

Brooklyn College of the City University of New York
Department of Chemistry
Chemistry 1007 - Fall 2018 Syllabus
CHEMISTRY IN MODERN LIFE: AN INTRODUCTION FOR NON-MAJORS
Sections: MTAL (17624); MTBF (17630)
(3 credits; 2 hours lecture & 2 hours laboratory)
Professor Lesley Davenport; Monday Lecture

Course Goals and Learning Objectives: The goal of this course is to provide students with a basic understanding of chemistry and physical processes within the context of the environment, food chemistry and our bodies. The course makes connections to the future sustainability of food and water. The aim is to prepare students for the increasingly complex national dialogue on the interrelated topics of global climate change, energy, pollution, and our 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 chemistry, food chemistry (nutrition) and basic biochemistry (genetics and medicine).

Required Texts:

1. "Chemistry in Context: Applying Chemistry to Society", 8th (2015) or 9th editions (2018), McGraw Hill Education (ISBN: 978-0-07-352297-5 for the 9th edition). In addition to the hardcopy, the 9th edition is also available as an e-book through the "Connect" website (~\$95.00). Access for the first TWO weeks is FREE after you have registered (see below). For an additional \$25.00 you can obtain the hardcopy version of the book along with continued access to the e-book and the learning tools offered through "Connect". (Note: Both the 8th and 9th editions of the book are available for rental through on-line book retailers for a modest cost.)

You can register for "Connect" by following these steps:

- a. Make sure your pop-up blocker is 'OFF.'
- b. Go to the URL for your lecture/lab section:

<http://connect.mheducation.com/class/l-davenport-fall-2018-section-mtal>

<http://connect.mheducation.com/class/l-davenport-fall-2018-section-mtbf>

- c. Click the "Register Now" Button.
 - d. Enter your email address.
 - e. Select "Buy Online" and purchase "Connect".
2. Experimental protocols for Chemistry 1007 are posted on Blackboard for download. Please print-out the lab handout BEFORE your scheduled lab session and bring it with you to the lab.

Also required: A small combination or key lock to secure lab supplies in the lab desk cabinet.

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: Online problem sets and graded quizzes are assigned through Blackboard.

Attendance:

Chemistry 1007 is not exclusively an on-line course (except for quizzes) and to do well in this class attendance in lectures is **highly recommended**. Attendance in lectures will be recorded, but is not graded.

NOTE THAT LAB ATTENDANCE IS NOT OPTIONAL. If you miss more than TWO laboratory sessions over the semester, you will automatically FAIL the class as not satisfying the requirements for the course. (Makeup lab sessions are offered for unavoidable (and documented) absences; see below.)

Instructor Contact Information:

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

Office Hours (344NE):

Monday: 10:00am - 11:30am
Wednesday: 10:00am - 11:30am
And by appointment (please email first).

Examination Dates:

Midterm Lecture Examination (No Makeup Exams):

Monday, October 22nd, 2018 (12:50pm-1:50pm)

Final Lecture Examination (Cumulative):

Friday, December 21st, 2018 (8:00am-10:00am).

To be confirmed.

Exams will be based on lecture and textbook materials and can 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 midterm exams**. Unjustified absences on midterm exams will be assigned a grade of zero (0). For justified absences (e.g. unavoidable and documented issues), the final lecture examination grade will also count as the grade for the missed midterm examination. Letter grades for the course are determined using a curve when needed.

INC Grades:

If a student misses the final exam 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 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 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.**

Schedule of Lectures:

Class meets weekly on Mondays (12:50pm - 2:30pm) in 2127N (Old Ingersoll Building) from August 27th through December 12th, inclusive.

No classes: Monday, September 3rd, September 10th, and October 8th.

Conversion Class: Wednesday, September 5th, 2018 (classes follow a Monday schedule).

Thanksgiving Holiday: November 22nd - November 25th, inclusive.

Important Dates (2018):

Monday, August 27th: Weekday classes begin.

Sunday, September 2nd: Last day to add a course.

Tuesday, October 16th: Last day to drop a course without a "W" grade.

Tuesday, November 6th: Last day to withdraw from a course with a "W" (non-penalty) grade.

Tuesday, November 6th: Last day for students to resolve outstanding Spring 2018 incomplete (INC) grades.

Class Organization:

The order of the lectures and covered material from the textbook is given below, although the instructor reserves the right to make adjustments when necessary. Students may choose to use the Connect 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, or use the hardcopy version of the textbook.

Online problem sets and quizzes will be assigned through Blackboard. The quizzes are graded online.

