

**CHEM 100 Chemistry in Society**

3 Credits CRN 61070

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

**INSTRUCTOR:** Leticia Colmenares, Ph.D.

**OFFICE** Imiloa 116

**E-MAIL:** [leticia@hawaii.edu](mailto:leticia@hawaii.edu)

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

**TELEPHONE:** 236-9120

**EFFECTIVE DATE:** Fall 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 61098). 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 & Quizzes
- Online Assignments
- Online Practice Exams (4)
- Long Exams (4)
- Res Paper Topic & 5 References
- Research Paper (*Turnitin.com*)
- Cumulative Final Exam

## GRADING

Grades will be based on the following:

Scavenger Hunt & Syllabus Quiz-----	10 points ( <i>Assignments &amp; Tests</i> )
Attendance & Quizzes-----	60 points (In-class)
Online Assignments -----	120 points ( <i>Assignments &amp; Tests</i> )
Online practice exams (4)-----	40 points ( <i>Assignments &amp; Tests</i> )
Research paper topic/references-----	10 points ( <i>Turnitin.com</i> )
Research paper -----	50 points ( <i>Turnitin.com</i> )
Midterm Exams (60 x 4) -----	240 points (In-class)
Final Exam -----	120 points (In-class)
Total -----	650 points

Course grades will be assigned as follows:

585-650 total points =	<b>A</b>
520-584 total points =	<b>B</b>
455-519 total points =	<b>C</b>
390-454 total points =	<b>D</b>
below 390 =	<b>F</b>

**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 **October 30, 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 **October 30, 2017**.

## 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, 12<sup>th</sup> or later edition (buy cheapest available online).
3. Calculator (required) & Periodic Chart
4. Course website: <https://laulima.hawaii.edu>
5. *Supplemental Instruction*
6. OLA (Online Learning Academy) open everyday except Saturday.  
<http://manoa.hawaii.edu/ola/>
7. TRIO Student Support Services,  
[https://windward.hawaii.edu/trio/student\\_support\\_services.php](https://windward.hawaii.edu/trio/student_support_services.php)
8. Paper anti-plagiarism and feedback tool <Http://Turnitin.com>
9. Office consultation Hours. After every lecture class.

## COURSE POLICIES

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 listed on the class schedule.
2. Attendance & class participation will be checked every meeting. 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.
3. **Take notes** during lecture, and, also when watching videos, tutorials, and animations in Laulima Modules. Ask questions if you do not understand. Bring the Instructor Notes (and calculator) to class at all times.
4. **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.
5. The **scavenger hunt & syllabus quiz is mandatory**. Please take this as soon as possible in *Laulima Assignments & Tests*. It is very important that you become familiar with the tools in the course website: *Assignments & Tests, Gradebook, Modules* as well as the course policies.

6. **Quizzes.** Come to class on time. A quiz is given at every class meeting. Daily short quizzes (1-4 questions per quiz) will be given. This is a tool to help students and instructor take the pulse of student learning. Usually the quiz is lifted from the **Lecture Notes** learning checks and self-assessments. If you're absent, your score is zero. No special quizzes will be given.

7. **Online chapter assignments.** There is a total of 12 chapter assignments in *Laulima Assignments & Tests*. **Each assignment is worth 10 points (120 points total).** You have 3 attempts (unlimited time) but must be completed before the due date. The due dates will be posted in the Laulima Home page.

8. 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. 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.

9. **Online practice exams.** The practice exam is available in Laulima to help you review and prepare for the in-class long exams. This is open for one week before each long exam. If you don't take the practice quiz by the closing date, your score is zero.

10. 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. **the final exam are closed books and notes** (no cheat sheet). There will be no make-up for the final exam.

11. 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 Laulima 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 **Oct 31, 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: **16009386** and Password: Colmenares

Instructor will give **feedback** if paper was submitted **one week before due date (Nov 28, 2017)**. Paper may be revised and resubmitted on or before the deadline (**Dec 5, 2017**).

