CHEM 102-01 Chemistry: Environmental & Energy

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Instructor: Dr. R. Cohen
Office Location: Logan Hall, Room 202A
Office Hours: W,F, 11:30 am – 1:30 pm;
T: 12:30 pm – 2:30 pm., and by appointment
phone 745-2067
e-mail: Cohen@xavier.edu
Class Meetings: Tuesdays, and Thursdays 11:30 am – 12:20 pm in Logan 101
Tentative Schedule:

<table>
<thead>
<tr>
<th>Date</th>
<th>Chapter, topic</th>
<th>Assessments, notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/25, 8/27</td>
<td>Chapter 1 – Introduction, a world of Chemistry</td>
<td></td>
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<tr>
<td>9/01, 9/03</td>
<td>Chapter 2 – Chemical View of Matter</td>
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<tr>
<td>9/08, 9/10</td>
<td>Chapter 3 – Atoms and the Periodic Table</td>
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<tr>
<td>9/15, 9/17</td>
<td>Chapter 3 continued, begin chapter 5- Bonding</td>
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<tr>
<td>9/22, 9/24</td>
<td>Chapter 5 – Chemical Bonding</td>
<td>EXAM 1 – Thursday 9/24 Ch. 1 – 3</td>
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<tr>
<td>9/29, 10/01</td>
<td>Chapter 4 – begin The air we breathe</td>
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<tr>
<td>10/6, 10/08</td>
<td>chapter 4- the air we breathe</td>
<td>NO CLASS 10/08</td>
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<tr>
<td>10/13, 10/15</td>
<td>chapter 6 - carbon dioxide and the Greenhouse effect</td>
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<tr>
<td>10/20, 10/21</td>
<td>Chapter 7: Chlorofluorocarbons and the ozone layer</td>
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<tr>
<td>10/27, 10/29</td>
<td>Exam Tuesday ; begin chapter 8 – chemical reactivity</td>
<td>EXAM 2 – Tuesday 10/27; ch. 4,5,beginning of 6</td>
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<tr>
<td>11/03, 11/05</td>
<td>Chapter 8 – Chemical Reactivity</td>
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<tr>
<td>11/10, 11/12</td>
<td>Chapter 8 – Chemical Reactivity, continued</td>
<td></td>
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<tr>
<td>11/17, 11/19</td>
<td>chapter 10 oxidation-reduction ; Exam 11/18;</td>
<td>Exam 3 – Thursday 11/19 Ch. 6, 7, 8</td>
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<tr>
<td>11/24</td>
<td>Conclude chapter 10 (Tuesday); NO CLASS 11/26; Happy Thanksgiving!</td>
<td>No class 11/26</td>
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<tr>
<td>12/01, 12/03</td>
<td>chapter 12- energy and hydrocarbons</td>
<td></td>
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<tr>
<td>12/08, 12/10</td>
<td>Chapter 13 nuclear energy</td>
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<tr>
<td>12/15 (Tues.)</td>
<td>FINAL EXAM; : Tuesday 12/15, a.m</td>
<td>Final exam: (cumulative)</td>
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</table>

Course Objectives: This course is intended to provide the student with a general overview of the basic concepts of Chemistry, with emphasis on how chemistry and associated concepts relate to everyday life especially in the areas of the environment and energy. Only the most basic mathematical operations will be used in this course. Students will be encouraged to bring articles to class that relate to the topics being discussed. Special topics that require short written papers may be assigned as well.

Attendance policy: Attendance is mandatory for all class meetings. Only documented illness and family / personal emergencies will be considered excused absences. 5 points will be deducted at the end of the term for each unexcused absence. Missed exams cannot be made up except in the case of a signed physician’s statement. Then, a make-up exam will be administered within one week.

Grading Policy: 3 class Exams, 100 points each; Final Exam = 200 points. HW: 10 points each assignment. Total points from exams = 500 points. Student who bring timely articles to class and give a 3-5 minute report on the article can earn 5 extra points per article up to a maximum of 15 extra points.
Homework: I will assign homework. The assignments are listed at the end of this document; due dates will be announced. HW, when assigned, is worth 10 points for each assignment. Short written assignments may be assigned from time to time on relevant topics. Points will be assigned to these assignments as appropriate.

