due electronically by midnight on **Thursday, May 7th, 2020**).

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 Thursday, 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. 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.

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 2019-2020 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).

<u>Non-Attendance Due to Religious Beliefs:</u> The state law regarding non-attendance because of **religious beliefs** shall be followed as given in the 2019-2020 Brooklyn College Bulletin, Undergraduate Programs:
(http://www.brooklyn.cuny.edu/web/about/administration/enrollment/registrar/bulletins.php).