

CHEM 100 Chemistry in Society

3 Credits CRN 64070

TR 10:00-11:15 am, Imiloa 111

INSTRUCTOR: Leticia Colmenares, Ph.D.

OFFICE Imiloa 116

E-MAIL: leticia@hawaii.edu

OFFICE HOURS: MW 10:00-11:00 pm, TR 11:30-12 noon
(or by appointment)

TELEPHONE: 236-9120

EFFECTIVE DATE: Spring 2017

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.

Chem 100L (1-credit) laboratory course is available this semester. Registration is separate (CRN 64152). This satisfies DY requirement for AA degree.

STUDENT LEARNING OUTCOMES

1. Describe the relationship between properties and structure of matter.
2. Name chemicals, balance chemical and nuclear equations.
3. Solve problems involving mole ratios.
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
- Online quizzes
- Res Paper Topic & 5 References
- Research Paper
- Four Long Exams
- Cumulative Final Exam

GRADING

1. Grades will be based on the following:

Scavenger Hunt -----	10 points (Laulima Assignments)
Attendance & Daily Quizzes-----	70 points (In-class)
Assignments (<i>highest 12</i>)-----	60 points (Laulima Assignments)
Online review quizzes (4)-----	40 points (Laulima ATS)
Research paper topic by due date-----	10 points (Turnitin.com)
Research paper -----	70 points (Turnitin.com)
Midterm Exams (60 x 4) -----	240 points (In-class)
Final Exam -----	120 points (In-class)
Total -----	620 points

Course grades will be assigned as follows:

558-620 total points =	A
496-557 total points =	B
434-495 total points =	C
372-433 total points =	D
below 372 =	F

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 **April 3, 2017**.

If you drop out from the course without any notice you will get 'F' grade. To avoid this, please be sure to withdraw **officially (through MyUH)** by **April 3, 2017**.

2. Attendance & Class Participation will be checked every meeting.
3. **Quizzes.** There is a quiz in every class meeting (1-4 questions per quiz). Please prepare a half sheet of paper for the quiz every meeting. If you're absent, your score is zero. No special quizzes will be given.
4. **Online midterm practice quizzes.** The practice quiz is available in Laulima to help you review and prepare for the in-class long exams. This is open notes, and is accessible one week before each long exam. If you don't take the practice quiz by the closing date, your score is zero.
5. Chapter **Assignment.** You are expected to do the assignment found in Laulima Modules by the due date (see course schedule). Each blank in the assignment corresponds to a one-word answer. Upload your individual work in **Laulima Assignments** weekly. **Each assignment is worth 5 points (60 points total).**
6. There will be **four long exams**, each of which will cover approximately one-fourth of the course. All exams are closed notes and closed books. Each is worth 60 points.
7. 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). Worth 120 points.
8. It is mandatory to attend at least 5 **supplemental instruction (SI) sessions** or **tutoring** during the semester. You will receive 1 extra credit point per 1-hour session. The **SI Leader will email you the schedule**. If you are not available during these hours, please use the **OLA online tutoring**, <http://manoa.hawaii.edu/ola/> (available everyday except Saturdays and State holidays). Students should use tutoring from the very beginning of the semester before running into difficulty.
9. Other **Extra Credit.** You can earn up to 20 extra credit points (maximum). Beyond the 5th session, you will receive 0.5 points per session.

LEARNING RESOURCES

1. Required: Instructor Lecture Notes **Fall 2016** (spiral bound available at WCC Bookstore)
2. Optional: *Chemistry in Changing Times* by Hill and Kolb, 12th or later edition (buy cheapest available online).
3. Calculator (required) & Periodic Chart
4. Course website: <https://laulima.hawaii.edu>
5. Multimedia (videos, animations, etc.) in Modules (*Laulima*)
6. Chapter assignments
7. Online practice quizzes in Assignments, Tests & Surveys (*Laulima ATS*)
8. *Supplemental Instruction*

9. OLA (Online Learning Academy) open everyday except Saturday.
<http://manoa.hawaii.edu/ola/>
10. Paper anti-plagiarism and feedback tool [Http://Turnitin.com](http://Turnitin.com)
11. Office consultation Hours. After every lecture class.

