Chemistry in Modern Life: An Introduction for Non-Majors CHEM 1007 - Sections W3AL, W3BL, W3CL, W3DL, W3EL Spring 2021

| Faculty Contact Information | Prof. Mariana P. Torrente Class Time: W 3:40PM - 5:20PM Classroom: Online; Blackboard Collaborate (or Zoom as a backup) Office hours: W 10:00-11:00am or by appointment (Online); BB Collaborate Email: <u>mariana.torrente@brooklyn.cuny.edu</u> , note CHEM 1007 in subject line. | | |
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| Course Description | Study of basic concepts in chemistry and their implications in modern life. This course is not suitable for students majoring in science or interested in the health professions. Satisfies Pathways Required Core Life and Physical Sciences requirement. | | |
| Course Materials | Lecture notes and unit summaries are posted on 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. Experimental protocols for the laboratory portion are posted on Blackboard for download. Chemistry in Context: Applying Chemistry to Society", 8th (2015) or 9th editions (2018). Optional, not required | | |
| Course Learning Objectives | The specific objectives of this course are to: provide the student with the basic vocabulary of chemistry provide a basic understanding of the experimental process as it relates to environmental chemistry, food chemistry (nutrition) and basic biochemistry (genetics and medicine). | | |
| General Education Learning Objectives | A course in this area must meet all of the following learning outcomes. A student will: ⇒ Identify and apply the fundamental concepts and methods of a life or physical science. ⇒ Apply the scientific method to explore natural phenomena, including hypothesis development, observation, experimentation, measurement, data analysis, and data presentation. ⇒ Use the tools of a scientific discipline to carry out collaborative laboratory investigations. ⇒ Gather, analyze, and interpret data and present it in an effective written laboratory or fieldwork report. ⇒ Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data. | | |

Course • Attendance Obligations

⇒Lecture

Chem 1007 has synchronous and asynchronous components. All materials will be posted via blackboard every week. You have the flexibility to watch videos and study materials at your convenience (asynchronous). <u>Synchronous sessions will happen every Wednesday at 3:40 – 5:20 pm via BB Collaborate. Quizzes will also take place at class time.</u> If you must miss class, you are responsible for all material covered during your absence. Make arrangements to get any missed lecture notes and/or handouts from a classmate. Any missed evaluations will be assigned a grade of 0 (see grading policies below).

\Rightarrow 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. It is your responsibility to meet all due dates for all assignments. **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).

| Grading | Your final grade will be calculated as follows: |
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|---------|---|

| Laboratory (see lab guidelines) | 30% |
|--|-----|
| Quizzes (4; drop lowest score- synchronous- multiple choice/short answer on BB; open notes) | 30% |
| "Chemistry in the News" Assignment-see below (asynchronous; submitted to lab instructor via email) 10% for article selection, 15% for report | 25% |
| Labels Assignment- see below (asynchronous; submitted to lab instructor via email) | 15% |
| Extra credit: Discussion posts (asynchronous; submitted as a discussion comment on BB) | 5% |

Other extra credit opportunities will be available during class meetings

"Chemistry in the News" Assignment

Part 1: To highlight Chemistry's role in "everyday" events, you will pick a news article from a selection provided by your instructor (posted on BB). Additionally, you must explain why you chose that particular article in a short (100-150 words) paragraph. (10% of final grade)

Part 2: Using the information provided by your instructor for each particular article (on BB), you will explain the chemistry involved in the topic in one page or less. (15% of final grade)

"What is in the Stuff We Use?" a.k.a Labels Assignment

You will take pick <u>one</u> household item (for instance, a processed food item, a cleaning item, or a cosmetic/personal care item), and look up the chemical structures and formulas for <u>five</u> chemicals listed in the label. Submit this list along with pictures of the item and label. (15% of final grade)

Grading Policies Please note:

