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: mariana.torrente@brooklyn.cuny.edu, note CHEM 1007 in subject line.

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
1. 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.
2. Experimental protocols for the laboratory portion are posted on Blackboard for download.

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 Obligations

- **Attendance**
  
  **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). Synchronous sessions will happen every Wednesday at 3:40 – 5:20 pm via BB Collaborate. Quizzes will also take place at class time. 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).

- **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:

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

**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 one 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 five chemicals listed in the label. Submit this list along with pictures of the item and label. (15% of final grade)
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. There are no make-up evaluations.

• Course work cannot be completed independent of the lab work. **NO credit is earned for coursework without completion of the laboratory assignments. THE LABORATORY PORTION IS REQUIRED TO RECEIVE A PASSING GRADE.**

• 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. **There are no make-up evaluations.**

• 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.
  
  ⇒ If you are unable to submit an assignment, you must contact the instructor prior to the assignment deadline.
  
  ⇒ In the event of unpredictable extenuating circumstances, other arrangements may be made after discussion with the instructor and possibly the Dean as warranted.
  
  ⇒ At the instructor’s discretion, a grade of “0” will be assigned to any quizzes and/or writing assignment where academic dishonesty is displayed.
Instructor Contact Information:

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

Leda Lee
Section: W3CB
Email: BCCT.LLee@gmail.com
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: Inna.Bakman@brooklyn.cuny.edu
Office hours: Wednesday 7:00 - 8:00 pm via Zoom (link will be provided on Blackboard)

Laboratory Schedule:

- All the laboratory sessions will be performed virtually, i.e., you will be provided with material to read in advance via BB.
- 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 meeting 9: Exp. 7 – How Water is Purified
Lab meeting 10: Exp. 8 - Paper Chromatography of Pigments in a Spinach Leaf

Lab Reports and Grades:

- 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.
- 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.

***Contact your laboratory instructor for questions regarding the laboratory portion of the course***
• **Academic dishonesty is prohibited in the City University of New York.**
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](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.

• **Student Withdrawals**

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

**Important Dates**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Friday, January 29</td>
<td>First day of Spring 2021 classes</td>
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<tr>
<td>Thursday, February 4</td>
<td>Last day to add a course</td>
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<tr>
<td>Monday, May 17</td>
<td>Last day to withdraw from a course with a “W” grade</td>
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<td>Tuesday, May 18</td>
<td>Reading Day</td>
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<td>Wednesday, May 19</td>
<td>Final Examinations Begin</td>
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<tr>
<td>Tuesday, May 25</td>
<td>Final Examinations End / End of Spring Semester</td>
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• **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.
• **Student Bereavement Policy**
  Students who experience the death of a loved one must contact the Division of Student Affairs, 2113 Boylan Hall, 718.951.5352, studentaffairs@brooklyn.cuny.edu, if they wish to implement either the Standard Bereavement Procedure or the Leave of Absence Bereavement Procedure. For more information see http://www.brooklyn.cuny.edu/web/about/initiatives/policies/bereavement.php

• **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*

<table>
<thead>
<tr>
<th>Dates</th>
<th>Class</th>
<th>Topic</th>
<th>Assignment (synchronous/asynchronous)</th>
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<td>* All assignments/lecture slides will be posted on BB</td>
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### UNIT 1 THE BASICS

<table>
<thead>
<tr>
<th>2/03</th>
<th>1</th>
<th>Applications</th>
<th>Lab Check-in. Lab Safety, Lab Techniques.</th>
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<tbody>
<tr>
<td>2/10</td>
<td>2</td>
<td>Properties of Matter</td>
<td>Lab Exp. 1 - Physical and Chemical Changes of Matter and the Conservation of Mass, part 1</td>
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<tr>
<td>2/17</td>
<td>3</td>
<td>Units of Measurement</td>
<td>Audience Choice Topic Selection</td>
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<td>Scientific Notation &amp; Sig. Figures</td>
<td>Learning Surprise Discussion Extra Credit Due</td>
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<td>Metric vs. Imperial System</td>
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<td></td>
<td><strong>Lab</strong> Exp. 1 - Physical and Chemical Changes of Matter and the Conservation of Mass, part 2</td>
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### UNIT 2 THE BUILDING BLOCKS

<table>
<thead>
<tr>
<th>2/24</th>
<th>4</th>
<th>Elements and Periodic Table</th>
<th>QUIZ 1</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Atoms and Ions</td>
<td>Lab Exp. 2 - A Change in Energy Accompanies Physical and Chemical Changes</td>
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<tr>
<td>3/03</td>
<td>5</td>
<td>Atoms and Ions Continued</td>
<td>NEWS ARTICLE ASSIGNMENT Part 1 Due</td>
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<td>Compounds, Chemical Bonds</td>
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<td>Writing Chemical Formulas</td>
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<td>Batteries</td>
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<tr>
<td>3/10</td>
<td>6</td>
<td>Naming Ionic Compounds</td>
<td>COURSE MIDTERM EVALUATION</td>
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<td>Naming Molecular Compounds</td>
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<td>Paints</td>
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<td><strong>Lab</strong> Exp. 3. Colorimetric Identification of Ions</td>
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<td>Exp. 4 – Using Models to Build Molecules</td>
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### UNIT 3 CHEMISTRY IN ACTION

<table>
<thead>
<tr>
<th>3/17</th>
<th>7</th>
<th>Molecular Mass</th>
<th>QUIZ 2</th>
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<tbody>
<tr>
<td></td>
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<td>Avogadro’s Number &amp; Moles</td>
<td>Lab Exp. 5 – Counting Atoms and Molecules Using the Concept of Moles</td>
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<tr>
<td>3/24</td>
<td>8</td>
<td>Chemical Reactions, Balancing Combustion</td>
<td>LABELS ASSIGNMENT DUE</td>
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<td></td>
<td></td>
<td><strong>Lab</strong> Exp. 6 – The Effects of Chemical Bonds on The Physical Properties of Matter</td>
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<tr>
<td>3/31</td>
<td>9</td>
<td>NO CLASS</td>
<td>SPRING BREAK</td>
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<tr>
<td>4/07</td>
<td>10</td>
<td>Limiting and Excess Reagent Wildfires</td>
<td>Nobel Prize Discussion Extra Credit Due</td>
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<tr>
<td>4/14</td>
<td>11</td>
<td>Aqueous Solutions</td>
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<td>Naming Ionic Compounds</td>
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<td>Acids and Bases</td>
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<td>Potable Water, Water Treatment</td>
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<td><strong>Lab</strong> Exp. 7 – How Water is Purified</td>
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<td>Exp. 8 - Paper Chromatography of Pigments in a Spinach Leaf</td>
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### UNIT 4 CHEMISTRY IN OUR WORLD

<table>
<thead>
<tr>
<th>4/21</th>
<th>12</th>
<th>Polymers Recycling</th>
<th>QUIZ 3</th>
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<tbody>
<tr>
<td>4/28</td>
<td>13</td>
<td>DNA and Genetics</td>
<td>NEWS ARTICLE ASSIGNMENT Part 2</td>
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<td>Genetic Engineering, Gene Therapy</td>
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<tr>
<td>5/05</td>
<td>14</td>
<td>Proteins, Lipids and Carbs</td>
<td>GMO Discussion Extra Credit Due</td>
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<td>Cooking and Digestion; Keto Diet</td>
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<tr>
<td>5/12</td>
<td>14</td>
<td>Audience Choice Topic</td>
<td>QUIZ 4</td>
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Please note: all dates are tentative and the instructor reserves the right to modify the schedule as needed during the course of the semester.