Brooklyn College Chemistry 1007
Fall 2016 Syllabus - Davenport
Sections M9AL-M9EL

Course Goals and Learning Objectives. The goal of this course is to give the student a basic understanding of chemistry and physical processes in the context of environmental and food chemistry. The course also necessarily makes connections to the future sustainability of food and water. We aim to prepare the student for the increasingly urgent and complex national dialogue on the interrelated topics of global climate change, energy, pollution, extinction and the food supply. The specific objectives of this course are to provide the student with the basic vocabulary of chemistry, and a basic understanding of the experimental process as it relates to environmental and food chemistry.

Required Texts:

1. **"Chemistry in Context, 8th edition (2014), McGraw Hill (ISBN 9780073522975).** The e-book is available through ConnectPlus (~$85.00) and access for the first TWO weeks is FREE after you have registered (see below). For an additional $15.00 you can also obtain the hardcopy version of the book in addition to continued access to the e-book and learning tools offered through ConnectPlus.

You can register for ConnectPlus by following these steps:

a. Make sure your pop-up blocker is 'OFF.'
b. Go to the URL for your lab instructor/section:
http://connect.mheducation.com/class/davenport-m9af-belyayeva-fa16-lab-instructor
http://connect.mheducation.com/class/davenport-m9bf-belyayeva-fa16-lab-instructor
http://connect.mheducation.com/class/davenport-m9cb-elie-fa16-lab-instructor
http://connect.mheducation.com/class/davenport-m9db-buzin-fa16-lab-instructor
http://connect.mheducation.com/class/davenport-m9eb-lee-fa16-lab-instructor
c. Click the "Register Now" Button.
d. Enter your email address.
e. Select "Buy Online" and purchase ConnectPlus.

2. **"Experiments for Core Chemistry at Brooklyn College" (ISBN 9781465270191), $32.80.**
Also required: A small combination or key lock to secure lab supplies in the lab desk cabinet.

NB: LAB ATTENDANCE IS NOT OPTIONAL.

Note: Online problem sets and graded quizzes are assigned through Blackboard. Please ensure that you have access to this class through Blackboard, and check that your posted email address is the one that you access regularly.

Class organization

The order of the class *reading and covered material* from the textbook is given below. However, the instructor reserves the right to make adjustments when necessary. Students may choose to use the ConnectPlus reading option if using the e-book option, which allows for student query as reading is carried out. Otherwise, students can click on the e-book cover and 'open' the text for reading in the conventional way. Online problem sets and quizzes will be assigned through Blackboard; the quizzes are graded online.

Chapter 0

Sustainability, renewable and nonrenewable resources: 0.1 - 0.3.
Footprints: ecological, carbon, water, air – how our food choices impact these: 0.5.

Chapter 1

Chapter 1: Introduction
Necessary basics: classification of matter, the Periodic Table 1.1, 1.6- 1.7.
Naming compounds; combustion, 1.8 – 1.9, 1.10 (pp. 39 - 40 only).

Chapter 2

Atomic structure, periodicity, molecules and models, 2.2 – 2.3.
Avogadro's Number and moles, Ch3.6, 3.7.
Light and color, 2.4, 2.6.
Biological effects of UV radiation, 2.7, 2.8, 2.9 (pp. 89-90 only), 2.11.

Chapter 5

Introduction, the unique properties of water; hydrogen-bonding, 5.1 – 5.2.
Potable water; future water sources, influence on food availability, 5.3 – 5.4.
Aqueous solutions, solutes, ionic compounds, naming ionic compounds, 5.5 – 5.7.
Solubility of Ionic Compounds, 5.8.

Covalent compounds and solutions, water purification, 5.9, 5.11, pp. 237-38.

MIDTERM EXAM: APPROXIMATELY DURING MID-COMPLETION OF CHAPTER 5.
PROPOSED DATE: October 26th (in class).