Grading Scale: A = 93-100%  A- = 90 - 92%  B+ = 87-89%  B = 83-86%  B- = 80-82%
C+ = 77-79%  C = 73 -76%  C- = 70-72%  D+ = 67-69 %  D = 63-66%  D- = 60-62%
F = <60%

It should be noted that according to the Xavier University Catalog, a grade of “A” is earned for EXCEPTIONAL performance. This is the grading policy of the faculty of the Chemistry Department as well. Refer to the Chemistry Department web site for more information: www.xavier.edu/chemistry/dept_policies_grading.cfm

Academic Misconduct Policy: A grade of zero will be given to any student violating the University Academic Honesty Policy. The student may appeal according to normal university procedures as stated in the University Catalog.

Special Accommodations: It is the responsibility of the student to inform the instructor of any individual medical or other conditions that may require special attention or accommodations at the beginning of the semester. Reasonable consideration will be given for these conditions. Please visit the LAC for assistance and further information.

NOTICE: Please turn off ALL portable electronic devices before class begins. The use of these devices (with the exception of simple calculators) is not permitted in this class for any reason at any time.

SLO’s for University Core Courses as they apply to Chem 102:

GOAL 1: Students will be effective communicators in writing and orally
1. Students will organize and express their ideas in writing and orally
2. Students will formulate clear and arguable theses, supported by evidence drawn from appropriate sources
3. Students will utilize an effective writing process guided by audience, purpose, cultural context, and disciplinary standards

GOAL 2: Students will be critical thinkers
1. Students will analyze and interpret texts, images, objects, artifacts, and quantitative and qualitative data
2. Students will evaluate the use of science and mathematics in society and everyday life in an informed manner

GOAL 4: Students will be able to understand and appreciate the arts, humanities and science disciplines, and reflect on connections among these studies
1. Students will explain the scientific method, including the difference between hypotheses, theories and laws, valid hypothesis and/or models
2. Students will apply social science methodology to relevant social issues

GOAL 5: Students will be integrated individuals who articulate a coherent, ethical perspective on the world and their place in it
1. Students will recognize the societal, ethical and moral dimensions of discourse, art, information, science and technology
2. Students will relate their knowledge and skills in a reflective and constructive way to their life
experiences and the challenges confronting today’s world

3. Students will use information and resources responsibly in their communication and research

4. Students will utilize intellectual, moral, and spiritual tools and sensibilities to engage faithfully and responsively in the world for the promotion of peace, social justice, and ecological sustainability

GOAL 6: Students will be aware global citizens

1. Students will consider perspectives of diverse groups when making decisions

2. Students will interact with sensitivity as members of society and as professionals with people who have ideas, beliefs, attitudes, and behaviors that are different from their own

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Chem 102 – Homework Problems “Applying Your Knowledge”
Due dates will be announced in class

Chapter 1 – 1, 2, 4, 5, 8, 10a, c, e only
Chapter 2 – 2, 6, 8, 10, 15, 17-21, 25, 27, 29, 33, 40, 47-50
Chapter 3 – 1, 2, 7, 8, 10, 12, 14, 15, 17, 18, 22, 25, 27, 42, 44, 45, 46, 50, 53, 59
Chapter 4 – 1-4, 6, 7, 8, 11, 13, 15, 16, 20, 22, 23, 27, 28
Chapter 5 – 1, 6, 9, 11, 12, 13, 15, 16, 17, 21, 22, 26, 31, 32, 34, 37, 38, 39, 42, 44, 46, 51
Chapter 6 – 1, 2, 3, 7, 8, 9, 12, 13, 15, 16, 20, 21, 27, 28
Chapter 7 – 1(a, b, c, d, f, g, h, j, k, m), 4, 6, 7, 9, 12, 16, 17, 20-23, 25, 26, 30
Chapter 8 - 1, 3, 6, 9, 10, 13-15, 19-22, 24-26, 28, 30, 34-37, 40, 42, 48, 52
Chapter 10 – 1, 2, 5, 6, 7, 8, 10, 11, 12, 14, 15-18, 21, 23-25, 27, 30, 32, 34, 42, 44
Chapter 12 - 1-5, 13, 19-25, 29, 32, 36
Chapter 13 – 1 – 6, 9 – 14 , 16, 18, 19, 32, 28, 30, 35, 39, 47