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

- contains a title and purpose (thesis statement) (5 points)
- discusses at least one issue and effectively connects to concepts learned in class (10 points)
- information is well-organized and coherent (10 points)
- has in-depth discussion and has correct length (at least 750 words) (10 points)
- no errors in spelling, grammar and use of English (5 points)
- cites all data /information obtained from other sources (5 points)
- lists at least 5 reliable sources, with at least 2 peer-reviewed articles (5 points)

12. 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 go to **TRIO** or 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. The SI session is a good place to get tips on how to solve your homework and review for quizzes and exams.

13. **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 5<sup>th</sup> session)
- Attendance in chemistry forum with 300-word reflection paper is 3 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).

14. 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 Lulima Modules
- 1-2 hours supplemental instruction
- 2 hours doing self-assessments, learning checks, worksheets and assignment
- 1 hour taking online quiz in Lulima Tasks, Tests and Surveys.

15. 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.

16. You have access to your scores and grades 24/7 in **Lulima gradebook**.

17. Please **don't cause or tolerate distractions**. Move or tactfully ask those making

noise to be quiet.

18. 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.

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

20. If you have any problems, please do not hesitate to **see your instructor for consultation**. The best time is **after class in the office**. 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](mailto:lemke@hawaii.edu) or you may stop by Hale 'Akoakoa 213 for more information. Also, inform your instructor ASAP.

#### COURSE CONTENT AND SCHEDULE

**Important Dates: No classes on Sep 4 (M), Nov 10 (F), Nov 23-24 (RF)**

**Last day for withdrawal and change grade option, Oct 30 (M)**

**Last day of instruction, Dec 7 (R)**

Date	Topic	Chapter	Learning Outcomes
8/22	Orientation & Chemistry	Chap 1 &2 <i>Scavenger Hunt &amp; Syllabus Quiz</i>	Scientific method, DQ, matter, classes, properties and changes.
8/29	Atomic Structure	Chap 3	Law of Conservation of Matter, Law of Definite Proportions. Atoms and structure. Periodic Table.
9/5	Chemical Bonds	Chap 4	<b>Name chemical compounds.</b> Write chemical formulas. Ionic & covalent compounds. Polar and Nonpolar molecules.
9/12		<i>Exam 1</i> Chap 5a	Finish Up Chap 3, Review, and Exam, Start Chap 5

9/19	Chemical Accounting I (Bring a calculator )		<b>Balance chemical equations.</b> Solve using unit factor method. Solve for molar mass, moles, grams.
9/26	Chemical Accounting II Bring a calculator	Chap 5b	<b>Solve problems involving mole ratios.</b> Solution concentration. Like dissolves like. <b>Describe the relationship between properties and structure of matter.</b> IMF
10/3		<b>Exam2</b>	<i>Finish Up Solutions, Review, Exam, Start Ch 6.</i>
10/10	Liquids, Solids & Gases	Chap 6	Intermolecular Forces in Liquids and Solids. Gases.
10/17	Acids & Bases	Chap 7	Identify <b>acid-base</b> reactions and their applications in everyday lives.
10/24	Oxidation & Reduction	Chap 8	Identify <b>redox</b> reactions and their applications in everyday lives.
10/31	Organic Chemistry & Polymers	<b>Exam 3</b> Chap 9 & 10	Carbon compounds: structures and names. Alkanes, Alkenes, Acids, Common polymers. Structure. Names and Applications.
		<i>Paper Topic &amp; 5 References due</i>	<a href="http://turnitin.com">http://turnitin.com</a>
11/7	Nuclear Chemistry	Chap 11	<b>Balance nuclear equations. Identify nuclear reactions and their applications in everyday lives.</b>
11/14	Air	Chap 13	<b>Explain the composition of air.</b> Oxygen cycle, Acid rain, Ozone.
11/21	Water	Chap 14	<b>Explain the composition of water.</b> Hard water. BOD. Water treatment
11/28	Household Chemicals	<b>Exam 4</b> <i>Draft Paper due</i>	<b>Explain the chemistry of household chemicals.</b> Soaps. Bleach. Cosmetics.
12/5	<i>Final Exam Review</i>	<i>Final Paper due</i>	<i>Turnitin.com</i>
12/12	<i>Cumulative Final Exam</i>	10:00-12:00 pm	