- Evaluations will be based on lecture materials. Questions from the lab experiments may also be included.
- You should not use the internet or any external help during quizzes; however, you may use lecture slides, notes and other class materials.
- It is the student's responsibility to note evaluation dates and times, and to be sure not to schedule other activities during this time. <u>There are no make-up evaluations</u>
- Course work cannot be completed independent of the lab work. <u>NO credit is earned for</u> <u>coursework without completion of the laboratory assignments</u>. *THE LABORATORY* <u>PORTION IS REQUIERED TO RECEIVE A PASSING GRADE</u>
- Asynchronous assignments must be submitted on the assignment deadline (by 11:59PM ET). Synchronous assignments must be completed during class time on the assignment deadline. All missed assignments will receive a grade of zero. <u>There are no make-evaluations.</u>
- If you are unable to submit an assignment due to a documented extenuating circumstance, you will be given the opportunity to turn in your assignment late.
 - \Rightarrow If you are unable to submit an assignment, you must contact the instructor **prior** to the assignment deadline.
 - \Rightarrow In the event of unpredictable extenuating circumstances, other arrangements may be made after discussion with the instructor and possibly the Dean as warranted.
 - \Rightarrow At the instructor's discretion, a grade of "0" will be assigned to any quizzes and/or writing assignment where academic dishonesty is displayed.

Laboratory Instructor Contact Information:

Information

Nazia Nayeem Sections: W3AB, W3BB Email: <u>nazia.nayeem@brooklyn.cuny.edu</u> Office hours: Thursdays 11:00am - 12:00pm pm via Zoom link

Leda Lee Section: W3CB Email: <u>BCCT.LLee@gmail.com</u> Office hours: Wed. 12:00 - 1:00 pm via Zoom (link posted in Announcements in Blackboard). Please email for other times to meet (availability is in Lab syllabus)

Inna Bakman: Sections: W3DB, W3EB Email: <u>Inna.Bakman@brooklyn.cuny.edu</u> Office hours: Wednesday 7:00 - 8:00 pm via Zoom (link will be provided on Blackboard)

• Laboratory Schedule:

- \Rightarrow All the laboratory sessions will be performed virtually, i.e, you will be provided with material to read in advance via BB.
- \Rightarrow Labs meet EVERY WEEK for the first three units of our course (see course schedule). You need to hand in 8 lab reports for grading.

Lab meeting 1: Check-in. Lab Safety. Lab Techniques.

Lab meeting 2&3: Exp.1- Physical and Chemical Changes and the Conservation of Mass Lab meeting 4: Exp. 2 - A Change in Energy Accompanies Physical and Chemical Changes Lab meeting 5: Exp. 3 – Colorimetric Identification of Ions Lab meeting 6: Exp. 4 – Using Models to Build Molecules Lab meeting 7: Exp. 5 – Counting Atoms and Molecules Using the Concept of Moles Lab meeting 8: Exp. 6 – The Effects of Chemical Bonds on The Physical Properties of Matter Lab meetings 9: Exp. 7 – How Water is Purified Lab meetings 10: Exp. 8 - Paper Chromatography of Pigments in a Spinach Leaf

• Lab Reports and Grades:

- \Rightarrow The lab procedures may be downloaded as a pdf-document from Blackboard.
- ⇒ Each of the completed 8 lab report sheets must be submitted online on the Thursday following the completion of the experiment (see schedule of experiments) via Blackboard (11:59ET deadline).
- ⇒ Late report submission policy: Reports/worksheets will lose 5 points for each day they are late. After ONE WEEK, reports/worksheets will NOT be accepted and the report will receive a grade of zero.
- \Rightarrow Student's names must appear on each Lab report sheets.
- \Rightarrow 10 points are awarded for each lab report.
- \Rightarrow 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.

Contact your laboratory instructor for questions regarding the laboratory portion of the course*

Important • Academic dishonesty is prohibited in the City University of New York.

Information

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 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.

• Student Withdrawals

⇒ If you decide to withdraw from this course, it is your responsibility to do so by the Deadline for Student Withdrawals (May 17^{th} , 2021).

Important Dates

Friday, January 29 Thursday, February 4 Monday, May 17 Tuesday, May 18 Wednesday, May 19 Tuesday, May 25 First day of Spring 2021 classes Last day to add a course Last day to withdraw from a course with a "W" grade Reading Day Final Examinations Begin Final Examinations End / End of Spring Semester

• Library Services

All course books are on reserve at the Library. Some are also available as electronic books. Librarians can help you access them.

• Consideration of Religious Observance

If you must be absent from class or miss evaluation deadlines because of religious observance, please inform your instructor as soon as possible to schedule make ups for any examination or study requirements.

• 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, and reporting obligations of Brooklyn College employees on the Office of Diversity and Equity Programs website. All reports of sexual misconduct or discrimination should be made to Ivana Bologna, Title IX Coordinator (718.951.5000, ext. 3689), and may also be made to Public Safety (719.951.5511), the New York City Police Department (911 or a local NYPD precinct), or Michelle Vargas, Assistant Director of Judicial Affairs, Division of Student Affairs (718.951.5352) as appropriate.

