CHEM 100 Chemistry in Society
3 Credits  CRN 64171
MW 10:00-11:15 am, Imiloa 111

INSTRUCTOR:  Leticia Colmenares, Ph.D.
OFFICE     Imiloa 116
E-MAIL:     leticia@hawaii.edu
OFFICE HOURS:  W 9-10 am, R 10:30-11:30 am, R 8-9 pm (online)
TELEPHONE:  236-9120
EFFECTIVE DATE:  Fall 2013

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai‘i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O‘ahu’s Ko‘olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

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.

COURSE TASKS

• Attendance & daily quizzes
• Assignments (submit online)
• Research Paper (submit in turnitin.com)
• Four long Exams
• Cumulative Final Exam
GRADING

1. Grades will be based on the following:

   Attendance & Quizzes-------------------------------- 90 points
   Assignment----------------------------------------- 60 points
   Research ----------------------------------------- 90 points
   Midterm Exams (60 x 4)----------------------------- 240 points
   Final Exam ----------------------------------------- 120 points
   Total --------------------------------------------- 600 points

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/audit option (with Office of Admissions & Records) is on Nov 4, 2013.

If you drop out from the course without any notice you will get a 'F' grade. To avoid this, please be sure to withdraw officially (through MyUH) by Nov 4, 2013.

2. Assignment: There is homework due every week to be submitted online in Laulima Assignments. Please see 'Policies' for details.

3. Attendance & Quizzes. There is a quiz in every class meeting. There are only 1-3 questions per quiz. Please prepare a half sheet of paper for the quiz every meeting.

4. There will be four long exams, each of which will cover approximately one-fourth of the course. All exams (including final exam) are closed notes and closed books.

5. The final exam will cover all topics (cumulative) 2 hrs. long. The dates of the assessments are given in the Course Schedule (see last page).

6. You are required to attend at least 8 supplemental instruction (SI) sessions during the semester. You will be deducted points for not meeting the minimum.
You will get extra credit points for going beyond the minimum.

**LEARNING RESOURCES**

1. Instructor Lecture Notes Fall 2013 (spiral bound available at WCC Bookstore)-required
3. Calculator (required) & Periodic Chart
4. Course website: [https://laulima.hawaii.edu](https://laulima.hawaii.edu)
5. Multimedia (videos, animations, etc.) in Modules *(Laulima)*
6. Practice quizzes & exams in Tasks, Tests & Surveys *(Laulima)*
7. *Supplemental Instruction Sessions (Leader: Zach)*

**HOW TO STUDY FOR THIS COURSE**

1. Please **use the Course Schedule** (found on the last page) throughout the semester. It contains the topics, reading requirements and due dates. You are responsible to **MEET ALL DEADLINES** as listed on the class schedule.

2. Prepare for each class by familiarizing yourself with the **material in the Lecture Notes**. Identify and define unfamiliar terms. Reading beforehand can help you to listen more actively in class and give an advanced indication of any difficulties that you can then clarify in the lecture. Make marginal notes on the slides.

3. Focus on the **objectives of each chapter**. Read the notes and textbook with the objectives in mind before coming to class.

4. **Have a notebook**. Take notes during lecture, and, also when watching videos, tutorials, and animations. Ask questions, if you do not understand. Bring the Instructor Notes (and calculator) to class at all times.

5. **Be on time**. A quiz is given at every class meeting.

6. **Participate** in all the course **activities** including group activities. Always treat everyone in class with respect.

7. **Review** your notes soon after class. Attend the **supplemental instruction** sessions held *before and after* the lecture in the classroom. This is a good place to edit your notes, find and fill in missing points, and get tips on how to solve your homework and review for quizzes and exams. Be sure to summarize the main point of the lecture in a few sentences. Do assigned practice problems and drills.
8. Test yourself by doing the Lecture Notes worksheet, learning checks, self-assessments and Laulima practice test in Tasks, Tests and Surveys.

9. Supplemental instruction is available before and after class. Students should use tutoring from the very beginning of the semester before running into difficulty.

10. If you have any problems, please do not hesitate to see your instructor for consultation. The best time is before class in the office.

