CHEM 100 Chemistry in Society
3 Credits
CRN 60258 (online)
CRN 60283 (online)

INSTRUCTOR: Leticia Colmenares, Ph.D.
OFFICE Imiloa 116
E-MAIL: leticia@hawaii.edu
OFFICE HOURS: MWF 10:25-11:25 am (Imiloa 116)
TR 8:00-9:00 pm (online)
F 12:30-1:30 pm (Imiloa 116)
TELEPHONE: 236-9120
EFFECTIVE DATE: Fall 2010

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College is committed to excellence in the liberal arts and career development: we support and challenge individuals to develop skills, fulfill their potential, enrich their lives, and become contributing, culturally aware members of our community.

CATALOG DESCRIPTION

Chemistry 100 provides a survey of basic concepts and applications of chemistry in the real world. This course is suitable for students who had little or no background in chemistry and serves to fulfill a general education physical science core course for the non-science major or as a preparatory course for Chem. 151.

STUDENT LEARNING OUTCOMES

1. Describe the relationship between properties and structure of matter.
2. Name chemicals, balance chemical and nuclear equations.
4. Identify the types of chemical reactions (i.e. acid-base, redox, nuclear) and their applications to everyday lives.
5. Explain the chemistry of household chemicals, and the composition of air and water.
6. Relate a specific chemical concept to a current environmental, health, industrial, or technological issue by writing a short research paper.


**GRADING**

Grades will be based on 10 (best out of 13) chapter quizzes, 8 assignments, 2 discussion forum, midterm exams, 1 research paper, and a final exam.

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<td>(10)</td>
<td>(8)</td>
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<tr>
<th></th>
<th>100 points</th>
<th>40 points</th>
<th>80 points</th>
<th>20 points</th>
<th>180 points</th>
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**IMPORTANT:** To pass the course (with at least a 'C' grade) you should score at least 60% in the final cumulative exam. The final exam will be made up of 90-multiple-choice questions. It will be a proctored paper and pencil exam at the Testing Center in your campus.

Course grades will be assigned as follows:

- **A**: 600-540 points
- **B**: 539-480 points
- **C**: 479-420 points
- **D**: 419-360
- **F**: below 360

**N Grade:** The 'N' grade indicates that the student has worked conscientiously, attended regularly, finished all work, fulfilled course responsibilities, and has made measurable progress but has not achieved the minimal student learning objectives and is not yet prepared to succeed at the next level. Or, the student has made consistent progress in the class but is unable to complete the class due to extenuating circumstances, such as major health, personal or family emergencies. Students requesting for N grade must provide a formal letter of request before the final examination with supporting evidences.

The other grades **I, W, Cr, NC** to be assigned are described in the current college catalog. These options must be discussed with the instructor. The deadline to change from A-F to Cr/NC grade option is on October 25, 2010.

**COURSE TASKS**

- Weekly quizzes (online)
- Midterm Exams (online)
- Assignments
- Discussion
- Research Paper
- Final Exam (paper-and-pencil at the Testing Center)
LEARNING RESOURCES

1. Instructor Lecture Notes (available at WCC Bookstore)-required
2. Textbook: *Chemistry in Changing Times by Hill and Kolb, 2010*-required
4. Multimedia (videos, animations, etc.) in Modules (course website)
5. Practice quizzes & exams in Tasks, Tests & Surveys (course website)
6. Chat Room online hours (TR 8-9 pm) for consultation (in course website)
7. Handouts downloadable from Modules in course website
   - Skills & Resources for Chem 100
   - How To Do Computer Stuff
   - Frequently Asked Questions & Answers
9. Calculator & Periodic Chart
10. Face-to-face office consultation (upon request)

HOW TO STUDY FOR THIS COURSE

*Usually students take online courses with the assumption that it will be easier than face-to-face classes. Unfortunately this is not correct. Online courses actually require more discipline and individual effort on the part of the student. The focus is on YOU learning rather than the TEACHER lecturing.*

1. You are expected to login the course website at least every other day. The website is your classroom and not coming to the site is like skipping class. You are expected to spend at least six hours a week to this course. Please schedule real-time hours for this course. Your online ‘attendance’ will be monitored.

2. Please check the Course Calendar and study the reading assignment in your lecture notes. If you do not have the printed lecture notes sold at the WCC Bookstore, please download, and print the notes by chapter found in Laulima Modules. Focus on the objectives of each chapter. Read the notes and textbook with the objectives in mind.

