Brooklyn College of the City University of New York Department of Chemistry

ON-LINE COURSE

Chemistry 1007 – Fall 2020 Syllabus

CHEMISTRY IN MODERN LIFE: AN INTRODUCTION FOR NON-MAJORS

(3 credits; 2 hours lecture & 2 hours laboratory)

Wednesday 3:40 – 5:20 pm

Lecturer: Professor Sylwia Dragulska

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 and technologies

1. **"Chemistry in Context: Applying Chemistry to Society", 8th (2015) or 9th editions (2018).**
2. **How to get a textbook? Store, library, peers or publisher**

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 ebook through the "Connect" website (~$95.00). Access for the first TWO weeks is FREE after you have registered (see below). For an additional $97.00 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 or as second-hand versions 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:

https://connect.mheducation.com/class/s-dragulska-connect-fall-2020

c. Click the "Register Now" Button.
d. Enter your email address.
e. Select "Buy Online" and purchase "Connect".

Also, you can rent e-book from publisher using this link:
https://www.mheducation.com/highered/product/chemistry-context-american-chemical-society/M9781260240849.html - buying-options

Supplementary Materials:

Lecture notes are posted using Blackboard and Dropbox. 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 are assigned through Blackboard.

3. **Experimental protocols for Chemistry 1007 are posted on Blackboard for download.**
4. **Technical information**

In this course we will be used:

- Blackboard
- Zoom
- Email
- Dropbox

I will communicate with you via Blackboard so I recommend you look at daily announcements for assignment due day and other important information.

Course organization & Attendance:

Lecture

Chem 1007 course is online with synchronous and asynchronous sessions. All materials will be posted via blackboard every week. You have the flexibility to watch videos and study materials for your convenience. Remember about the due date for each assignment. The every Wednesday synchronous session will be available at 3:40 – 5:20 pm via zoom. During this time all quizzes and exams will be preform via blackboard.

Laboratories

The labs are fully online (asynchronous). Your lab instructor will be posting all materials via blackboard. You have the flexibility to watch videos and study materials for your convenience. Remember about the due date for each assignment.

SUBMITTING LAB REPORTS IS MANDATORY TO PASS THE COURSE. If you miss more than TWO laboratory sessions (not submitted report) 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 Sylwia Dragulska
Email: sylwia.dragulska@brooklyn.cuny.edu

Office Hours:

Thursday: 11:30 pm – 12:30 pm via Zoom platform or by email (response within 24 hours)

Examination Dates (2020):

Midterm exam: Wednesday, November 4th

Final Lecture Examination (Cumulative): Wednesday, December 16th

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 quizzes and midterm exams. Unjustified absences on quizzes will be assigned a grade of zero (0). For justified absences (e.g. unavoidable and documented issues), a score for the missed quiz will be assigned on the basis of their performance on the next quiz. Letter grades will be assigned following the Brooklyn College guidelines/grade-scale: http://academic.brooklyn.cuny.edu/modlang/carasi/courses/grading-scale.html

CHEMISTRY 1007 (Wednesday synchronous session: 3:40-5:20 pm)

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.**

Important Dates (2020):

Wednesday, August 26	First day of Fall 2020 classes
Tuesday, September 1	Last day to add a course
Wednesday, October 14	Classes follow a Monday schedule
Friday, November 6	Last day to withdraw from a course with a "W" grade
Wednesday, November 25	Classes follow a Friday schedule
Thursday-Friday, 10-11 Dec	Reading day
Monday-Sunday 14-20 Dec	Final Examinations

https://www.brooklyn.cuny.edu/web/about/administration/enrollment/registrar/bulletins/fall20/calendar.php

Class Organization:

Chem 1007 course is fully online and all materials will be provided in advance for each week via blackboard. Students have the flexibility to read/study materials. Synchronous components of the course is quizzes, exams (see a table with schedule) via blackboard and office hours via zoom.

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 a conventional way or use the hardcopy version of the textbook.

Online problem sets will be assigned through Blackboard.

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]. . Please note that the lecture slides provide guidance on specific material that is covered from the following book chapters. All lecture slides and videos with voiceover will be uploading on the blackboard in modules tab.

TOPIC 1: The Basics (Chapter 1) audio presentation

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) audio presentation

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) audio presentation

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) audio presentation

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) audio presentation

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) audio presentation

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) audio presentation

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 final exam, the average of your 4 quizzes scores and midterm exam, assignments, and a laboratory grade.