Chapter 6
What is an acid? What is a base?
Introduction, 6.1 - 6.2
Neutralization, introducing pH, 6.3 – 6.4.

Chapter 9
Natural polymers, addition polymerization, 9.2 – 9.3.
Condensation polymerization; polyamides, 9.6 - 9.7.

Chapter 11
Sustainability, 11.1 - 11.2.
Fats and oils, 11.3.
Trans versus cis fats; interesterification, 11.3.
Carbohydrates and sugars, 11.5 – 11.6.
Proteins, 11.7.
Vitamins and Minerals, 11.8.
Metabolism: energy from food; diet (quality *versus* quantity, 11.9 - 11.10.

Chapter 12
The structure of deoxyribonucleic acid, 12.2 – 12.3.
DNA: the code for proteins, 12.4 - 12.5.
Genetic Engineering, 12.6 - 12.8.

FINAL EXAM (CUMULATIVE): Wednesday, December 21st: 8:30am -10:00am, Whitman Hall auditorium (bring pencils)

Instructor Contact Information

NAME	Extension	Room
Prof. Davenport	2825	344NE

LDvnport@brooklyn.cuny.edu
Office hours: 11:00am – 12:30pm Monday
1:30pm – 3:00pm Wednesday
or by appointment (email first).

Course Requirements and Grading

The final grade for the course is based on a score, which is the sum of the scores received for the following.

The grade breakdown is as follows:

30% lab grade [1]

15% online problem sets (graded)

25% midterm exam

30% final exam grade

EXAMS
Questions from the lab experiments may be included in both the midterm and final exam. Calculators or use of other electronic devices are not necessary nor are they allowed during exams, but you will need pencils. **Electronic devices (including smart 'phones and watches) must be turned OFF during examination times.**

The **final exam** is scheduled for **Wednesday, December 21st, 2016 from 8:30am – 10:00am in Whitman Hall auditorium**. Bring pencils. The final exam is cumulative and will cover course material both covered and not covered by the midterm examination. Questions related to lab experiments may also appear on exams. Bring pencils!!! Be sure to arrive on time. **Exams will not be available after 9:00am at which point students who have finished the examination, may leave the room if desired.**

It is the student's responsibility to **note** the **midterm** and **final exam time, place and date** at the beginning of the semester, and to be sure **not to schedule other activities during this time**. **There is no make-up midterm exam**. If the midterm exam is missed, the final exam will be count towards both the midterm and final exam grade points.

Course work cannot be completed independent of the lab work. **NO credit is earned for coursework without completion of the lab assignments.**

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[1] Laboratory Schedule

NOTE: Labs meet EVERY WEEK.

Lab meeting 1: Check-in. lab safety, lab techniques. Intro to Experiment 1.

Lab meeting 2&3: Examination of the Physical and Chemical Properties of Matter (Lab Report 1).

Lab meeting 4: Chromatography: Pigments in a Spinach Leaf (handout) (Lab Report 2)

Lab meeting 5: Energy Powers Physical and Chemical Changes (Lab Report 3).

Lab meeting 6: Name that Ion: Qualitative Analysis (Lab Report 4).

Lab meeting 7: Accounting for Every Atom: Moles in Chemical Reactions (Lab Report 5).

Lab meeting 8: Carbon Dioxide: An all-too-common reaction product (Lab Report 6).

Lab meeting 9: Bonding in Molecules: How Electrons control Physical and Chemical Properties (Lab Report 7).

Lab meeting 10&11: An Experiment in 'Cleaning' Water (handout) (Lab Report 8).

Lab meeting 12: Ester Synthesis: An Experiment that Smells Good (Lab Report 9).

Lab meeting 13: Building Molecules with Models (Lab Report 10).

Lab meeting 14: Check-out

Details about Lab Attendance, Lab Reports and Grades.

Attendance will be taken at the beginning of each lab class. It is the student's responsibility to notify the instructor of her/his presence.

