CHEM 100 Chemistry in Society

3 Credits
CRN 62329 (online)
CRN 62360 (online)

INSTRUCTOR: Leticia Colmenares, Ph.D.
OFFICE: Imiloa 116
E-MAIL: leticia@hawaii.edu
OFFICE HOURS: MWF 9:30-10:30 am, WF 12:30-1:30 pm
TELEPHONE: 236-9120
EFFECTIVE DATE: Fall 2009

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 chapter **12 quizzes, 2 midterm exams, 1 research paper, and a final exam.**

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>120</td>
</tr>
<tr>
<td>Research Paper (1)</td>
<td>100</td>
</tr>
<tr>
<td>Midterm Exams (2)</td>
<td>180</td>
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<tr>
<td>Final Exam</td>
<td>200</td>
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<tr>
<td><strong>Total</strong></td>
<td>600</td>
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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 100-multiple-choice questions. It will be a proctored paper and pencil exam at the Testing Center during the final exam week. 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.

1. 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

   The other grades I, W, Cr, NC to be assigned are described in the current college catalog. The NC grade will be assigned only as part of the Cr/NC option except in very unusual circumstances. Those circumstances must be discussed with the instructor.

2. A chapter quiz consisting of ten multiple-choice questions will be given every Wednesday. The quiz will be made available for 36 hrs starting from Wed 12 noon to Thursday night at 11:55 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.

3. There will be two midterms. Each of which will cover approximately one-third of the material of the course. The tests will be based on the lecture notes and the reading assignments. Please see the course schedule on page 6.

4. The research paper is a two-to 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 will be provided. 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)

5. 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 2 hrs long and will include 100 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.

6. All quizzes, midterm and final exam are closed notes and closed books.

COURSE TASKS

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

LEARNING RESOURCES

1. Required Textbook: Chemistry in Society by Hill and Kolb, 2010
2. Chemplace, login required at http://www.aw-bc.com/chemplace/
3. Course Website: http://laulima.hawaii.edu
   or use quick link on the upper right of http://www.wcc.hawaii.edu/
4. Math Review Appendix A-7 to A-9
5. Peer Tutoring in Chemistry
6. Calculator
7. Use Discussion Board in Laulima to ask questions.
8. Office hours consultation

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. The focus is on YOU learning rather than the TEACHER lecturing.
1. Please study the entire syllabus including the Course Calendar. This lists by week - topic, textbook and notes reading assignments and due dates assigned to each.

2. Please download, print and read the chapter notes. Focus on the objectives of each chapter and the notes corresponding to each objective. Read the textbook also with the objectives in mind.

3. View the animation and other videos included in the chapter notes, with the objective in mind. Go to Chemplace to view the video tutorials.

4. Do the self-assessments, followed by practice quiz and then, the graded quiz.

5. Questions about the class or any topic should be placed into LAULIMA Discussion-Questions. Post on the Discussion Board the muddiest point in the chapter. Anyone who answers correctly the question will be awarded one extra credit point. Otherwise, I will post the answer. Please do not email to my private address.

6. Individual face-to-face tutoring are available through a grant funded by the Ifuku Family Foundation and also through TRIO. Students are encouraged to use tutoring from the very beginning of the semester before running into difficulty. Open hours are viewable at http://windward.hawaii.edu/chemistry_Tutors/

7. You are expected to login 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.

8. The correct format for submitting assignments saved in a WORD file is .doc or .docx, but not in text files [.txt]. The dropbox in Laulima is under “Messages.” Please address it to instructor (alone) and attach your document. Each assignment is worth two extra credit points.

9. You are responsible to MEET ALL DEADLINES as listed on the class calendar. Please plan to submit all assignments in ample time. Please do not expect the instructor or your classmates to remind you about deadlines or guidelines.

10. Please ALLOW 24 HOURS for responses to emails or messages. I will look at class emails and messages at 9 am. You may also call at 236-9120. Please speak slowly and leave your name, your phone number and times when you can be reached.

11. 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 (available online and can be printed out) and text reading, equivalent to attending classes face-to-face
- an hour viewing online video lectures and websites and doing self-assessments

- an hour practicing solving problems

- a half hour taking and reviewing practice quiz

- a half hour preparing and taking the actual quiz

12. 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.

