Spring 2018 - CHEMISTRY 110-0003 Course #2239: (3 credit hours)

Instructor/Contact Info:  Dr. Linh Nguyen, FW 324, phone: 753-6011, email: bnguyen2@niu.edu
Office Hours:  Tuesday 05:00-05:50pm (FW324), Wednesday 09:00-09:50am and Friday 02:00-02:50pm (Faraday 237); or by appointment

On-Line Course Information:  Blackboard (https://webcourses.niu.edu)
Materials:  General, Organic, and Biochemistry (9th Edition) by Denniston; and Top Hat package

Lecture Times:  Tuesday, and Thursday @ 06:00 – 07:15pm in Faraday Hall 143

Tutors and Lab TA Office Hours:  The Department of Chemistry and Biochemistry maintains a free Tutor Room for General Chemistry students. The Tutor Room is located in Faraday 247 and the schedule will be posted online (http://www.niu.edu/chembio/academics/undergraduate/help-room.shtml) and outside the help room door. Students are also encouraged to ask laboratory TAs for assistance in understanding the lecture material.
Paid Tutors - Names of tutors for hire are available from Linda Davis in Faraday 319 (Dept. office).

Exams and Grading:
Exams – There will be three 100-point hour exams, with each exam covering content from 2-3 chapters. These exams will be administered during the regular semester (dates are indicated in the lecture schedule). The lowest regular exam score will be dropped. There will be no make-up exams or extra credit points. Any student more than 30 minutes late to any exam will not be allowed to take it. You must attend your registered section for all exams, no exceptions.

Attendance and in-class participation – 100 points. The Chemistry and Biochemistry Department commits to closing the equity gap in education and making quality education real for all groups of students. As suggested by the CLAS equity team, attendance and class participation will be incorporated in your grade assessment. Attendance and class participation are each ten percent of your grade. Top Hat technologies will be used to record attendance and in-class respond in real time and within location bound limit.

Homework – 100 points. All the homework and reading assignment will be online using the Top Hat technologies. See separate handout for more information. Homework is twenty percent of your grade. Top Hat homework can be accessed through almost all digital devices including smart phones, tablets, desktop or laptop computers. It is as available as it can be for you to do the homework ON TIME. THERE WILL BE NO MAKE-UP HOMEWORK OR EXTENSION.

Final Exam -  The final exam is a 100 pt. comprehensive exam. Final:  Tuesday, May 8, 6-7:50 p.m. in Faraday Hall 143

Total points:   Hourly exams = 200 pts. (the lowest of three exams is dropped)
               Attendance = 50 pts.
               Class participation = 50 pts.
               Homework = 100 pts.
               Comprehensive final exam = 100 pts.
               Total = 500 pts.

Grading scale:  A ≥ 450   B ≥ 400   C ≥ 350   D ≥ 300   F < 300
This scale may be revised, but this is not guaranteed.

Accessibility Statement:  Northern Illinois University is committed to providing an accessible educational environment in collaboration with the Disability Resource Center (DRC). Any student requiring an academic accommodation due to a disability should let his or her faculty member know as soon as possible. Students who need academic accommodations are encouraged to contact the DRC. The DRC is located on the 4th floor of the Health Services Building, and can be reached at 815-753-1303 (V) or drc@niu.edu.

Academic Integrity:  Good academic work must be based on honesty. The attempt of any student to present as his or her own work that which he or she has not produced is regarded by the faculty and administration as a serious offense. Students are considered to have cheated if they copy the work of another during an examination or turn in a paper or an assignment written, in whole or in part, by someone else. Students are responsible for plagiarism, intentional or not, if they copy material from
books, magazines, or other sources without identifying and acknowledging those sources or if they paraphrase ideas from such sources without acknowledging them. Students responsible for, or assisting others in, either cheating or plagiarism on an assignment, quiz, or examination may receive a grade of F for the course involved and may be suspended or dismissed from the university.

**TENTATIVE LECTURE SCHEDULE**

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<tr>
<th>WEEK</th>
<th>CHAPTER/TOPIC</th>
<th>Exams</th>
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<tr>
<td>1.</td>
<td>01/16</td>
<td>Introduction</td>
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<tr>
<td>2.</td>
<td>01/23</td>
<td>Atoms and Molecules</td>
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<tr>
<td>3.</td>
<td>01/30</td>
<td>Molecules</td>
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<td>4.</td>
<td>02/06</td>
<td>Physical and Chemical Changes</td>
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<td>5.</td>
<td>02/13</td>
<td>Types of reactions</td>
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<td>6.</td>
<td>02/20</td>
<td>States of Matters</td>
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<td>7.</td>
<td>02/27</td>
<td>Ideal gas laws</td>
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<tr>
<td>8.</td>
<td>03/06</td>
<td>Solutions</td>
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<td>9.</td>
<td>03/13</td>
<td><strong>Spring Recess</strong></td>
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<td>10.</td>
<td>03/20</td>
<td>Energy</td>
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<tr>
<td>11.</td>
<td>03/27</td>
<td>Thermodynamics laws</td>
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<td>12.</td>
<td>04/03</td>
<td>Kinetics</td>
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<td>13.</td>
<td>04/10</td>
<td>Equilibrium</td>
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<td>14.</td>
<td>04/17</td>
<td>LeChatelier’s Principle</td>
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<td>15.</td>
<td>04/24</td>
<td>Acids and Bases</td>
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<td>05/01</td>
<td>Acid-Base Buffers</td>
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<td>17.</td>
<td>05/08</td>
<td><strong>Final Exam @ 6:00 – 7:50pm</strong></td>
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**General Education Course Objectives**

- Improve ability to think critically and logically
- Perform basic chemical computations and improve ability to reason quantitatively
- Improve ability to interpret mathematical models
- Learn how to use the scientific method and theories to understand chemical phenomena
- Develop an appreciation for the importance of the role of chemistry in everyday life
- Develop an understanding of the historical development of the field of chemistry

**Course Content Objectives**

- Understand concepts of matter and energy and become acquainted with metric and SI units of measurement
- Understand atoms and ions and their subatomic components
- Learn the electronic structures of atoms and ions, and understand their relationship to periodic properties
- Correctly predict the shapes of molecules and ions from Lewis dot/VSEPR characteristics
- Learn chemical nomenclature
- Learn basic stoichiometry calculations
- Develop ability to predict outcomes of chemical reactions from knowledge of reactants and reaction types
- Understand the chemical basis for the physical behavior of gases, liquids, and solids
- Become knowledgeable about the properties of aqueous solutions
- Develop the ability to predict reactions and equilibria from knowledge of Le Chatelier’s Principle
- Understand the physicochemical characteristics of acids, bases, oxidants, and reductants
- Become knowledgeable about nuclear chemistry and its applications to medical fields