Students are expected to come to lab *ON TIME* and be prepared by having read and understood the lab procedure BEFORE carrying out the work in class.

Each of the 10 lab report sheets must be handed in at the laboratory class meeting one week following the completion of the experiment. **Lab report sheets** must be stapled together, and the student's and lab instructor's name must appear on each sheet. 10 points are awarded for each lab report. Point assignment is at the discretion of the lab instructor, but no less than 4 points shall be awarded for completion of the lab work.

Instructors deduct 3 points for each week the lab report is handed in late. Labs missed due to illness must be made up by attending alternate lab sessions with permission of the lab instructor, arranged through the General Chemistry stockroom technicians, Ms. Grace Kosiorek or Dr. Olga Berezovska (248 NE). **Documentation of illness must be presented to the stockroom technician.** A signed lab form, obtained from the stockroom technician, must accompany completed makeup labs. This form is to be returned to the student's assigned lab instructor. Experiments not completed will result in a grade of zero for that experiment. **LAB ATTENDANCE IS NOT OPTIONAL.** STUDENTS WILL RECEIVE A GRADE OF **F** FOR THE COURSE IF MORE THAN **TWO** LABS ARE MISSED AND NOT MADE UP. MISSED LABS MUST BE MADE UP WITHIN 2 WEEKS OF THE EXPERIMENT ASSIGNMENT. LAB MAKE-UPS ARE SUBJECT TO LAB SPACE AVAILABILITY.

Students are to work individually in the laboratory unless specifically told otherwise. Students are expected to actively participate in the collection of all data. 'Sharing' of results without actual participation in collection of those results constitutes cheating; no credit will be given for that lab.

It is a **New York State law** that **safety goggles must be worn** at all times by all students in the laboratory. **Goggles are provided as part of the lab equipment rental fee.** Students who consistently refuse to properly wear safety goggles during the lab period **will be dismissed from the laboratory.** Students so dismissed will not have the opportunity to make up missed lab work. It is the student's responsibility to bring her/his goggles to each lab session. If the student completes their lab work before the end of the session, students MUST continue to wear their goggles until they have exited the lab.

Eating and drinking are also not permitted during lab sessions. Students may also be dismissed for violation of this safety rule.

Pregnant students are encouraged to defer taking Chemistry 1007 as the lab is an integral part of the course.

The state law regarding non-attendance because of **religious beliefs** shall be followed as given in the 2016-2017 Brooklyn College Bulletin, Undergraduate Programs.

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

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, at 718-951-5538. 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 Policy on Academic Integrity 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 2016-2017 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.

Classroom Etiquette

Eating and cell 'phone usage is not allowed during lecture or examinations. Unnecessary and superfluous movement, talking and other disruptive behavior distracts other students' attention from the lecture material to which they are entitled. Students who create such disturbances will be asked to leave and/or escorted from the classroom (see below).

Disruptive classroom (or laboratory) behavior negatively affects the classroom environment as well as the educational experience for students enrolled in the course. Any serious or continued disruption of class will result in a report to the Office of Judicial Affairs. Public safety will be summoned immediately if a serious disruption prevents the continued teaching of the class and the responsible student(s) may be subject to disciplinary action. For disruptive behavior that does not prevent the continued teaching of the class, students will receive a warning after one such disruption. If the disruptive behavior is repeated in the same or subsequent classes, the student will be asked to leave the classroom for the remainder of the class and may be subject to disciplinary action.

Important Dates (Fall 2016)

Wednesday, August 31st: Last day to add a course.

Wednesday, September 7th: Last day to drop a course without a grade (50% refund).

Thursday, October 6th: Conversion Day. Classes follow a Monday schedule.

Friday, October 14th: Conversion Day. Classes follow a Tuesday schedule.

Wednesday, November 9th: Last day to resolve Spring 2016 incomplete grades (INC).

Thursday, November 10th: Last day to withdraw from a course with a W (non-penalty) grade.