11. You should plan to spend at least 6 hours outside class time per week on this course:

   • 2-3 hours reading chapter notes and text (including multimedia in Laulima Modules)
   • 1-2 hours supplemental instruction
   • 1-2 hour doing self-assessments, learning checks, worksheets and assignment
   • one hour taking practice quiz in Laulima Tasks, Tests and Surveys.

12. The multimedia materials available in the Laulima course website 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 Laulima.

13. Back up all your submissions (assignments and research paper).

**POLICIES**

1. **Daily quizzes (4 points each).** The quiz will be timed (5 to 10 min). Missed quizzes will be counted as zero. No make up for missed quizzes.

2. **Long exams and the final** exam are closed books and notes (no cheat sheet). The final exam will be cumulative covering ALL topics taken throughout the semester and will take about 2 hrs long. **Check the course schedule.**

3. Only one missed exam (with requisite doctor’s note, police report or obituary note) can be made up if you notify (email) the instructor before or on the day of the exam. There will be no make-up for the final exam.

4. Exams and quizzes cannot be retaken to obtain better grades.

5. **Assignments/Homework.** There are a total of 12 assignments (see list below). Each assignment is described in the Lecture notes as well as in the assignment template posted in Laulima Modules. Please follow the detailed instructions. It is expected that you understand the concept and extend this by applying it to other applications not
covered in the text by doing an online research. Please do not write your assignment just based on its title.

**How to turn in assignment.** The assignment should be saved as .doc, .docx or .pdf. **IMPORTANT.** If you are using word-processing software other than Microsoft word, please convert your submission to .pdf so I can open it and grade it.

Label the file with your family name and assignment number and upload in Laulima “Assignments” as attachment.

Each assignment will be graded based on its grading rubric described in the instructions (5 points). If an assignment is submitted past the deadline, a penalty will be implemented. Each of this is due on **Wednesday 10 am** (see course schedule -last page).

Assign #1 - Scavenger Hunt in Laulima
Assign #2 - Risk Benefit Analysis & DQ (Ch1 p.3)
Assign #3 – Redi’s Hypothesis (Ch1 p.5)
Assign #4 – Chemicals in Tobacco (Ch4 p.26)
Assign #5 - Reactions of the Atmosphere (Ch5 p.7)
Assign #6 – Practice mass-mass conversion (Ch5 p.24)
Assign #7 – Vitamin A & E (Ch6 p.13)
Assign #8 – What is the chemistry of airbags? (Ch6 p.18)
Assign #9 – What are the different types of antacids? (Ch7 p.16)
Assign #10 - Give one example of a redox reaction in everyday life. Write the reactants and products and its application.
Assign #11 – Discussion Post#1 Chemistry in the News
Assign #12 – Discussion Post#2 Chemistry in Everyday Life

The scavenger hunt assignment (Assign #1) 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, Grade book, Modules, Assignment, and Chat Room.

6. The **research paper** is a three-page (double space) paper of at least 750 words to make a **connection between a chemistry concept covered in the course 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 Laulima Modules.

Research paper topics need to be pre-approved by **Oct 30, 2013 (by email).** Topics like the Kreb’s cycle, Glycolysis, or Prebiotics, etc, (textbook topics in nutrition, biology and zoology, etc courses) and airbags and antacids (already included in assignments) are **NOT acceptable.**

Instructor will give feedback if paper is submitted (hard copy) AT LEAST one week before due date. The due date is on **Dec 9, 2013.**
The research 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 (1 point)
- connects the chemistry concept to application (1 point)
- information is technically sound and coherent (1 point)
- well-organized and body has correct length (at least 750 words) (1 point)
- no errors in spelling, grammar and use of English (1 point)
- citations are included (1 point)
- reference list of at least five reliable sources is included (1 point)

7. An "F" will be assigned to students involved in cheating (in quizzes, homework, research paper, midterms or final) and will be reported to the Vice Chancellor for Student Services.

8. Extra Credit. You can earn extra credit up to a maximum of 20 points.

- Extra credit essays
- Extra credit chapter activities in SI
- Attendance in SI sessions.
- Attendance in chemistry forum is 4 points each. The dates of the chemistry forum will be posted at [http://www.wcc.hawaii.edu/chemistry_forum](http://www.wcc.hawaii.edu/chemistry_forum).