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. **Supplemental instruction is available before every class in Imiloa 112**. Students should use tutoring from the very beginning of the semester before running into difficulty. This is a good place to get tips on how to solve your homework and review for quizzes and exams.
5. **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.
6. **Be on time**. A quiz is given at every class meeting.
7. **Participate** in all the course **activities** including group activities. Always treat everyone in class with respect.
8. **Review** your notes soon after class. This is a good time to edit your notes, find and fill in missing points. Be sure to summarize the main point of the lecture in a few sentences. Do assigned practice problems and drills.
9. Test yourself by doing the **Lecture Notes** worksheet, learning checks, self-assessments and **Laulima practice test in Tasks, Tests and Surveys**.
10. If you have any problems, please do not hesitate to **see your instructor for consultation**. The best time is **after 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 watching multimedia in Laulima Modules
- 1-2 hours supplemental instruction
- 2 hours doing self-assessments, learning checks, worksheets and assignment
- 1 hour taking online quiz in Laulima Tasks, Tests and Surveys.

12. The **multimedia materials** are available in Laulima Modules. These include voice-over powerPoints, videos, animations, audio recordings, movies and interactive websites, and, are organized by chapter.

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

POLICIES

1. **Daily quizzes.** 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.** There are a total of 12 assignments (see course schedule). Each homework assignment is downloadable from **Laulima Modules**.

How to submit assignment. The **individual** assignment should be saved in .doc or .docx or .pdf but **NOT** in .txt or .wps. or .pages **IMPORTANT. If you are using a 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. The due date of the individual assignment will be announced in Laulima. Each individual assignment is worth 5 points. Your score will be zero if you don't submit your individual assignment by the due date. Instructor feedback to each assignment will be posted. Please go back to the "Assignment" to view the instructor's comments. The answer Key to each chapter assignment will be posted in Discussion after the due date.

6. 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: Assignments, Tests & Surveys, Gradebook, Modules, Discussion, Assignment, and Chat Room. Please download it from **Laulima Modules**, answer it, save it and upload in **Assignments**.

7. 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 research paper and a handout “tips on how to search for references” are downloadable in Lulima Modules. You **must** read the provided sample to **avoid making a mistake** of writing an essay instead of a research paper.

Research paper topic (2-3 sentences) with 5 reliable references need to be **pre-approved** by **April 2, 2017** in <http://turnitin.com>. Topics like the Krebs’s cycle, Glycolysis, or Probiotics, etc, (textbook topics in nutrition, biology, zoology and other courses), sample paper topics and airbags and antacids (already included in extra credit) are **NOT acceptable**.

Submit the **draft and final paper** in <http://turnitin.com>. This is free of charge and this helps prevent plagiarism. If this is your first time using this website, please create an account and register. Course ID: 14339516 and Password: Colmenares

Instructor will give **feedback** if paper was submitted **one week before due date (April 20, 2017)**. Paper may be revised and resubmitted on or before the deadline (**April 27, 2017**).

The research paper grade will be based on the following rubrics:

- contains title and purpose/application pertaining to chemistry (10 points)
- correctly explains at least one chemistry concept in detail (10 points)
- discusses at least one application or current issue in detail (10 points)
- effectively connects the chemistry concept to application/issue (10 points)
- information is well-organized and technically sound and coherent (10 points)
- well-organized and body has correct length (at least 750 words) (5 points)
- no errors in spelling, grammar and use of English (5 points)
- citations (in-text) are included (5 points)
- reference list (at the end) contains at least five reliable sources (5 points)

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**.

