CHEM 100 Chemistry in Society
3 Credits CRN 64335
TR 10:00-11:15 am, Imiloa 111

INSTRUCTOR: Leticia Colmenares, Ph.D.
OFFICE: Imiloa 116
E-MAIL: leticia@hawaii.edu
OFFICE HOURS: MW 1-2 pm, TR 11:30-12:30 pm, F 9-10 (online)
TELEPHONE: 236-9120
EFFECTIVE DATE: Spring 2012

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

- Weekly quizzes
- Assignments
- Research Paper
- 3 Midterm Exams
- Final Exam
**GRADING**

Grades will be based on **10 chapter quizzes, 8 assignments, 3 midterm exams, 1 research paper, and, a final exam.**

- Weekly Quizzes (10) (best out of 11)------------------- 100 points
- Assignment------------------------------------------ 40 points
- Research paper (1) ---------------------------------- 100 points
- Midterm Exams (75 x 3)-------------------------------225 points
- Final Exam -----------------------------------------135 points
  Total ------------------------------------------------600 points

Course grades will be assigned as follows:

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<thead>
<tr>
<th>Grade</th>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>600-540</td>
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<td>B</td>
<td>539-480</td>
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<td>C</td>
<td>479-420</td>
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<td>D</td>
<td>419-360</td>
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<tr>
<td>F</td>
<td>below 360</td>
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**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 Apr 2, 2012.

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 by Apr 2, 2012.

**LEARNING RESOURCES**

1. Instructor Lecture Notes (spiral bound available at WCC Bookstore)-required
3. Calculator (required) & Periodic Chart
5. Course website: [https://laulima.hawaii.edu](https://laulima.hawaii.edu)
6. Multimedia (videos, animations, etc.) in Modules (Laulima)
7. Practice quizzes & exams in Tasks, Tests & Surveys (Laulima)
8. Supplemental instructor –after every class
9. Smarthinking online live tutor and essay center (see flier in Laulima)
http://windward.hawaii.edu/smarthinking/
10. Chem 100L (1 credit) is offered in the fall semester.

**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. Please **come to class everyday**. Bring the Instructor Notes (and calculator) to class. Be on time. The first five minutes are the most important part of the lecture.

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. If you don't write your notes, you will forget the material when you reach the final exam. Ask questions, if you do not understand.

5. **Participate** in all the course **activities** including group activities.

6. **Review** your notes soon after class. Do assigned practice problems and drills.

7. **Weekly assessment**. Practice for the assessment by doing the worksheet, learning checks, self-assessments and **Laulima practice test in Tasks, Tests and Surveys**. 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.

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

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

10. If you are at home and need a tutor, use Smarthinking. Also use this resource to improve your homework paragraphs and research paper.

11. You should plan to spend at least 6 hours outside class time per week on this course: -- two hours reading chapter notes and text (including multimedia in Laulima Modules)

- two hours doing self-assessments, learning checks, worksheets and assignment

- two hours preparing your summary index card and taking practice quiz in Laulima Tasks, Tests and Surveys.

12. In case you missed a lecture, you must view the **multimedia materials** available in the Laulima 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 Laulima.

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

POLICIES

1. **Weekly quizzes will be given on Thursdays.** The quiz will be **timed** (15 min). You are allowed to use your own 3 x 5 summary index card as cheat sheet. Missed quizzes will be counted as zero. The two lowest quiz scores will be dropped.

2. All **midterms and final exam are closed books and notes** (no cheat sheet). There will be three midterm exams, each about 30% of the course material. 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 eight assignments (see list below). Homework/assignments are found in the Instructor Notes and their due dates are announced in class. Please submit all assignments (HARD COPY) at the start of class. Late homework will NOT be accepted. Assignments may be turned in by email before the start of class IF you have a legitimate reason for being absent on the due date.