Lecture Topics:

Chapter organization for the 8th and 9th editions of the textbook is significantly different. Where possible, chapter references for both the 8th and 9th editions are listed. The default listing is for the 9th edition. References to equivalent chapters from the 8th edition are shown in [square brackets]. Lecture slides will be made available through Blackboard. Please note that the lecture slides provide guidance on **specific material** that is covered from the following book chapters.

TOPIC 1: The Basics (Chapter 1)

Classification of Matter & The Periodic Table (1.1); [8: 1.1; 1.6-1.7].

Basic Atomic Structure (1.2 & 1.4); [8: 2.2-2.3].

Introduction to Bonding (1.3 pp.8 only); [8: 1.7].

Scientific Notation & Significant Figures (1.18 pp.19 only); [8: 1.3].

TOPIC 2: The Air We Breathe (Chapter 2)

Classifying Air Mixtures (1.1; 2.2-2.4); [8: 1.1-1.2].

Molecules, Naming Compounds & Pollutants (2.6-2.8; 2.10) [8: 1.3-1.4; 1.7-1.8].

Combustion Reactions, Balancing Equations And Air Quality (2.11-2.12) [8: 1.9-1.11].

Mass of Molecules, Avogadro's Number and Moles (4.3-4.4); [8: 3.6-3.7].

Green Chemistry (2.16) [8: 0.4-0.5].

TOPIC 3: Radiation From the Sun (Chapter 3)

Light and Color (3.1; 3.3); [8: 2.4].

Biological effects of UV radiation & The Ozone Layer (3.4-3.6); [8: 2.6-2.7].

Ozone Depletion, Octets and Radical Formation (3.7-3.9 pp.102 only; 3.10); [8: 2.1; 2.3; 2.8; 2.9 pp. 89-90 only; 2.11].

Nanoparticles & Sunscreens

(3.11; pp.109-111 only); [8: 2.7 pp. 84].

TOPIC 4: Water (Chapter 8)

Introduction (8.1).

Unique Composition of Water; Hydrogen-Bonding

(8.2-8.3); [8: 5.1-5.2].

Potable Water & Future Water Sources

(8.4-8.5); [8: 5.3-5.4].

Aqueous Solutions; Solutes; Ionic & Covalent

Compounds; Naming Ionic Compounds; Solubility of Ionic & Covalent Compounds.

(8.6-8.7); [8: 5.5-5.9].

What is an acid? What is a base?

(8.8-8.9); [8: 6.1-6.2].

Neutralization & The pH Scale (8.9-8.10); [8: 6.3-6.5].

Acid Effects on Water & Water Treatment

(8.12; 8.13); [8: 5.11].

TOPIC 5: Polymers and Plastics (Chapter 9)

Introduction/Natural Polymers (9.1-9.2); [8: 9.1-9.2].

Addition Polymerization:

(9.3; Table 9.1); [8: 9.3; Table 9.1].

Condensation Polymerization; Polyamides:

(9.6; 9.7); [8: 9.6; 9.7].

Recycling (9.8); [8: 9.8].

TOPIC 6: Genes and Life (Chapter 13)

Introduction (13.1); [8: 12.1].

The Structure of Deoxyribonucleic Acid:

(13.2-13.3); [8: 12.2-12.3].

The Genetic Code (13.4-13.5); [8: 12.4-12.5]

Genetic Engineering: (13.1; 13.6-13.8);

[8: 12.1; 12.6-12.8].

TOPIC 7: Nutrition (Chapter 11)

Introduction (11.1); [8: 11.2].

Lipids (11.2); [8: 11.3].

Fats and Oils: (11.3); [8: 11.3; 11.4].

Carbohydrates and Sugars:

(11.4-11.5); [8: 11.5-11.6].

Proteins: (11.6); [8: 11.7].

Vitamins and Minerals: (11.7); [8: 11.8].

Energy from Food: (11.8); [8: 11.9].

Sustainability: (11.10); [8: 11.1].

Grade Breakdown:

The final grade for the course is based on a score, which is calculated from grades received for the midterm and final exams, the average of your best 5-quiz scores, and a laboratory grade.

The grade breakdown is as follows:

30% laboratory grade¹

15% online quizzes (graded)

25% midterm exam

30% final (cumulative) exam grade

Exams will be based on lecture and textbook materials. Questions from the lab experiments may also be included in the midterm and final exams. Multiple-choice format exams (as previously discussed) will be used to test your factual knowledge and understanding of concepts.

Calculators, or the 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 currently scheduled for Friday, December 21st (date, time and room to be confirmed). Bring pencils!!! The final exam is cumulative and will cover course material both covered and not covered by the midterm examination. Be sure to arrive on time. **Exams will not be available after 30 minutes following the start of the examination, 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 score will also count as the missed midterm grade.