- Attendance in SI sessions (1.0 point @ for first five 1-hr session; 0.5 points @ beyond 5th session)
- Extra credit essays uploaded in Lulima Assignments
- Attendance in chemistry forum is 3 points each. The dates of the chemistry forum will be posted at http://www.wcc.hawaii.edu/chemistry_forum.

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

10. Please **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: Jan 16 (M), Feb 20 (M), Mar 3 (F), Mar 27-31, Apr 14 (F)

Last day for withdrawal and change grade option, April 3 (M)

Last day of instruction, May 3 (W)

Week	Topic	Chapter	Quiz Schedule*	Learning Outcomes
1	Orientation & Chemistry	Chap 1 &2 <i>Scavenger Hunt Assig Syllabus Quiz</i>	Jan 10 Jan 12	Scientific method, DQ, matter, classes, properties and changes.
2	Atomic Structure	Chap 3 <i>Ass #1 (Ch1&2)</i>	Jan 17 Jan 19	Law of Conservation of Matter, Law of Definite Proportions. Atoms and structure. Periodic Table.
3	Chemical Bonds	Chap 4	Jan 24	Name chemical compounds.

		Ass #2 (Ch 3)	Jan 26	Write chemical formulas. Ionic & covalent compounds. Polar and Nonpolar molecules.
4		Exam 1 Chap 5a	Jan 31 Feb 2	Finish Up Chap 3, Review, and Exam, Start Chap 5
5	Chemical Accounting I (Bring a calculator)	Ass #3 (Ch 4)	Feb 7 Feb 9	Balance chemical equations. Solve using unit factor method. Solve for molar mass, moles, grams.
6	Chemical Accounting II Bring a calculator	Chap 5b Ass #4 (Ch 5a)	Feb 14 Feb 16	Solve problems involving mole ratios. Solution concentration. Like dissolves like. Describe the relationship between properties and structure of matter. IMF
7		Ass #5 (Ch 5b) Exam2	Feb 21 Feb 23	Finish Up Solutions, Review, Exam, Start Ch 6
8	Liquids, Solids & Gases	Chap 6 Ass #6 (Ch 6)	Feb 28 Mar 2	IMF. Gases. Acids & Bases
9	Acids & Bases Oxidation & Reduction	Chap7 Chap8 Ass #7 (Ch7&8)	Mar 7 Mar 9	Identify acid-bases and redox reactions and their applications in everyday lives.
10	Organic Chemistry & Polymers	Chap 9 & 10 Ass #8 (Ch 9&10)	Mar 14 Mar 16	Carbon compounds: structures and names. Alkanes, Alkenes, Acids, Common polymers. Structure. Names and Applications.
11	Food chemistry (handout)	Exam 3 Food Chemistry Ass #9	Mar 21 Mar 23	The chemistry of taste perception and food digestion/metabolism. Food Issues.
		Paper Topic due	Apr 2	http://turnitin.com
12	Nuclear Chemistry	Chap 11	Apr 4	Balance nuclear

		Ass#10 (Ch 11)	Apr 6	<i>equations. Identify nuclear reactions and their applications in everyday lives.</i>
13	Air	Chap 13 Ass#11 (Ch 11)	Apr 11 Apr 13	<i>Explain the composition of air.</i> Oxygen cycle, Acid rain, Ozone.
14	Water	Chap 14 Ass# 12 Ch 12	Apr 18 Apr 20	<i>Explain the composition of water.</i> Hard water. BOD. Water treatment
		Draft Paper due	Apr 20	
15	Household Chemicals	Exam 4 Chap 21 Ass# 13 Ch 13	Apr 25 Apr 27	<i>Explain the chemistry of household chemicals.</i> Soaps. Bleach. Cosmetics.
16	Final Exam Review	Final Paper due	May 2	Turnitin.com
17	Cumulative Final Exam	10:00- 12:00 pm	May 9, 2017 (Tuesday)	

* Assignment/exam calendars may be changed due to institutional, weather or class problems.