The grade breakdown is as follows:
30% laboratory grade
15% quizzes (4 total)
10% assignments (see table with assignments checklist)
20% midterm exam
25% final (cumulative) exam grade

Exams will be based on lecture and textbook materials. Questions from the lab experiments may also be included in the quizzes or exams.

Multiple-choice format exams (as previously discussed) will be used to test your factual knowledge and understanding of concepts.

Electronic devices (including smart 'phones and watches) must be turned OFF during examination times. It is not allowed to use the internet or help external people to write quizzes and exams.

The final exam is currently scheduled for Wednesday, December 16th via blackboard. The final exam is cumulative and will cover course material both covered and not covered by the quizzes. Be sure to log in on time. **Quizzes and exams will be available in blackboard in every Wednesday (all details will be confirmed before each exam)**

It is the student's responsibility to note the quizzes and exams time, at the beginning of the semester, and to be sure not to schedule other activities during this time. **There are no make-up quizzes and exams.** Course work cannot be completed independent of the lab work. **NO credit is earned for coursework without completion of the lab assignments**.

Laboratory

Instructor Contact Information:

- **Leda Lee**

Sections: NTAB and NTDB
Email: leverback@gmail.com
Office hours: Tuesday and Thursday 10:00-10:45 am via Zoom

- **Nazia Nayeem**

Sections: NTBB and NTCB
Email: Nazia.Nayeem@brooklyn.cuny.edu
Office hours: Thursday 12:00-2:00 pm via Zoom

Laboratory Schedule:

All the laboratory sessions will be performed virtually, i.e, you will be provided with material to read in advance via blackboard.

NOTE: **Labs meet EVERY WEEK. You need to hand in 10 lab reports for grading on the following week after experiment.**

Lab meeting 1: Check-in. Lab Safety. Lab Techniques.
Lab meeting 2&3: Expt. 1 - Physical and Chemical Changes of Matter and the Conservation of Mass
Lab meeting 4: Expt. 2 - A Change in Energy Accompanies Physical and Chemical Changes
Lab meeting 5: Expt. 3 – Colorimetric Identification of Ions
Lab meeting 6: Expt. 4 – Counting Atoms and Molecules Using the Concept of Moles
Lab meeting 7: Expt. 5 - Carbon Dioxide as a Reaction Product
Lab meeting 8: Expt. 6 – The Effects of Chemical Bonds on The Physical Properties of Matter
Lab meetings 9: Expt. 7 – How Water is purified part 1
Lab meetings 10: Expt. 7 – How Water is Purified p2
Lab meeting 11: Expt. 8 - Paper Chromatography of Pigments in a Spinach Leaf
Lab meeting 12: Expt. 9 – Creating Aromas: Ester Synthesis
Lab meeting 13: Expt. 10 – Using Models to Build Molecules

Lab Reports and Grades:

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

Each of the completed 10 lab report sheets must be submitted online one week following the completion of the experiment (see schedule of experiments) via blackboard. Student's names must appear on each **Lab report sheets**. 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**.

Late Lab Reports and Missed Labs: Instructors deduct 3 points for each week the lab report is handed in late. 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.

Accommodations for Students with Disabilities:

The Center for Student Disability Services (CSDS) will be working remotely for the fall semester. In order to receive disability-related academic accommodations students must first be registered with CSDS. Students who have a documented disability or suspect they may have a disability are invited to schedule an interview by calling (718) 951-5538 or emailing testingcsds@brooklyn.cuny.edu. If you have already registered with CSDS, email Josephine.Patterson@brooklyn.cuny.edu or testingcsds@brooklyn.cuny.edu to ensure the accommodation email is sent to your professor.

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 policy implementation can be found at 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. Students should be aware that faculty may use plagiarism detection software.All students should read carefully and thoroughly the 2020-2021 Brooklyn College Bulletin for a complete listing of academic regulations of the College: https://www.brooklyn.cuny.edu/web/about/administration/enrollment/registrar/bulletins/fall20.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

Sexual and Gender-based Harassment, Discrimination, and Title IX

Brooklyn College is committed to fostering a safe, equitable and productive learning environment. Students experiencing any form of prohibited discrimination or harassment on or off campus can find information about the reporting process, their rights, specific details about confidentiality of information, and reporting obligations of Brooklyn College employees on the Office of Diversity and Equity Programs website.