13. Back up all your submissions.

OTHER POLICIES

1. **The Topics and exam schedule** are found in the Course Schedule on the last page. All of your quizzes and midterms will be accessed and completed online, except for the final exam.

2. It is expected that you have the required **math** for the class. Please review unit conversions in Appendix A-5 to A-9 on your own.

3. **Missed quizzes/exams.** If you miss a quiz or exam, please contact the instructor immediately. Late quizzes/exam will get an **automatic deduction** of 50%. Example, if you score 8 out of 10, it will be recorded as 4.

4. **Extra Credit.** Each assignment counts as two points. Attendance in chemistry forum is two points. If you give a correct response to your classmate’s muddiest point question in the Discussion you get one point. The maximum extra credit one can earn is 12 points (2% of total points).

5. **Make-ups.** Exams and quizzes **cannot** be retaken to obtain better grades.

6. If you have any **special learning needs**, including hearing/visual impairment, please inform the instructor as soon as possible.

7. An "F" will be assigned to students involved in **cheating** and will be reported to the Dean.

8. If you have any questions or issues to discuss with the instructor, the **best time** to see her is during office (Imiloa 111) hours or make an appointment.


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 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](mailto:lemke@hawaii.edu) or you may stop by Hale 'Akoakoa 213 for more information.
# COURSE CONTENT AND SCHEDULE

- Labor Day, 9/7
- Last day for withdrawal, 10/27
- Veterans’ Day, 11/11
- Thanksgiving recess 11/26-11/27
- Last Day of instruction 12/10

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Readings</th>
<th>Quiz Schedule</th>
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<tbody>
<tr>
<td>1</td>
<td>Orientation &amp; Chemistry</td>
<td>Chap 1 Notes &amp; Text pages</td>
<td>Aug 26 Scavenger Hunt &amp; Syllabus Quiz</td>
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<tr>
<td>2</td>
<td>Atoms</td>
<td>Chap 2 Notes &amp; Text pages</td>
<td>Sep 2 Quiz Chap 1</td>
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<td>3</td>
<td>Atomic Structure</td>
<td>Chap 3 Notes &amp; Text pp.</td>
<td>Sep 9 Quiz Chap 2</td>
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<td>4</td>
<td>Chemical Bonds</td>
<td>Chap 4 Notes &amp; Text</td>
<td>Sep 16 Quiz Chap 3</td>
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<td>5</td>
<td>Chemical Accounting</td>
<td>Chap 5 Notes &amp; Text</td>
<td>Sep 23 Midterm1 (Chapters 1-4)</td>
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<td>6</td>
<td>Gases, Liquids, Solids &amp; Intermolecular</td>
<td>Chap 6 Notes &amp; Text</td>
<td>Sep 30 Quiz Chap 5</td>
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<td>7</td>
<td>Acids &amp; Bases</td>
<td>Chap 7 Notes &amp; Text</td>
<td>Oct 7 Quiz Chap 6</td>
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<td>8</td>
<td>Oxidation &amp; Reduction</td>
<td>Chap 8 Notes &amp; Text</td>
<td>Oct 14 Quiz Chap 7</td>
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<td>9</td>
<td>Organic Chemistry</td>
<td>Chap 9 Notes &amp; Text</td>
<td>Oct 21 Midterm 2 (Chapters 5-8)</td>
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<td>10</td>
<td>Polymers</td>
<td>Chap 10 Notes &amp; Text</td>
<td>Oct 28 Quiz Chap 9</td>
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<td>11</td>
<td>Nuclear Chemistry</td>
<td>Chap 11 Notes &amp; Text</td>
<td>Nov 4 Quiz Chap 10</td>
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<td>Air</td>
<td>Chap 13 Notes &amp; Text</td>
<td>Nov 11 Quiz Chap 11</td>
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<td>Water</td>
<td>Chap 14 Notes &amp; Text</td>
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<td>Household Chemicals</td>
<td>Chap 21 Notes &amp; Text</td>
<td>Nov 25 Quiz Chap 14</td>
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<td>Research</td>
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<td>Research Paper Due</td>
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