3. In addition to the textbook and lecture notes, multimedia materials will be used to deliver course content in the course website. These include voice over powerPoints, videos, animations, audio recordings, movies and interactive websites that are organized by chapter. All the downloadable files and links are found under Modules in the course website.

4. Every week there is an assessment scheduled. Practice for the assessment by doing the worksheet, learning checks, self-assessments and practice tests. It is important to work through each problem with pencil and paper and active thinking. Please study each of the examples in your lecture notes. Please cover the answers and treat each example as if this problem was in your quiz or exam.
5. If you cannot solve the problem or answer the question, please post your question (as clearly as possible by citing the page number) in the Discussion forum. I will monitor the discussion postings very closely and provide answers as needed. However, I strongly encourage fellow students to answer the posted questions. In articulating the answer you yourself get a deeper understanding of the concepts, and for that, I will give you extra credit.

6. The textbook website Chemplace (http://www.aw-bc.com/chemplace/) contains a collection of virtual tutorials and chapter self-tests. The text that you bought from the bookstore has an access code that is needed in registering in Chemplace.

7. Please take the practice quiz before the actual quiz. It is important that you feel a certain level of confidence before taking the actual test. It does not work to just look at the question and answer to learn. Hence, I strongly encourage that you take the practice quiz at least twice. I will give 0.5 extra credit point if you score 80% or higher in a practice quiz. There will be a total of 15 practice quizzes and midterms.

8. You should plan to spend at least 6 hours per week on this course (remember, you’re not physically attending a class or spending time traveling to and from campus!). Here is how your time will be allocated during most weeks:

- three hours reading chapter notes and text reading, equivalent to attending classes face-to-face
- an hour viewing online video lectures and websites
- an hour doing self-assessments, learning checks and worksheets
- a half hour taking and reviewing practice quiz
- a half hour preparing and taking the actual quiz

9. Have a notebook. Take notes when watching videos, tutorials, animations, self-assessment tests and any other resource. If you don’t write your notes, you will forget this when you reach the final exam.

10. Back up all your submissions.

POLICIES

1. Online Quizzes/Midterms. Online quizzes and midterms are accessed in Laulima Tasks, Tests and Surveys. A chapter quiz consisting of ten multiple-choice questions will be given every Thursday. The quiz will be made available for 48 hrs starting from Thursday 8 pm to Saturday at 8 pm, EXCEPT for Quiz #1 which will be available for 8 days to allow late-registrants to catch up with class work. All times are Hawaii Standard Time. You may take the quiz anytime within this period. You are expected to move on to the next chapter as soon as you are done with a quiz. There will be two midterms. Each of which will cover approximately 40% of the material of the course. Please see the course schedule on the last page.
If you encounter a technical problem (e.g., the computer crashes, Laulima is down, etc.), please submit a Request Assistance form (on the left hand side of the Laulima login page) immediately from the computer that the problem occurred. Please indicate the course, which quiz, what kind of computer, which web browser, and what kind of internet connection was used. Please notify me by email immediately before the deadline has passed. Upon verification by Laulima, your quiz/midterm will be reset and you will be allowed a second attempt. However, please make sure that your Internet connection is a robust landline connection when taking online quizzes and midterm. Please do not take your quiz/midterm at the coffee shop or using wireless connection.

Make-up or retaking quizzes/midterms will NOT be allowed. The three lowest quiz scores will be dropped.

The quizzes/midterms will be timed (10 to 20 min for quizzes and 50 min for midterms). Each quiz will have 10 questions while the midterm will have 40-45 questions. Each of these will be opened weekly and should be completed by the time and date set in the course schedule. When the quiz/midterm date ends, the answers will automatically become available; hence you will not be allowed to take a late quiz/midterm. If you failed to take the quiz, this will be counted as zero. Please plan to take the quizzes and exams on the day that it becomes available, rather than on the last hour.

All quizzes and midterms are closed books and notes, and individual effort. You may not consult with any of your classmates while taking them. You are not allowed to tell a friend the type of questions on the quiz, the answers, or help a classmate in any way (e.g., by explaining how to solve the problem). This would fall under the guidelines of academic integrity and any evidence of cheating will result in a score of 0 for all parties involved. Also keep in mind that we are assessing your knowledge and understanding of the concepts - attempting to find the answers online through other resources is not in the spirit of academic honesty. An "F" will be assigned to students involved in cheating and will be reported to the Dean.