• Students with Disabilities

The Center for Student Disability Services (CSDS) is currently working remotely. 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 instructor.

Important • Student Bereavement Policy

Information continued

Students who experience the death of a loved one must contact the Division of Student Affairs, 2113 Boylan Hall, 718.951.5352, <u>studentaffairs@brooklyn.cuny.edu</u>, if they wish to implement either the Standard Bereavement Procedure or the Leave of Absence Bereavement Procedure. For more information see <u>http://www.brooklyn.cuny.edu/web/about/initiatives/policies/bereavement.php</u>

• Immigrant Student Success Office

The Immigrant Student Success Office (ISSO) is to recruit, enroll, and retain students, with an emphasis on new immigrants like the students granted Deferred Action for Childhood Arrivals (DACA) who identify with the Development, Relief and Education for Alien Minors act (DREAMERS), and first-generation students by providing the necessary academic and non-academic support to ensure graduation from Brooklyn College in a timely manner.

Tentative Schedule Spring 2021*

| Dates | Class | Торіс | Assignment (synchronous/asynchronous) |
|-------|----------|---|--|
| | | Applications | * All assignments/lecture slides will be posted on BB |
| | UNIT 1 | THE BASICS | |
| 2/03 | 1 | Intro; What is Chemistry? The Scientific Method/Process | |
| | Lab | Check-in. Lab Safety, Lab Technique | es. |
| 2/10 | 2 | Properties of Matter Composition of Matter Air Quality | |
| | Lab | Exp. 1 - Physical and Chemical Chai | nges of Matter and the Conservation of Mass, part 1 |
| 2/17 | 3 | Units of Measurement Scientific Notation & Sig. Figures Metric vs. Imperial System | Audience Choice Topic Selection Learning Surprise Discussion Extra Credit Due |
| | Lau | | |
| | UNIT 2 | THE BUILDING BLOCKS | |
| 2/24 | 4 | Elements and Periodic Table Atoms and Ions | QUIZ 1 |
| 3/03 | Lab 5 | Exp. 2 - A Change in Energy Accomp Atoms and Ions Continued Compounds, Chemical Bonds Writing Chemical Formulas Batteries | banies Physical and Chemical Changes NEWS ARTICLE ASSIGNMENT Part 1 Due |
| | Lab | Exp 3. Colorimetric Identification of I | ons |
| 3/10 | 6 | Naming Ionic Compounds Naming Molecular Compounds Paints | COURSE MIDTERM EVALUATION |
| | Lab | Exp. 4 – Using Models to Build Mole | cules |
| | UNIT 3 | CHEMISTRY IN ACTION | |
| 3/17 | 7 | Molecular Mass Avogadro's Number & Moles | QUIZ 2 |
| | Lab | Exp. 5 – Counting Atoms and Molecu | ules Using the Concept of Moles |
| 3/24 | 8 | Chemical Reactions, Balancing Combustion | LABELS ASSIGNMENT DUE |
| | Lab | Exp. 6 – The Effects of Chemical Bo | nds on The Physical Properties of Matter |
| 3/31 | | NO CLASS | SPRING BREAK |
| 4/07 | 9 | Limiting and Excess Reagent Wildfires | |
| | Lab | Exp. 7 – How Water is Purified | |
| 4/14 | 10 | Aqueous Solutions Naming Ionic Compounds Acids and Bases Potable Water, Water Treatment | Nobel Prize Discussion Extra Credit Due |
| | Lab | Exp. 8 - Paper Chromatography of P | igments in a Spinach Leaf |
| | UNIT 4 | CHEMISTRY IN OUR WORLD | |
| 4/21 | 11 | Polymers Recycling | QUIZ 3 |
| 4/28 | 12 | DNA and Genetics Genetic Engineering, Gene Therapy | NEWS ARTICLE ASSIGNMENT Part 2 |
| 5/05 | 13 | Proteins, Lipids and Carbs Cooking and Digestion; Keto Diet | GMO Discussion Extra Credit Due |
| 5/12 | 14 | Audience Choice Topic | QUIZ 4 |

Please note: all dates are *tentative* and the instructor reserves the right to modify the schedule as needed during the course of the semester.