Reports of sexual misconduct or discrimination can be made to Public Safety (719.951.5511), the New York City Police Department (911 or a local NYPD precinct), Ivana Bologna, Title IX Coordinator (718.951.5000, ext. 3689), or Michelle Vargas, Assistant Director of Judicial Affairs, Division of Student Affairs (718.951.5352).

Consideration of Religious Observance

Please bear in mind that due to religious holidays and related religious observances, a number of students will not be able to attend classes or take examinations. New York State Education Law (Title I, Article 5, Section 224-a) requires that we "make available to each student who is absent from school, because of [their] religious beliefs, an equivalent opportunity to make up any examination, study or work requirements

which [they] may have missed because of such absence on any particular day or days."

Non-Attendance Due to Religious Beliefs:

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).

Technical help:

- Brooklyn College/CUNY: https://www.brooklyn.cuny.edu/web/academics/technology_students.php
  http://www.cuny.edu/about/administration/offices/cis/core-functions/cuny-blackboard/helpsupport/student/
- Zoom platform
  https://support.zoom.us/hc/en-us/articles/206618765-Zoom-video-tutorials

Chemistry 1007 - Lecture Quizzes and Examination Schedule (FALL 2020)

Quiz/Exam Information:

1. Four quizzes scores count towards your course.
2. Quizzes are held during the first 30 minutes of synchronous session, on Wednesday via blackboard, do not log in late to blackboard on quiz days! Assignments submissions will be available via blackboard.
3. The final exam will be held via blackboard and it will be open book exam.
4. The overall quiz or assignment grade is worth 15% or 10% of your overall course grade, respectively.
5. Midterm exam grade is worth 20% of your overall course grade but final exam is worth 25% of your overall course grade.
6. 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	Quizzes and exams dates (2020); Wednesday beginning at 3:40 pm via blackboard (unless otherwise indicated)
1 (no make up)	September 9th
2 (no make up)	September 30th
3 (no make up)	October 21st
Midterm exam (no make up)	November 4th
4 (no make up)	December 2nd
Final Examination (Cumulative)	Wednesday December 16th to be confirmed.

Letter grades will be assigned following the Brooklyn College guidelines/grade-scale:
http://academic.brooklyn.cuny.edu/modlang/carasi/courses/grading-scale.html

ASSIGNMENTS CHECKLIST

All deadlines are 11:59 pm Eastern, unless otherwise indicated via blackboard assignments tab.

		POINTS
Introduction Discussion Forum	6 points + 4 points for responses to 2 colleagues = 10 **Due date:** 8/30 (no credit for late discussion posts or replies)	**10**
Practice problems 1,2 & 3	15 points x 3 submissions = 45 **Due dates:** #1 9/09 #2 10/21 #3 11/04	**45**
Discussion boards 1,2 & 3	6 points + 4 points for responses to 2 colleagues = 10 10 points x 3 discussions = 30 **Due dates:** #1 9/30 #2 10/14 #3 12/02	**30**
Reflection	Post your opinion **Due date**: 12/16	**15**
	TOTAL	**100**

Grading Rubrics:

Participation Rubric for Discussions

For the discussions in the weekly topic, participants must post their individual reply for a potential 6 points, and respond to two of their colleagues' discussion postings, for a potential 2 points per response (10 points total per discussion).

	Full credit	Partial credit	Incomplete response	No response
Response	**6 points (100%)** *Replied to the initial weekly topic *Posting was responsive to question and substantive, posting comments or questions that enhanced the discussion, helped move the conversation forward. *Posting showed ample evidence of having reviewed, or completed the relevant readings or assignments *Posting was constructive and differences of opinion expressed in a collegial manner	**4 points (67%)** *Replied to the initial topic within the module dates and posting was responsive to question and substantive and was constructive	**3 points (50%)** *Replied to the initial topic within the module dates but neglected one or more of the other elements	**0 points (0%)** No response
Replay	**4 points (100%)** *Posted a response to the colleague within the module dates. *Posting was responsive and substantive, posting comments or questions that enhanced the discussion, or helped move the conversation forward. These may have included follow up questions, examples, or new perspectives *Posting provided evidence that the participant had thoughtfully read the colleague's posting *Posting showed ample evidence of having reviewed, or completed the relevant readings or assignments *Posting was constructive and differences of opinion expressed in a collegial manner	**3 points (75%)** *Posted a responsive and substantive response to the colleague within the module dates and showed ample evidence of having reviewed	**2 points (50%)** *Posted a response to the colleague within the module dates *Posting was constructive and differences of opinion expressed in a collegial manner	**0 points (0%)** No response