2. The final exam will be a paper-based exam to be sit-down written in-person at the WCC Testing Center or at other Exam Centers outside of WCC. It will be cumulative, 2 hrs long and will include 90 multiple-choice questions. Picture ID is required and no cell phones, IPODS, or calculators will be allowed; all bags will be left in the back of the classroom. If you are located off the island of Oahu, please inform me early in the semester so that proper arrangements can be made with your campus representative.

3. Assignments. There are a total of eight assignments (see list below). Each is worth 5 points. If an assignment is submitted past the deadline, the maximum it will get is 3 points. Each assignment is described in the Lecture notes. You have to read relevant information in the Lecture notes or do online research before writing up the assignment. Each of this is due on Saturday midnight of the week it is due (see course schedule -last page.
How to turn in assignment. The assignment should be saved in a WORD file .doc or .docx, but not in text files [.txt], labelled with your family name and assignment number and uploaded in Laulima “Assignments” (as attachments.)

#1- Scavenger hunt exercise (Chap 0)
#2 - Chapter #1 Risk Benefit Analysis & Desirability Quotient (Chap 1)
#3 - Scientific Method (Chap 1)
#4 – Methane (Chap 4)
#5 – Dihydrogen Monoxide: Why we need to study nomenclature, (Chap 4)
#6 – Balancing Equations of Reactions of the Atmosphere (Chap 5)
#7 – The Chemistry of Airbags  (Chap 6)
#8 – The Chemistry of Antacids (Chap 7)

The scavenger hunt assignment is mandatory. Please do this as soon as possible. It is very important that you become familiar with the tools in the course website: Tasks, Tests & Surveys, Gradebook, Modules, Discussion, Assignment, and Chat Room.

4. The research paper is a three-page (double space) paper of 500-600 words to make a connection between a chemistry concept and an application in everyday life. This will be made based on textbook readings and online resources. A sample paper and a handout “tips on how to search for references” are downloadable in Modules. The paper grade will be based on the following rubrics:
   • contains title and purpose (1 point)
   • explains at least one chemistry concept in detail (1 point)
   • discusses at least one application or current issue in detail (2 points)
   • connects the concept to application (2 points)
   • body has correct length (at least 500 words) (1 point)
   • does not have spelling and grammar errors (1 point)
   • citations are included (1 point)
   • reference list of at least five reliable sources is included (1 point)

Please submit the research paper in the same way you submit your assignment.

5. Discussion Postings. Two discussion postings will be required (10 points @):
#1- Chemistry in the news
#2- Application of a chemical reaction in everyday life

The rubrics for grading:
   • Posting is focused, organized, and clearly conveys ideas to reader (3 points)
   • Posting shows integrates concepts from the notes, text or multimedia (3 points)
   • Well-developed, use own words and stimulates discussion (2 points)
   • Interacted timely at least twice in a thoughtful and courteous way (2 points)

6. Discussion Extra Credit. Everyone should use the "Discussion" to pose questions on chemistry topics. If you give a correct response to your classmates’ question in the Discussion you will be awarded 0.5 extra credit point. Interactions
promote deeper learning hence I encourage you all to participate in this forum. If you post your questions, others will be able to benefit from the answers. Just remember when online to follow netiquette rules. Avoid flaming. See http://www.albion.com/netiquette/corerules.html

7. **Other Extra Credit.** You can earn extra credit up to a maximum of 20 points. Correct response to classmates' topic question is 1 point each. Scoring 80% in practice quizzes and exams is 0.5 points each. Attendance in chemistry forum is two points each. This will be held at 130-230 pm in Imiloa 111, on the following dates:
   - Sep 2 Th Nanotechnology in Hawaii
   - Sep 24 Fri Photovoltaics
   - Oct 8 Fri Global Warming in Hawaii & Pacific
   - Oct 12 Tue Medicine from Slugs
Details are found at http://www.wcc.hawaii.edu/chemistry_forum.

8. Questions about the class procedures should be posted in the Chat Room. Use “email” only for grade related and personal questions. Please ALLOW 24 HOURS for responses to emails or messages. In emergencies, you may also call at 236-9120. Please speak slowly and leave your name, your phone number and times when you can be reached.

**DISABILITIES ACCOMMODATION**

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encourage to contact the Disability Specialist Counselor (and instructor) to discuss reasonable accommodations that will help you to succeed in this class. Ann Lemke can be reached at 235-7448 or lemke@hawaii.edu or you may stop by Hale 'Akoakoa 213 for more information.