9. You have access to your scores and grades 24/7 in [Laulima gradebook](http://www.wcc.hawaii.edu/chemistry_forum).

10. Don't cause or tolerate distractions. Move or tactfully ask those making noise to be quiet.

11. Disruptive behavior, such as activated cell phones, text messaging, eating, sleeping, prolonged chattering, reading other materials not pertinent to class, making noise, etc. will not be tolerated. The instructor reserves the right to exclude students who take part in disruptive behavior from class, and will be reported to the Dean.

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

12. If you cannot come to my office, please email me for grade-related and personal questions, and check your hawaii.edu email account for the responses. Please ALLOW 24 HOURS for responses to emails or messages. You may also call at 236-9120.

**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. Also, inform your instructor ASAP.

**COURSE CONTENT AND SCHEDULE**

**Holidays:** Sep 2 (M), Nov 11 (M), Nov 28 (R), Nov 29 (F)
**Important Dates:** Last day for withdrawal, CR/NC Nov 4 (M)
Last day of instruction, Dec 12 (R)

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Chapter</th>
<th>Quiz Schedule*</th>
<th>Learning Outcomes</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Orientation &amp; Chemistry</td>
<td>Chap 1 &amp; 2</td>
<td>Aug 26&lt;br&gt;Aug 28&lt;br&gt;Assign#1</td>
<td>Scientific method, DQ, matter, classes, properties and changes.</td>
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<tr>
<td>3</td>
<td>Chemical Bonds</td>
<td>Chap 4</td>
<td>Sep 9&lt;br&gt;Sep 11&lt;br&gt;Assign#3</td>
<td>Name chemical compounds. Write chemical formulas. Ionic &amp; covalent compounds. Polar and Nonpolar molecules.</td>
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<td>4</td>
<td>Chemical Accounting I</td>
<td>Chap 5a&lt;br&gt;Bring a calculator</td>
<td>Sep 16&lt;br&gt;Sep 18&lt;br&gt;Exam 1</td>
<td>Balance chemical equations. Solve for molar mass, moles, grams.</td>
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<td>5</td>
<td>Chemical Accounting II</td>
<td>Chap 5b&lt;br&gt;Bring a calculator</td>
<td>Sep 23&lt;br&gt;Sep 25&lt;br&gt;Assign#4</td>
<td>Solve problems involving mole ratios. Solve using unit factor method. Solution concentration.</td>
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<td>6</td>
<td>Gases, Liquids, Solids &amp; Intermolecular</td>
<td>Chap 6</td>
<td>Sep 30&lt;br&gt;Oct 2&lt;br&gt;Assign#5</td>
<td>Describe the relationship between properties and structure of matter. IMF. Gases.</td>
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<td>7</td>
<td>Acids &amp; Bases</td>
<td>Chap 7&lt;br&gt;Bring a calculator</td>
<td>Oct 7&lt;br&gt;Oct 9&lt;br&gt;Exam 2</td>
<td>Identify acid-base reactions and their applications to everyday lives.</td>
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<td>8</td>
<td>Oxidation &amp; Reduction</td>
<td>Chap 8</td>
<td>Oct 14&lt;br&gt;Oct 16&lt;br&gt;Assign#6</td>
<td>Identify redox reactions and their applications to everyday lives.</td>
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<td>9</td>
<td>Organic Chemistry &amp; Polymers</td>
<td>Chap 9 &amp; 10</td>
<td>Oct 21&lt;br&gt;Oct 23&lt;br&gt;Assign#7</td>
<td>Carbon compounds: structures and names. Alkanes, Alkenes, Acids...</td>
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<td>Paper Topic due (send by email)</td>
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<td>11</td>
<td>Air</td>
<td>Chap 13</td>
<td>Nov 4 Nov 6 Exam 3</td>
<td>Balance nuclear equations. Identify nuclear reactions and their applications to everyday lives.</td>
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<td>List of References due</td>
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<td>15</td>
<td>Draft Paper due</td>
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<td>Dec 2 Dec 4 Exam 4</td>
<td>Relate a specific chemical concept to a current environmental, health, industrial, or technological issue.</td>
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<td>16</td>
<td>Final Paper Due Dec 9</td>
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<td>Dec 9 Dec 11 Assign#12</td>
<td>Final Exam Review</td>
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<td>Dec 16, 2013 (M) Final Exam</td>
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* Assignment/exam calendars may be changed due to institutional, weather or class problems.*