Assign #1 - (only for online)
Assign #2 - Risk Benefit Analysis & DQ (Ch1 p.3) Notes p.10
Assign #3 – Redi’s Hypothesis (Ch1 p.5) Notes p.12
Assign #4 – Chemicals in Tobacco (Ch4 p.26) Notes p.81
Assign #5 - Reactions of the Atmosphere (Ch5 p.7) Notes p.91
Assign #6 – Practice mass-mass conversion (Ch5 p.24) Notes p.108
Assign #7 – Vitamin A & E (Ch6 p.13) Notes p.132
Assign #8 – What is the chemistry of airbags? (Ch6 p.18) Notes p.137
Assign #9 – What are the different types of antacids? (Ch7 p.16) Notes p.158

Each assignment has its own rubric based on the instructions and is worth 5 points. Please follow the detailed instructions of the assignment in the Instructor Notes. You have to read relevant information or do online research before writing up the assignment. Please do not write an assignment just by reading the title of the assignment. Your assignment MUST be typed or written clearly on white printing paper labelled with your family name and assignment number.
6. The **research paper** is a three-page (double space) paper of at least 700 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.

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 700 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)

Research paper topics need to be pre-approved by Mar 20 (by email). Topics like the Kreb’s cycle, Glycolysis, or Prebiotics, etc, (textbook topics in nutrition, biology and zoology, etc courses) and airbags, antacids and fuel cells (already included in assignments and sample paper) are NOT acceptable. A hard copy of the research paper must be **submitted by May 1**. No electronic copy will be accepted. Plagiarism will not be tolerated.

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 Dean.

8. **Extra Credit.** You can earn extra credit up to a maximum of 20 points. Attendance in a chemistry forum with a written summary is two points. The forum schedule will be posted at [http://www.wcc.hawaii.edu/chemistry_forum](http://www.wcc.hawaii.edu/chemistry_forum). If you score 80% or better in the online practice quiz/exam you get 0.5 extra point. If you complete the chapter exercises arranged by the SI, you get 0.5 extra credit each. There are other extra credit activities imbedded in the Lecture Notes.

9. You have access to your scores and grades 24/7 in **Laulima gradebook**.

10. 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:  Jan 16 (M), Feb 20 (M), Mar 2 (F), Mar 26-30, Apr 6 (F)

Important Dates: **Last day for withdrawal**, CR/NC Apr 2 (M)

**Last day of instruction**, May 2 (W)

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Study Materials</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</td>
<td>Jan 10, Jan 12</td>
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<tr>
<td>2</td>
<td>Atomic Structure</td>
<td>Chap 3</td>
<td>Jan 17, Jan 19</td>
<td>Quiz #1</td>
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<td>3</td>
<td>Chemical Bonds</td>
<td>Chap 4</td>
<td>Jan 24, Jan 26</td>
<td>Quiz #2</td>
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<td>4</td>
<td>Chemical Accounting I</td>
<td>Chap 5a, Bring a calculator</td>
<td>Jan 31, Feb 02</td>
<td>Quiz #3</td>
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<td>Chemical Accounting II</td>
<td>Chap 5b, Bring a calculator</td>
<td>Feb 07, Feb 09</td>
<td>Quiz #4</td>
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<td>Feb 14, Review</td>
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<td>7</td>
<td>Gases, Liquids, Solids &amp; Intermolecular</td>
<td>Chap 6</td>
<td>Feb 21, Feb 23</td>
<td>Quiz #5</td>
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<td>8</td>
<td>Acids &amp; Bases</td>
<td>Chap 7, Bring a calculator</td>
<td>Feb 28, Mar 01</td>
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<td>Oxidation &amp; Reduction</td>
<td>Chap 8</td>
<td>Mar 06, Mar 08</td>
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<td>10</td>
<td>Organic Chemistry &amp; Polymers</td>
<td>Chap 9 &amp; 10</td>
<td>Mar 13, Mar 15</td>
<td>Quiz #8</td>
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<td>Mar 20, Review</td>
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<td>12</td>
<td>Nuclear</td>
<td>Chap 11</td>
<td>Apr 03</td>
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<td>Chemistry</td>
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<td>Apr 05 Quiz #9</td>
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<td>13</td>
<td>Air</td>
<td>Chap 13</td>
<td>Apr 10</td>
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<td>Apr 12 Quiz #10</td>
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<td>Water</td>
<td>Chap 14</td>
<td>Apr 17</td>
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<td>Apr 19 Quiz #11</td>
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<td>Household Chemicals</td>
<td>Chap 21</td>
<td>Apr 24 Midterm 3</td>
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<td>Apr 26</td>
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<td>16</td>
<td>Final Exam Review</td>
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<td>May 1 Paper due</td>
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<td>17</td>
<td>9:30-11:30 am</td>
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<td>May 10, 2012 Final Exam</td>
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* Assignment/exam calendars may be changed due to institutional, weather or class problems.