**COURSE CONTENT AND SCHEDULE**

- Last day to withdraw, Oct 25, 2010
- Last Day of instruction Dec 9, 2010
- Please print the course schedule and use the last column to record score.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Readings</th>
<th>Quiz Schedule*</th>
<th>Notes</th>
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<tbody>
<tr>
<td>1</td>
<td>Orientation &amp; Chemistry</td>
<td>Chap 1 &amp; 2 (Notes &amp; Text) Multimedia in Modules</td>
<td>Aug 23- Sep 4 Scavenger Hunt &amp; Syllabus Quiz</td>
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<tr>
<td>2</td>
<td>Atomic Structure</td>
<td>Chap 3 Notes &amp; Text Multimedia in Modules</td>
<td>Sep 2-11 Quiz #1-Chaps 1 &amp; 2 Assign#1 due</td>
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<td>3</td>
<td>Chemical Bonds</td>
<td>Chap 4 Notes &amp; Text Multimedia in Modules</td>
<td>Sep 9-11 Quiz #2-Chap 3 Assign#2 due</td>
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<tr>
<td>Week</td>
<td>Topic</td>
<td>Notes</td>
<td>Multimedia</td>
<td>Dates</td>
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<td>4</td>
<td>Chemical Accounting I</td>
<td>Chap 5a Notes &amp; Text Multimedia in Modules</td>
<td>Sep 16-18</td>
<td>Quiz #3-Chap 4 Assign#3 due</td>
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<tr>
<td>5</td>
<td>Chemical Accounting II</td>
<td>Chap 5b Notes &amp; Text Multimedia in Modules</td>
<td>Sep 23-25</td>
<td>Quiz #4-Chap 5a Assign#4 due</td>
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<td>6</td>
<td>Gases, Liquids, Solids</td>
<td>Chap 6 Notes &amp; Text Multimedia in Modules</td>
<td>Sep 30-Oct 2</td>
<td>Quiz #5-Chap 5b Assign#5 due</td>
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<td>7</td>
<td>Acids &amp; Bases</td>
<td>Chap 7 Notes &amp; Text Multimedia in Modules</td>
<td>Oct 7-9</td>
<td>Midterm 1 Chaps 1-5 Assign#6 due</td>
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<td>8</td>
<td>Oxidation &amp; Reduction</td>
<td>Chap 8 Notes &amp; Text Multimedia in Modules</td>
<td>Oct 14-16</td>
<td>Quiz #6-Chap 6 Assign#7 due</td>
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<td>9</td>
<td>Organic Chemistry &amp; Polymers</td>
<td>Chap 9 &amp; 10 Notes &amp; Text Multimedia in Modules</td>
<td>Oct 21-23</td>
<td>Quiz #7-Chap 7 Assign#8 due</td>
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<td>10</td>
<td>Nuclear Chemistry</td>
<td>Chap 11 Notes &amp; Text Multimedia in Modules</td>
<td>Oct 28-30</td>
<td>Quiz #8-Chap 8</td>
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<td>11</td>
<td>Air</td>
<td>Chap 13 Notes &amp; Text Multimedia in Modules</td>
<td>Nov 4-6</td>
<td>Quiz #9 Chaps 9 &amp; 10</td>
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<td>12</td>
<td>Water</td>
<td>Chap 14 Notes &amp; Text Multimedia in Modules</td>
<td>Nov 11-13</td>
<td>Quiz #10-Chap 11 (Nuclear)</td>
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<tr>
<td>13</td>
<td>Household Chemicals</td>
<td>Chap 21 Notes &amp; Text Multimedia in Modules</td>
<td>Nov 18-20</td>
<td>Midterm 2 Chaps 6-11</td>
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<tr>
<td>14</td>
<td>Research</td>
<td>Research Paper Have topic approved List of references</td>
<td>Nov 25-27</td>
<td>Quiz#11-Chap 13 Air Quiz#12-Chap14 H2O</td>
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<td>15</td>
<td>Paper</td>
<td>Writing</td>
<td>Dec 2-4</td>
<td>Quiz 13-Chap 21 Household Chemicals</td>
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<td>16</td>
<td>Review</td>
<td></td>
<td>Dec 6-Research Paper</td>
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<td>17</td>
<td>Cumulative Final Exam</td>
<td>WCC Testing Center (open 8 am to 6 pm)</td>
<td>Dec 13, 2010</td>
<td>Final Exam</td>
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* Assignment/exam calendars may be changed due to institutional, weather or class problems.