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

Classroom & Laboratory Etiquette:

Eating and cellular 'phone usage is not allowed during lectures, examinations or labs. 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 or lab 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 (or lab) for the remainder of the class and may be subject to disciplinary action.

¹Laboratory Schedule:

NOTE: Labs meet EVERY WEEK. You need to hand in 10 lab reports for grading. Experimental protocols are available for download through Blackboard.

Lab meeting 1: Check-in. Lab Safety. Lab Techniques. Introduction to Experiment 1.

Lab meeting 2&3: Expt. 1 - Physical and Chemical Changes of Matter and the Conservation of Mass (Lab Report 1).

Lab meeting 4: Expt. 8 - Paper Chromatography of Pigments in a Spinach Leaf (Lab Report 2)

Lab meeting 5: Expt. 2 - A Change in Energy Accompanies Physical and Chemical Changes (Lab Report 3).

Lab meeting 6: Expt. 3 - Colorimetric Identification of Ions (Lab Report 4).

Lab meeting 7: Expt. 4 - Counting Atoms and Molecules Using the Concept of Moles (Lab Report 5).

Lab meeting 8: Expt. 5 - Carbon Dioxide As a Reaction Product (Lab Report 6).

Lab meeting 9: Expt. 6 - The Effects of Chemical Bonds on The Physical Properties of Matter (Lab Report 7).

Lab meetings 10&11: Expt. 7 - How Water is Purified (Lab Report 8).

Lab meeting 12: Expt. 9 - Creating Aromas: Ester Synthesis (Lab Report 9).

Lab meeting 13: Expt. 10 - Using Models to Build Molecules (Lab Report 10).

Lab meeting 14: Check-Out

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. The

lab procedures may be downloaded as a pdf-document from Blackboard.

Each of the completed 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 both the student's and lab instructor's names 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.** Graded lab reports will be returned to you within 2-weeks following submission of your lab report sheets.

Late Lab Reports and Missed Labs: 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, Dr. Olga Berezovska and Dr. Yasemin Kopkalli (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 and zero (0) credit will be given for that lab.

Lab Safety and Attire: 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 laboratory is an integral part of the course.

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. If you have already registered with the Center for Student Disability Services, please provide your professor with the course accommodation form at the **beginning of the semester**, 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 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>).

Lab Instructor Information:

For the most up-to-date information, check this information on Blackboard.

Lab. Section MTAB (17629)

Dr. Benelita Elie (Lab Instructor)

Email: btelie@brooklyn.cuny.edu

Office Hours: TBA

Phone: 718-951-5458 (Chemistry Department Office)

Lab Schedule: Wednesday, 12:30pm – 2:10pm (Room 229NE).

Lab. Section MTBB (17631)

Dr. Benelita Elie (Lab Instructor)

Email: btelie@brooklyn.cuny.edu

Office Hours: TBA

Phone: 718-951-5458 (Chemistry Department Office)

Lab Schedule: Thursday, 12:30pm – 2:10pm (Room 229NE).

Chemistry 1007 - Lecture Quiz and Examination Schedule (Fall 2018)

Quiz/Exam Information:

1. Five out of six quiz scores count towards your course grade (the lowest quiz score is dropped).
2. All quizzes are available on-line from 5:00pm on the day of the quiz (unless otherwise stated below) until midnight of the following day (no extensions) and are located through Blackboard in the Assignments folder.
3. The midterm exam will be held during lecture time and in the lecture hall. The final exam will be held in the lecture hall unless otherwise informed.
4. The midterm examination is worth 25% of the course grade; the final examination, which is cumulative, is worth 30% of the final course grade. The overall quiz grade is worth 15% of your overall course grade (each quiz is worth 3%).
5. The laboratory is worth 30% of the course grade and is **REQUIRED** in order to receive a final passing grade in Chemistry 1007.

Quiz Number	Quiz Date (2018); Mondays beginning at 5:00pm (unless otherwise indicated*)
1 (On-line quizzes viewed through Blackboard)	September 5 th (Wednesday).
2	September 17 th (site opens at 3:00pm)
3	October 15 th
Midterm Examination (No makeups)	October 22 nd (12:50pm - 1:50pm) in 2127N
4	October 29 th
5	November 12 th
6	November 26 th
Final Examination (Cumulative)	Friday, December 21 st (8:00am - 10:00am) to be confirmed.

How To View Your Past Quizzes in Blackboard (BB):

1. Click on "Tools" in BB on the left-hand menu.
2. Click on "My Grades".
3. You will see a list of answered quizzes with grades.
4. Click on the quiz that you wish to view in detail.
5. **Missed quizzes are not shown.**
6. Click on your score (right hand side) under "Calculated Grade" to view that quiz.
7. You will see the posted quiz with your answers.
8. For any questions that were answered incorrectly, the correct answer is shown.